Hi-Fi World

February 1996 £2.99

For the love of music

Harbeth's
New HL-P3ES Mini Monitor Speaker
- Still Top?

Competition - Win Castle Speakers Worth Over £1800

Stunning Focusrite Red 4/5 Pre/Power Pro-Amplifier

Supplement No. 20 (overseas - inside) free with this issue.

Nad's New 414 RDS Tuner

Valves for Vinyl - With Audio Innovations' P2 Phono Stage

Fastest Growing Hi-Fi Magazine
The sense of occasion - it all starts when your touch reaches the Open button and the interior of the superb VRDS mechanism presents itself. You will know to anticipate music in glorious detail - detail your last player could never find for you. You will also know why: Nothing is able to touch the VRDS mechanism for stability and musicality, and nothing else can touch the DAC which, in the VRDS-10 Special Edition, comes straight from the acclaimed TEAC D-T1. It is your TEAC. Only you can touch it.
Audio Innovations' all-valve phono stage is real hi-fi magic. It’s been heavily ‘tuned’ using special high quality components. LP has never sounded so atmospheric and engaging. See page 23.

Harbeth’s HL-P3ES has leapt upward in cost, yet at the same time we feel it is one of the best small loudspeakers available and, simply by being so good, justifies its price. See page 18.

NAD’s 414 tuner is a delight to use and sweet to listen to - not so common in modern tuners. NAD mass manufacture, but their UK design department gets the sound just right, unlike so many rivals. See page 29.

Mission continue to show just how neatly packaged and clean sounding a modern amplifier can be, with their new Cyrus pre and power, reviewed on page 26.

Wild and wacky - that’s American hi-fi! We spoke to some of their eccentrics. See page 36.

Some hi-fi products stand out as jewels and, often as not, behind them lies a vast fund of knowledge and experience. In this issue we’ve been surprised and delighted - not easy! - to encounter quite a few. It’s a tribute to their designers, whom we know have invested a lot of personal effort. Real hi-fi cannot be churned out, production line style, a new model every year. Jewels take longer to burnish.

There’s a difficult trade off to be made between electronic engineering and sound quality, and that’s where the black art behind modern hi-fi lies.

It wasn’t always so. In times not so long gone, the measured performance of products was obviously wanting. But by the early eighties silicon chips had been perfected. The outcome has been apparent perfection in many areas, especially amplifiers. Yet this has only shown us that there appear to be other factors, ones we do not understand, let alone are able to measure, that significantly influence sound quality. That’s why it’s nice to see products that reflect the abilities and dedication of their designers, showing that it takes more than a few silicon chips casually thrown together to produce a jewel.

Noel Keywood, Editor

IN THE MARCH ISSUE

The month of March blows in with a wintry storm, beaten by the March issue of Hi-Fi World! It’s packed full of the latest equipment reviews, news, readers’ letters, a super competition, classified ads where you can pick up a bargain, music reviews of new releases and more. By the time you’ve read it, you’ll be feeling the warmth of spring creeping in.

Here’s just some of what we hope to bring you:

CASTLE HOWARD SII
Finished in rich Cherry wood veneer and using 1/4wave horn loading for deep and tuneful bass, the Howards certainly are King of the Castles. Noel Keywood sits on the listening throne.

UNISON SIMPLY PHONO
The Unison range of valve amplifiers have found praise with the World staff. Now there’s a dedicated phono stage to match the Simply 2 and 4, called Simply Phono.

ALCHEMIST MAXIM v AURA VA-80SE
Two of our favourite line level integrated amplifiers, the Alchemist Axiom and Aura VA-80 now have talented cousins in the form of the Ma and VA-80SE, each equipped with an in-built phono stage. We are first to test both.

QLN SIGNATURE
With meticulous attention to build and design quality, the QLN Signature loudspeakers promise top class reproduction. We investigate.

Hi-Fi World is still only £2, but with more editorial than most rivals. With the most enthusiastic and expert editorial team in hi-fi journalism, can you afford to miss it? Make sure you don’t by filling in this order form and handing it to your newsagent.
THIS MONTH'S REVIEWS

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FOCUSRITE RED 4/5 13
Douglas Floyd-Douglass discovers whether the fabulous Focusrite Red 4/5 pre/power amplifier sounds as good as it looks.

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Noel Keywood puts the spotlight on the P2 valve phono stage from Audio Innovations.

MISSION PRE/POWER 26
Domnic Baker gets to grips with Mission's fascinating new pre and power combo.

CASSETTE DECK

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Dominic Todd hits the deck to comment upon the DRW-580 twin-deck from Denon.

COMACT DISC

PHILIPS CD721 57
Noel Keywood takes a spin with Philips' latest CD player, the CD721.

MERIDIAN 518 33
Dominic Baker meets the Meridian 518 - a strange animal that is neither fish nor fowl, amp nor CD player, yet fine all the same!

LOUDSPEAKERS

HARBETH HL-P3ES 18
Dominic Baker explains why Harbeth's HL-P3ES loudspeakers are hard to beat.

SYSTEMDEK SYSTYM 165 41
Laura Martin plays the Systym 165s for all they're worth, but what was it worth?

TUNERS

NAD 414 29
Noel Keywood explains why he is NAD about the 414 tuner.

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.
This product information is so hot it will cut your central heating bills.

Our readers tell the World their problems and views.

For the latest opinions and hi-fi rows read our columns.

March into the spring with the next edition of Hi-Fi World.

Be king of your own Castles through this month’s competition.

Join our campaign to introduce compulsory subscription.

In this month’s FREE DIY Supplement you’ll find a unique design for a 15watt single-ended MOSFET amplifier, a review of TL BoxModel - a CAD package for transmission line loudspeakers, book reviews, news from the world of DIY hi-fi and more.

This month we offer you the chance to win one of three pairs of Castle loudspeakers worth over £1,800 in total.

1st prize Castle Howard SII £1090.90
2nd prize Castle Severn £499.90
3rd prize Castle Isis £229.90

Some excellent new releases for your perusal.

Golden Smog: Down By The Old Mainstream

Iona Brown and the Norwegian Chamber Music.

Rock and Pop

Jazz

Classical

The answer to that awkward question “Daddy, where does hi-fi come from?”

The place to come for designer kit.

It’s good to talk - especially to a hi-fi dealer.

There’s more to life than books you know - but not much more.

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In this month’s FREE DIY Supplement you’ll find a unique design for a 15watt single-ended MOSFET amplifier, a review of TL BoxModel - a CAD package for transmission line loudspeakers, book reviews, news from the world of DIY hi-fi and more.

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Some excellent new releases for your perusal.

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Iona Brown and the Norwegian Chamber Music.

Rock and Pop

Jazz

Classical
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If only all decisions in life were as straightforward as this. The fact is that if you want the purest sound and the most uncompromising specification, it simply has to be New KEF Reference. Every speaker must match our engineers' 'reference' prototype to an almost unbelievable tolerance of 0.5 decibels. This means you can be sure that the sound KEF created will be recreated in your home. Exactly.

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Some you can't see, like Oxygen-Free Copper internal wiring or magnetic shielding (vital in Home Theatre). Some you can - sumptuously veneered cabinets with heavily gold-plated feet and terminals, for example. In other words, each pair of Reference speakers is as close to perfection as KEF can make it. When you know you can choose the best, would you willingly settle for anything less?

The experience of sound

SPEAKERS SHOWN ARE MODEL THREE IN SANTOS ROSEWOOD FINISH. KEF AND UNI-Q ARE REGISTERED TRADEMARKS. UNI-Q IS PROTECTED UNDER GB PATENT 2 236929; WORLDWIDE PATENTS PENDING. KEF AUDIO (UK) LIMITED, ECCLESTON ROAD, TOVIL, MAIDSTONE, KENT ME15 6GP. TELEPHONE (01622) 672261.

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HOWARD HAS A LITTLE BROTHER

New from Castle are the Harlech loudspeakers. These, they claim, provide most of the performance of the Howards, but in a slightly smaller and more cost-effective package. They employ a twin bass tuning system, developed to enable the new speaker to provide the same bass performance.

Harlech has a forward facing, two-way drive system, with parallel upward facing bass/mid units similar to those used in the Howard, but slightly smaller. Unlike the Howard, the Harlech has a vertical division up the middle of the cabinet's interior, dividing the enclosure into two entirely separate horn enclosures, each tuned to a different frequency. The tuning frequencies are 54Hz for the front and 78Hz for the rear pipe.

The bass/mid units employ 130mm injection moulded polypropylene cones and the tweeters use 25mm metal alloy domes. Offering 150watt handling they retail at £799 per pair.

Castle Acoustics
Park Mill,
Shortbank Road,
Skipton,
North Yorkshire. BD23 2TT
Tel: 01756 795333

THORENS GO CD

Thorens have announced the introduction of their first CD player. The Consequence TCD 2000 matches the current Consequence amplifiers in style (by the Academy of Art & Design in Lodz) and has inherited the adjustable 3-point transport suspension featured on Thorens' turntables. Other features are: top loading with motor driven acrylic lid, heavy gold-plated brass CD clamp, Philips CDM 12-Pro transport with hex-key level adjustment, adjustable headphone output, mains phase indicator, 110/240 multi-voltage plus remote control which will also control their forthcoming RDS tuner. All this at an RRP of £899.95.

Portfolio Marketing
PO Box 442,
Great Missenden,
Bucks. HP16 OJB.
Tel: 01494 890 277

SUPER MODEL

NHT have a new loudspeaker, the 2.5 model. It is a tower design featuring a side loaded woofer.

The 2.5 has a separate sealed enclosure for the 1" soft dome tweeter and 6.5" midrange driver used. The Focused Image Geometry design of the front baffle is said to enhance clarity, tonal balance and stereo separation. The 8" woofer is vented to produce low frequencies down to 33Hz. The 2.5s are in the shops at £929.00 a pair.

Sound Dept.
33 Beaumont Street,
Oxford. OX1 2PN
Tel: 01865 516800
“Reverend Brown trembled with anticipation as dark cellos entered the room.”

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LINN HI-FI
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GOING FOR GOLD

That centre of hi-fi activity, Cambridge, is now the home of yet another range of loudspeakers from Monitor Audio: the Gold System Series 900 MAG.

The gold tweeter, which is common to the whole family, is formed from an aluminium/magnesium alloy, anodised to a thickness that produces ideal stiffness and damping. Monitor Audio claim the dome exhibits perfect rigidity and is self damping. The outer surround is made of rubber, which is impervious to temperature change.

The crossover is designed to be bi-wireable. The cabinets are all veneered on the inside as well, for stiffness, and the large floorstanders can be lead shot or sand filled. The loudspeakers range from £399 for the CC 900 Centre Channel, to £1299 for the MAG 903 (Tower).

Monitor Audio
Unit 34, Clifton Road,
Cambridge, CB1 4ZW
Tel: 0223 246344

COMING MORDAUNT SHORTLY

Mordaunt-Short announce the addition of a new model, the MS2Si, to their Music Series 'i' range of loudspeakers. This floorstanding model has a suggested retail price of £300 per pair. Features include a 6.5" MCS technology bass/mid-driver and a gold anodised aluminium dome tweeter. The MS2Si complements the recently launched MS10i, MS20i, MS40i, and MS50i loudspeakers and features many of the improvements of these other models.

Mordaunt Short Ltd.
3 Ridgway,
Havant,
Hampshire. PO9 1JS
Tel: 01705 407722

ROGERS HELP LENNOX'S MUSIC STUDENTS

On 18 September 1995 the Lennox Lewis College opened in North London. Its students, aged between 15 and 19, are referred to the college by agencies such as Hackney Education and the Social Services. They are offered a range of courses including art, sport and information technology, as well as music and sound courses which Rogers are supporting. They provide loudspeaker kits for the students to build.

Discussion groups and workshops led by members of Rogers' technical staff are also planned, to ensure that the young people end up producing loudspeakers that are influenced by the Rogers tradition.

Rogers admit that their motives for the scheme aren't entirely pure! A watchful eye, they say, will be kept on the students' progress and work experience placements may be made available to those who are interested.

Rogers International
Unit 3, Common Side East,
Mitcham,
Surrey. CR4 1HX
Tel: 0181 640 2172

DEARER HORNS

Bravura has announced that from 1 January 1996 the company's corner horn loudspeakers, the Accelerandos and the Brios, will go up in price to £6600 and £5950 per pair respectively, including VAT. Changes to the shape and volume of the compression chamber, and the damping materials used, have enhanced performance, say Bravura. It is these improvements, together with other increased costs, that have made the price rise necessary.

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Thomas Transducers
White House Hall,
Hadlow Road,
Tonbridge,
Kent. TN11 0AJ
Tel: 01732 851408
GOODBYE TO MCs
Audio Technica UK have announced the company's exit from the Moving Coil cartridge market. The parent company, Audio Technica Japan, have now ceased production; there were only three skilled workers remaining who could build these delicate Moving Coil cartridges. The situation was compounded by the increasing difficulty in sourcing high quality diamonds.

There are still modest stocks remaining of the ATOC7, ATOC9, ATOC10 and ATOC30, but these are expected to be fully cleared in the early part of 1996. However, good supplies of Moving Magnet cartridges continue to be available.

Accordingly, the ever popular A.T. exchange programme, amounting to 30% off the original prices, will cease when remaining Moving Coil cartridges are exhausted. This sadly closes a chapter of some 33 years of Audio Technica cartridges.

Audio Technica
Technica House,
Royal London Ind. Estate,
Old Lane,
Leeds.
Tel: 0113 277 1441

HI-FI DEPICTS ART
Hi-fi has finally been acknowledged as an art form, well, aesthetically at least. The product designer David Whitfield Lewis, responsible for the distinctive look of Bang & Olufsen audio and visual equipment, has been elected to the Faculty of Royal Designers for Industry. He will be joining an elite club encompassing designers from such diverse fields as Grand Prix cars, ceramics and space launchers.

The distinction of Royal Designer for Industry (RDI) is regarded as the highest honour in the UK in the field of creative design for industry. The awards were presented at the Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA).

CO-MINGLING MOLECULES
The Audio Truth Opal x 3 and Audio Truth Emerald x 3 are two new 'top quality' interconnects recently introduced to the UK by AudioQuest and distributed by Arcam. Both cables use AudioQuest's Triple Balanced Air-Hyperlitz construction, with FPC-6 solid copper conductors and resistance welded FPC copper plugs. This is done by sending a pulse of some 8000 amperes of current through the connection between the cable and the plug causing the molecules of the cable and the plug to co-mingle, giving an audibly superior connection. The Opals retail at £159 and £189 per pair and the Emeralds at £189 and £249 per pair for 0.5m and 1m lengths respectively.

A&R Cambridge
Pembroke Avenue,
Denny Industrial Centre,
Waterbeach,
Cambridge. CB5 9PB
Tel: 01223 861550

POLK MUSIC
Polk Audio have produced three new loudspeakers, the RT3, the RTS and the RT7. All three use a dynamic balance driver component, which is designed to eliminate speaker cone resonances and enhance neutrality. The RT7 features a tri-laminated dome tweeter of polyamide, aluminium and stainless steel. This construction, they claim, contributes to treble extension and smooth response.

The drive units are mounted on 25mm MDF baffles to eliminate cabinet resonances. All models feature dual ports of different lengths which are tuned to a different frequency to provide extended bass response. They also possess an overall impedance compatible with 8ohm outputs and boast a high efficiency of 89dB. The new speakers match music or audio visual systems and range in price from £189 to £299.90 per pair.

Polk Audio
Tyttenhanger House,
Coursers Road,
St Albans. AL4 0PG.
Tel: 01727 827311

INFRA-RED HEADS
Harman have announced the availability of a new range of IR headphones from AKG. The three headphones in the range include the K222IR, K333IR and K444IR, retailing at £99.99, £149.99 and £179.99 respectively.

The K222IR is an OEM product of AKG specification. Up to 25 hours operating time is available via AAA batteries, and a recharge facility is offered. Audio transmission to within a range of 11 metres is provided. The package comes with an extensive range of accessories including interconnects, adapters and batteries.

The K333IR and K444IR however are completely AKG conceived and built. These two have the receiving diodes positioned on each earphone, which apparently ensures a direct line-of-sight to the transmitter from any position, affording maximum mobility to a range of 12 metres. Both headphones are powered by compact rechargeable batteries. A 'charge-while-you-listen' feature allows one to be charged while the other is used.

Harman Audio
Unit 2, Borehamwood Ind. Pk.,
Rowley Lane,
Borehamwood,
Herts. WD6 5PZ
Tel: 0181 207 5050
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and many more

e-mail: sales@musical-images.co.uk

45 High Street
HOUNSLOW
Middlesex TW3 1RH
Tel: 0181 569 5802
Fax: 0181 569 6353

173 Station Road
EDGWARE
Middlesex HA8 7JX
Tel: 0181 952 5535
Fax: 0181 951 5864

18 Monmouth Street
COVENT GARDEN
London WC2H 9HB
Tel: 0171 497 1346
Fax: 0171 497 9205
In no uncertain terms, the Focusrite Red range of components are the Ferrari F50s of British Audio. They are visually stunning, extremely fast - and far beyond the wallet of the average mortal reviewer! Despite that, there are, no doubt, hundreds of drooling beings suffering the same covetous condition as me, before I secured them for review, asking themselves: what do they really sound like?

The Focusrite distinguishes itself in appearance by having a deep red, brushed aluminium fascia, which gives it the much needed strong visual identity required in the competitive pro-audio market, where the pace is furious and the standard of studio equipment extremely high.

Unlike the low-end of hi fi, where sonic...
INTRODUCING THE NEW 600 SERIES

Don't believe all that you read in the press...

just this bit:

B&W has pulled the stops well and truly out for these speakers, and boy does the result sound good... the 601's sound like the voice coils of God. Up-to-the-minute design, gold-plated biwirable sockets: they're a bargain - magnificent for £200.

★★★★★
What Hi-Fi, November 1995

LISTEN AND YOU'LL SEE
For details and stockists of the 600 range of loudspeakers, phone B&W UK on 01903-750750
The Focusrite 4 and 5 pre/power amp combo are expensive by domestic hi-fi standards, whose pricing is these days determined by Japanese mass production. However, the Focusrite is no black box and there's little like it in the audiophile market. The pedigree, reputation and sound honours from the pro-audio market precede the Focusrite range, and at last we are seeing a real crossover product, which should work really well in both industries.

The Focusrite sound is very distinctive - not in a 'take it or leave it' sort of way, but more in an obsessiona 'love it or like it very much' way. Because the electronics are of a very high standard indeed, and the finish, well - I loved it.

Take for example, Seal's first album and in particular the track 'Crazy'. I noted sweetness in his vocal and, despite the distinct separation of all the musical sounds, there was no apparent colouration or strong, attacking equalisation. In the recording industry, many have attributed the 'Seal Sound' not only to Trevor Horn's masterful art of music production, but also to the inherent electroacoustic tweaking abilities of the Focusrite 2 dual-mono parametric. I first heard the Focusrite when engineers at 1993's Re-Pro (Guild of British Record Producer and Engineers) were going 'ape' about the pre-line level quality of the RED2 dual mono equalisers, which they found gave superb transients and high frequency sound, and crisp consonants without sibilance. So Focusrite built a pre/power amplifier combo that would be as much at home in Sarm Studios, as it would be in your listening room.

The build quality is evident as soon as you unpack the duo. Heavy, precise engineering and only deliberate and necessary controls. All signal inputs and outputs are professionally balanced XLRs. In studios, cables are balanced to provide immunity from external noise, and this idea is used throughout the Focusrite 4.

The power amp is embossed with a bold '5', is cosmetically clean and has a discrete on/off, supplementary standby, and operation switches.

The '4' pre-amp has a digitally displayed 'alphanumeric' selector switch - which I mistook for an infra-red receiver! The dimmable display kindly reminds you in no uncertain terms which source you are using, and you can also customise the selection order. The round, recessed VU 'meters are a sort of 'retro' finish, which I found visually arresting - a blend of new technology and tried and trusted tradition. The VUs display the input sensitivity, which is adjustable from +4 to -10dB, allowing for optimal compatibility with almost anything.

There are no 'tone controls' - given Focusrite's reputation in this area, it would have been nice to have one of their famous bypassable parametrics included, but I guess this has been cost-prohibitive. Instead, we have bypassable high and low frequency roll-off filters. Not as useful, or flexible as frequency variable controls, these filters afford effective noise removal at set frequencies, from 8.2 to 22kHz and a low frequency roll off at 50Hz. This feature hails from the recording studio where installed monitors may need LF attenuation and the amp-loudspeaker combo a possible removal of bandwidth noise in the mid-high region.

So - on with the music. I was blown away! Even at the lowest levels, probably around 1 watt continuous on a pair of 89db floorstanders, the bass was really impressive. Tight, bubbly and so controlled - like a restrained cavalry. Rated at 250watts, we measured the 5 at 288 continuous at 8ohms! The power amp has the horses to drive a village pub for the evening, let alone a pair of hi-fi loudspeakers portraying a harpsichord.

Pattitucci's bass line in Paul Young's 'Playhouse' is fast, fat and furious, and again the vocal dynamics and separation were commendable. I did not get the chance to try, but I am convinced that for anyone wanting to kick-start difficult-to-drive systems, the Focusrites are it. They could turn your Quad electrostatics into a Pink Floyd P.A.

While the Focusrite 4 and 5 will continue to grow in the pro-market, this company's bold step into the audiophile world has yielded a muscular yet refined product with individuality, style and superb build and sound quality. The sound is very friendly in that it makes sources and 'speakers sound good, if a trifle colourful, but in all the right places.

Focusrite Red 4/5
£2345/2057

Focusrite Audio
Unit 2, Bourne End Business Centre, Cores End Road, Bourne End, Bucks. SL8 5AS
Tel 01628 819456

WORLD VERDICT
Powerful, smooth and detailed sound. Not as clinical as some professional amplifiers can be.

Measured Performance see p105-111
TRUE MUSICAL

quality hi fi products with style and value

arcam

ALPHA 6 CD

Arcam’s reputation has long been established for class leading performance with their remarkable ALPHA 1 and 5+ CD Players. The new ALPHA 6 carries on from these. The secret is Arcam’s new 20 bit digital audio board, which delivers a musical presentation with more detail, clarity and depth than ever before. The ALPHA 6 offers slimline styling and a minimalist layout, ensuring ease of operation as well as making it an ideal aesthetic match for Arcam’s own Alpha series of amplifiers, especially the new ALPHA 6+. These two models combine to provide the convenience of full remote control operation and outstanding sound quality. However, the astounding sonic performance of the ALPHA 6 means that it will also complement more expensive ancillary products like the superb Delta series from Arcam.

At every Sevenoaks Hi Fi branch you will discover the Arcam Alpha and Delta series of products.

meridian

STUDIO 20SE

The breathtaking Studio series of loudspeaker’s from Monitor Audio, offer a no compromise approach to design and construction. This is obvious the first moment that you see them. Whether they are finished in a standard satin veneer or a luscious grand piano lacquer, the STUDIO 20SE’s will offer remarkable transparency and the necessary focus to reproduce complex passages of music with glorious accuracy. To experience the Monitor Audio Studio series contact your local Sevenoaks Hi Fi branch.

audiolab

8000Q

With the introduction of the 8000Q pre amplifier, Audiolab are able to offer an audiophile product, capable of working within any quality ancillary combination. New Zq technology ensures ultra low noise and distortion, while a printed circuit layout realises the optimum signal path. The 8000Q is best described as a purist design. Six line and three tape inputs mean it is an ideal partner for Audiolabs own 8000P or 8000M power amplifiers. Yet, the convenience of remote control operation does not detract from the 8000Q’s outstanding performance.

Every Audiolab product offers a logical upgrade path, ensuring every model purchased today will perform for many years. For more information on the complete Audiolab range, including the 8000A, 8000C, 8000T, 8000QD, 8000D, 8000P, and the new 8000S, then contact your local Sevenoaks Hi Fi branch.

quad

77 CD

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World Radio History
EXPRESSION
for hi fi connoisseurs and music lovers

The introduction of the new 77 CD Player enables Quad to offer a system with almost limitless expansion capabilities. Available in two guises, either as a conventional mains powered CD Player, which offers all the hallmarks of performance and style you associate with Quad or a bus powered CD Player which must be connected to the revolutionary new 77 integrated amplifier and operated by the new intelligent remote control. With the addition of a 77 digital tuner this exciting family of products will soon be complete. Thus, ensuring Quad continue to master the art of combining innovation and tradition.

Each model in the superb Castle range is engineered to look good and sound great. The new SEVERN are Castle Acoustic’s two-way, reflex floorstanding loudspeakers. Their hand crafted enclosures incorporate newly developed drive units. A long throw bass/mid range driver and a soft dome ferro fluid tweeter, with off-set configuration, ensures outstanding stereo imagery, making them adept at handling all types of music, like the bigger Castle HOWARD II. Although the SEVERN has a slim profile and a very small ‘footprint’ it generates a surprising level of controlled bass. A matching veneered spiked plinth in one of Castle’s extensive finishes provides extra stability and style.

Mission have been at the forefront of quality loudspeaker production for many years. However, until they launched the 753’s the market for slim floorstanding loudspeakers was very small indeed. The 753’s changed that almost overnight. From the day of their launch they received critical acclaim from the Hi Fi press. The four identical bass/mid driver and tweeter array offers a fine balance and a lively open performance, which ensures that all music is delivered with stunning realism, especially when combined with quality amplification like the Cyrus range of electronics.

The CD63SE offers the kind of sparkling performance normally associated with audiophile CD Players. Marantz are one of the few dedicated manufacturers that aim to make recorded sound as realistic and enjoyable as possible. This development of hi-fidelity has led the Hi Fi press to bestow numerous Best Buys and Recommendations upon models within their range. The most recent being the award of Best Buy status upon the CD63SE from What Hi Fi? At the heart of the CD63SE a high mass drawer mechanism provides precise transportation with accurate tracking and retrieval of the information stored upon the CD. The CD63SE also offers a logical upgrade path with its optical or coaxial digital outputs. With this pedigree the CD63SE represents exceptional value for money. For a demonstration on the Rotel range, including the superb RCD970BX CD Player and the RC/RB970BXMKII pre and power amplifiers, then visit your local Sevenoaks Hi Fi.

Designed and developed in the UK, like all of their models, the RA970BX integrated amplifier offers the same solid build quality and delivers the type of performance you expect from this discerning manufacturer. Four line inputs, a tone defeat switch and a split volume knob provides finite adjustment. When partnered with suitable loudspeaker’s the RA970BX delivers music with a close attention to detail. For further details on the Rotel range, including the superb RCD970BX CD Player and the RC/RB970BXMKII pre and power amplifiers, then visit your local Sevenoaks Hi Fi.

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Added value offers not available on price match sales.
Harbeth have just launched the new HL-P3ES mini-monitor loudspeaker. Dominic Baker checks its seaworthiness.
Of all the high quality miniatures around, Harbeth’s HL-P3s are the ones I hold in highest regard. Capable of providing a thoroughly coherent and musical performance, they have always stood out as being a little special. Now the five year old HL-P3 has been updated. In its new ES guise the cabinet is slightly deeper and it uses a new driver and crossover complement. It is also magnetically shielded for AV compatibility. Why, I don’t know. The thought of a pair of P3s sitting on a TV cabinet either side of the screen makes me wince; these ‘speakers are a serious hi-fi product, and as such deserve more purist attention.

So, with due regard for their status, I first selected a pair of heavy Target R2 stands, but finally settled on a pair of open frame ES11 stands. With these a touch of bass weight was lost, and they needed to be slid back a few inches towards the corners of the room to compensate, but extra openness gained through the midrange more than justified this.

Worth a mention at this point is the kind of power amplifier you’ll need to drive the P3Es. I used a DPA50S, which although only rated at 60 watts can supply massive current into low impedance loads. Our Audiolab 8000M monoblocks struggled and weren’t really happy. I’d recommend something along the lines of Chord’s SPMI200, or one of the bigger Sugden power amplifiers; it really is a case of the bigger the better when driving the HL-P3s.

It was nice to be back in front of a pair of Harbeth HL-P3s again, and I was looking forward to seeing what the developments made with the new ES model would mean in terms of sonic performance.

The P3s have always had a rightness about the way they produce music. Instantly convincing, they draw you into the music, revealing its inner structure. First track on was ‘I’m Hungry’ by the Sugarcubes, an intricate track loaded with complex percussion and a vocal that cuts sharply through the mix. The HL-P3Es steer a clear path through productions like this, tightly locating each and every instrument and vocalist in space.

Harbeth claim to have squeezed more bass out of the new ES loudspeakers, but even after several days running in, I couldn’t hear it. The dynamic punch as the intro of Senser’s ‘States of Mind’ kicked in was certainly impressive, but the ‘speaker now has a dryer upper bass and the low subsonic rumble wasn’t really portrayed as fully as I would have hoped. The original HL-P3s had fuller bass, I recall, being more mellifluous in their character. The new ESs certainly pack a more controlled punch, especially with bass guitar led tracks like REM’s ‘Low’, but they didn’t sound as full bodied.

‘Mellow Doubt’ was a real eye opener. This Teenage Fanclub album, Grand Prix, had a dry acoustic balance, but was super clean, with vocals which had great projection and natural presence. Percussion was so crisp and lifelike that I felt I could reach out and touch it. The vocal harmonies on ‘Say No’ were so smooth and focused, each vocalist clearly separable, yet beautifully grouped, and accompanied by incisive strumming of acoustic guitar.

‘Tears’ was superbly projected on to a wide and deep stage, imaging was unquestionable in its correctness. The HL-P3s got it right. This track started with a simple vocal accompanied by piano, both showed richness and presence. Then violin, viola and cello swelled up from the right and glided onto the sound stage, whilst percussion and brittle, staccato guitar chords punctuated the melody from the left. Trumpets sang out the instrumental chorus with brassy hardness, along with violin which rose smoothly and with a great sense of acoustic space above other strings. I suspect that this album owes a lot of its clarity and smoothness to the valve equipment used in its recording and the HL-P3Es were able to take full advantage of this quality.

Pressing some vinyl into action, The Doors’ L. A. Woman sounded fantastic, capitalising on the coherent nature of the P3s to create a temptingly realistic sound. The atmosphere of the recording studio came across well, the signature of the clatter from the studio walls describing their reflective nature and its compact size. It is surprising how good this 1971 recording is. If you ignore the limited bandwidth and dynamic range, what comes across is an extremely natural and live acoustic, the instruments’ tone superbly captured.

With the new HL-P3ES Harbeth have ensured that they stay top of the mini monitor league. Although slightly colder sounding than the original HL-P3, which had a softer balance, they are now very direct and precise in what they produce.

It is a great shame that the price has risen so much though. At £479 they were extremely competitive. Now, at £799, they are expensive. But all the same, in my view they are still the finest mini-monitor available for under £1 000, and with the addition of a REL Strata subwoofer, I doubt there’d be much competition. They’re a fine example of good loudspeaker engineering.

Harbeth HL-P3ES
£799
Harbeth Acoustics
Unit 1, Bridge Road,
Haywards Heath,
W.Sussex. RH16 1UA
Tel 01444 440995

WORLD VERDICT

Superb quality monitor with few rivals, but pricey and difficult to drive.

Measured Performance
see p105-111
A new twin cassette deck isn't exactly the kind of thing that will normally have hi-fi enthusiasts queuing round the block. But, for many people, their flexibility and dubbing facilities make them an invaluable part of the hi-fi system. There are some decent machines out there too. Denon have always had an excellent reputation for their twin decks, which have tended to major on sound quality rather than flashing lights and buttons. Their latest model, the DRW-580, has a lot to live up to, even when its reasonable £200 price tag has been taken into consideration.

The styling is something of a disappointment. Just a little too cluttered and plasticy. The build quality seemed solid enough, though. Feature wise, it's like just about any other Japanese twin deck at this price. Auto-reverse, bias control, logic controls and a timer setting are all there. Fortunately, the 580 doesn't light up with a "hello" message when powered up. It has been known!

Dominic Todd checks out a good recorder for duplicating, Denon's new DRW-580 twin cassette deck. Will he congratulate Denon for their duplicity!

My trusty pre-recorded Dire Straits 'Money for Nothing' was first into the (rather noisy) transport. The Denon immediately provided a bright and crisp balance that meant it was prone to a fair amount of tape hiss, even with Dolby B. It was, however, blissfully free from the wooden, heavy handed bass response of many competitors at this price point. There was a slight emphasis on vocal sibilance, but it wasn't really off-putting. Pitch stability with guitar wasn't the most rock solid, but again, it couldn't really be faulted against competing players (a Kenwood 6060 I briefly tested against the Deron was notably weaker here). The light and breezy balance could make vocals sound a little insubstantial, but the imaging was fine, creating a decent impression of transparency.

A Jocis Holland pre-recorded tape tested the 'decks stability with piano music (one of the most difficult instruments for tape decks to reproduce accurately). Again, the percussion sounded crisp and spacious. The piano was mercifully free from excessive pitch instability. The only real problem came from brass, whose dynamic outbursts were somewhat smeared. The bass weight was just right.
though, leading to a pleasing result in all.

Turning to a Type I tape (a Maxell XL-15 in this case) produced mixed results. Although there was fine detail shown with percussion, and more vocal solidity than with pre-recorded tapes, recordings were disappointingly hissy and softened in balance. A switch to TDK AR improved things, but only marginally. Using the same Cranberries and June Tabour CDs to record from, I switched to a Type II tape. Again it was a Maxell (XLII), but this time the results were far more favourable. The music benefited from better definition between instruments and was crisper overall.

Although the Type I tape had been good in picking out percussion detail, the chrome tape had the edge, reproducing subtle cymbal decay. Hiss levels were lower, allowing the listener to completely abandon Dolby with louder music. Vocals were well projected from the 'speakers, and piano took on a more substantial tone than it had previously with ferric tapes.

Although metal tape and a £200 twin cassette deck are an unlikely combination, I decided to go the whole hog and test the Denon's abilities with a super metal - That's Suono tape (£9) - as well as the more common TDK MA. To my surprise, the DRW-580 handled both without disgracing itself in the least. However, improvements made over the Type II tapes were marginal, leading me to recommend chrome tapes as the best all-rounders. Still, the Denon didn't shy from the huge dynamic range available on metal tape. Indeed, with particularly dynamic sections of music there was less compression and smearing, at high recording levels, than had been the case with cheaper tapes. The harshness and excessive sibilance that can afflict certain cassette decks when recording with metal tapes was also absent.

In summing up the Denon's abilities I'd say it's a solid, capable deck and good value too. However, don't go away with the idea that this is as good as cassette gets for the money. There are many single decks, including Denon's own DRM-640, which will give a noticeable improvement in sound quality. So this isn't really one for the audiophile. There's too much smearing and not quite enough bass definition or pitch stability. However, as far as £200 twin 'decks go, it's about as good as you get. There's a clean, crisp balance, reasonable stability and a good frequency response that's not dominated by woolly bass. It's happy with most types of tape, and has all the features you'd expect from a twin cassette deck. I have to say, Denon have done it again: the latest DRW-580 can quite proudly take the mantle from its distinguished forebears. Recommended.

Denon DRW-580 £199.99
Hayden Laboratories Ltd, Hayden House, Chiltern Hill, Chalfont St. Peter, Bucks. SL9 9UG T 01753 888447

**WORLD VERDICT**

Good value and performance, but bettered by Denon's own single decks at the price.
siren n. 1. (Gk Myth.) creatures half woman, half bird, living on rocky isle to which they lured seafarers with enchanting singing.

2. sweet singer.

Back in the good old days, when life was simple and so were those that lived it, there was a group of men that called themselves Alchemies. They heralded the beginnings of what we might call the scientific age. By questioning the world around them, they devoted their lives to finding ways of changing the unchangeable: to transform. Transformation is the process of turning something that is plentiful but ordinary into something special. Water into wine, lead into gold, and in our case, hi-fi into art. That's why we called our company Alchemist. Anyone with a little technical know-how can build an amplifier. The components are freely available and a rectangular box is easy enough to make. At Alchemist we endeavour to transform the ordinary into something special, something unique - something you can be proud of owning.

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RUSSELL J. FLETCHER
PENDARVES STREET, TUCKINGMILL,
CAMBORNE, CORNWALL TR14 8NJ
Audio Innovations' P2 all-valve phono stage is one of today's best upgrades for the LP, says Noel Keywood.

Nowhere are the wonders of thermionic amplification more apparent than in valve phono stages. Pickup cartridges develop a weak signal from a very high quality source that cries out to be treated well, but is easily ruined. Solid-state preamps too often bring a hard, glassy sound to the LP that makes it sound like a CD clone. By way of contrast, a good valve phono stage brings wonderful clarity, dimensionality and vibrancy to the LP, free from that hardness and flatness of tone that so limits solid-state. With this in mind, I looked forward to reviewing Audio Innovations' all-valve P2 phono stage.

The P2 is as large as a normal amplifier. Its grey steel case houses a shunt regulated (all valve of course) power supply, plus a brace of ECC83 double triodes for amplification. The front panel has a volume control and a power switch. Placed beside the turntable, the volume control is especially handy. The rear carries an earth lift switch, high quality phono input and output sockets, an earth terminal and an IEC mains input socket. This unit caters only for Moving Magnet cartridges. A transformer is available for Moving Coils and I tested this too.
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The Reviewer Choice
As a piece of functional furniture the BASE Racks and Platforms together are a work of art - Dave Wiley, Audiophile Magazine.

The Customer Choice
It's refreshing to find a complete isolation system that values aesthetics as highly as it does sonic benefits - Mr. PM Rodwell, Cornwall.

Thanks!! The improvement is astonishing and after hearing and trying other audio stands, the performance of BASE is second to none - Mr. M. Slattery, Sussex.

The Audiophile support brings the sound I hear at home one step closer to the sounds we create in the concert hall. Bravo - Dr. K. Murphy (Classical Musician)

For more details and a product portfolio please telephone

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Audiophile Furniture Limited
The Square, Forest Row, East Sussex RH18 5SE.

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“It’s the crispness and detail in the sound that’s so mouthwatering”

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Audio Innovations have populated the P2 with special parts such as paper-and-oil (dielectric) capacitors. Designer Guy Seargent emphasised the point that he has equipped the P2 Phono with a regulated power supply most would consider unnecessarily sophisticated. But there you are, there are plenty of special touches in this unit.

With my favourite Moving Magnet cartridge, a Goldring 1042, installed in our 12in 3012 SME arm and my Garrard 401's strobe markings holding rock steady, I lowered the arm onto 'Graveyard Train', from Creedence Clearwater's Bayou Country. This is a simple but dramatic old (1969) recording, rich in the flavour of America's deep south. Fogerty's gravelly voice jumped out at me - a surprise, even a shock, after the flatter perspectives of CD.

The P2 resolved his vocals superbly, catching the intonations and inflections Fogerty used so forcefully on this haunting track. Stu Cook's simple, repetitive bass line sounded tight as a drum, the twang of the strings vibrating clearly as he maintained a melancholy tempo. I felt guitar chords were just a little more than usual. Vinyl became a new experience for me. I only recommend you choose your cartridge carefully, because of this preamplifier's extraordinary insight. In my case, Goldring's 1042 came through this test with flying colours. It seemed to benefit more from the P2's searching gaze than the moving coils; funny I know, but true.

Stereo images were pin sharp on the sound stage and reverber was captured with an alacrity that defies CD. John Lee Hooker's 'Boom Boom' held together wonderfully. With 'Bad Like Jesse James', the reverber bounced between the speakers, an effect not so obvious on CD. I'd noticed the solidity and certainty of panned images through the P2, Fogerty suddenly moving from one side of the stage over to the other. Big Youth's 'Lightning Flash (Weak Heart Drop)', with its intriguing dub mixing was vividly reproduced, although the hi-hat had possibly just a little more shimmer than usual. The innate midrange brightness of the P2 again became apparent on the Texas album, Ricks Road, where cymbals, hi-hats and other percussion instruments stood out a little more than usual.

Performance with moving coil cartridges, dependent upon the quality of Audio Innovations' T2 transformer, proved a little more difficult to assess. I fancy our Ortofon MC30 Supreme sounded a little richer and more detailed through the T2 transformer than through Ortofon's own £230 T20 MkII, but there was little in it. Both seemed to introduce little degradation, since the MC30 has enough output to drive the Audio Innovations' preamplifier direct, albeit with some hum. I also used a Linn Arkiv/Ekos/LP12 Lingo through the Audio Innovations transformer. Even though the Arkiv has very low output, there was no hum, providing the transformer was kept well away from the P2 power supply. Treble was sweet, bass large and solid. There were no problems here either so the MC transformer that can be bought to accompany the P2 is a good one.

The sheer sense of atmosphere and spaciousness this preamplifier generates is extraordinary. The P2 has the finest bass I've ever heard, characterised by power, suppleness and expression, and probably the best resolution of textures and tonal colour too.

Without reservation, this must be one of the best phono preamplifiers available, and by a big margin. Vinyl became a new experience for me. I now recommend you choose your cartridge carefully, because of this preamplifier's extraordinary insight. In my case, Goldring's 1042 came through this test with flying colours. It seemed to benefit more from the P2's searching gaze than the moving coils; funny I know, but true.

Audio Innovations P2 £749
T2 transformer £425
P2 MC (in-built transformer) £949

Audio Components
Albany Court, Albany Road, Granby Ind. Est., Weymouth, Dorset. DT4 9TH T: 01305761017

WORLD VERDICT

Fantastic bass and super insight make this one of the best phono stages around.

Measured Performance see p105-111
Mission's Cyrus range has a new top amplifier, the pre and power. Dominic Baker checks their credentials for kingship.

The new Cyrus £649.90 pre and £449.90 power reviewed here have a completely different circuit topology to earlier models, even though the units share the same solid and smartly finished cast chassis used with the rest of their range of electronics. Mission told us they are applying for patents.

Similarities don't end there. The pre and power also have high tech microprocessor control and surface mount components - both key features. Microprocessor control provides the user with some valuable benefits. The pre is remote controllable, volume having 512 separate positions. And by holding down the input selector buttons on the front panel for a couple of seconds, the pre will allow you to set input sensitivity + or - 4dB, using the volume control. This ensures all inputs come through at similar volume levels, so you won't get blasted across the room when switching from tuner to CD.
Most interestingly, the pre comes with a plug in Moving Magnet (MM) phono card, and there is an optional Moving Coil (MC) version too, so vinyl lovers are well catered for. These cards can be usefully unplugged and turned around to act as an extra line input if you don't use vinyl. It is good to see Mission recognise that most of us still have hundreds of LPs we're determined to play.

Our tests showed the power can deliver a healthy 66 watts in stereo guise but with the addition of a PSX power supply, it can be used as a 100 watt monoblock. If you short the outputs of the power amplifier by accident, don't worry - the power will protect itself. If you do it a second time, it decides enough is enough and shuts down until you turn the main power off and then on again to allow you to clear any short safely.

I was glad to find that Mission's new pre/power combo had a smooth and rich balance, noticeable from the first track I played, which gave it a full and rounded sound. Nirvana's 'Oh Me' from the MTV unplugged recording had guitars bursting with woody resonance and strings with a powerful thrum swelling to fill the room. This amplifier certainly couldn't be described as dry or cold, in fact it was quite the opposite, and very different from Mission's previous integrated designs, which have had a gentle natured. Acoustic strings were clearly spotlit on a wide stage, with a crisp edge to transients clearly depicting each note from a plucked viola behind the articulate bass playing. But there was no real weight below the upper bass, the phono stage cutting low bass to prevent record warps causing cone flap with reflex loudspeakers. The rest of the mix was clear and open, if a little fuzzy around the edges.

This effect was even more noticeable with Texas' Sharleen Spiteri, whose vocals weren't as tightly focused and projected as they can be. Strong cymbals on the B-52's 'Planet Claire' caused some slight discomfort, powdery in texture but fierce with it. Having said this, the general clarity and lack of noise makes the phono input more than listenable.

If you want a sweet and pure sound, free from grain, the pre is definitely worth an audition. It's not the last word in spaciousness of sound, but there are only a handful of alternatives in its class that improve on its weaknesses whilst equalling its strengths. The power, however, is something of a honey. Rich and smooth, but with a firm grip on timing and control, it possesses a fine blend of properties. Really silky solid-state power amplifiers like this one are still rare, even more so at under £500.

The Cyrus leapt into life, kicking out the beat with a solid punch. Compared with the vice like grip of some larger and more esoteric power amps, the Cyrus could linger on notes a touch too long; the initial leading edge transient was always spot on, but the note itself didn't fall into such a tightly defined envelope. The tuneful Cyrus, and a lot of Britain's smaller power amplifiers, come into their own, through the subtlety and deftness with which upper bass lines are played.

This was enforced when I tried the Cyrus phono stage, fed from a Goldring 1042 cartridge. The Stone Roses' 'Straight to the Man' had a rich and melodic upper bass, firm drive revealing the articulate bass playing. But there was no real weight below the upper bass, the phono stage cutting low bass to prevent record warps causing cone flap with reflex loudspeakers. The rest of the mix was clear and open, if a little fuzzy around the edges.

Of the pairing, the power is the stronger; surprisingly smooth, and responsible for a lot of the body in the sound. The pre has a clean, neutral sound free from grain, but not quite the low level detail and atmospheric qualities of a Michell Argo, for example. Fed from an Ensemble Dichrono, a CD converter with a high quality volume control in-built, the power amplifier was capable of resolving more of the acoustic space around performers. With this set up, P. J. Harvey pulled forward on the stage, each note from a plucked viola behind her sounding like a droplet of water spreading out across the set. With the pre back in place some of the subtleties were lost and the stage narrowed in its spread and depth.

With larger orchestral pieces, such as the RCA Symphony Orchestra's Der Rosen Kavalier suite, the pre and power bestowed impressive scale on the production, kettle drums thundering in from the back of the stage whilst violins soared sweetly, accompanied by full bodied cellos on the opposite side of the stage.

The sound stage was a bit limited in width though. Bass didn't sound as far right as it should and wind instruments were hemmed in on all sides. Again, driving the power direct gave a more complete picture, opening up the stage. If you want a sweet and pure sound, free from grain, the pre is definitely worth an audition. It's not the last word in spaciousness of sound, but there are only a handful of alternatives in its class that improve on its weaknesses whilst equalling its strengths. The power, however, is something of a honey. Rich and smooth, but with a firm grip on timing and control, it possesses a fine blend of properties. Really silky solid-state power amplifiers like this one are still rare, even more so at under £500.

Cyrus pre £449.90
Cyrus power £449.90

Mission Electronics
Stonehill,
Huntingdon,
Cambs. PE18 6ED
TP 01480 451777

WORLD VERDICT
Pre
Power
Preamplifier has plenty of facilities, but conventional enough sound. Power amplifier was impressive in all respects.

Measured Performance
see p105-111
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![A SYMBOL OF PRECISION](image)

"THE MOST DESIRABLE DECK BELOW £1500"

Ken Kessler - Hi-Fi News & Record Review August '94

Michell Engineering, 2 Theobold Street, Borehamwood, Herts WD6 4SE
Tel:- 081 953 0771
Unassuming is the best description of this tuner's style. NAD use the simplest of control layouts, but always a sensible one, with buttons grouped according to function, precedence given to those which find most use. Since the 414 incorporates the Radio Data System (RDS) which can give a wealth of information, providing it is being transmitted, it has a large alphanumeric display panel capable of showing station names, frequencies and other data, associated selection buttons being grouped below this panel. On the right lie all the usual functions found on a modern synthesiser tuner, the main departure from normal practice being use of the rotary tuning control as a selector for preset station numbers. It changes function when a button marked Preset is pressed.

NAD fit Medium Wave and VHF FM, covering the usual frequency bands of 522kHz-161kHz and 87.5MHz - 108MHz respectively. Medium wave tunes in discrete steps of 9kHz, as usual, but FM manually tunes in relatively fine steps of 0.025MHz, so stations with a small frequency displacement can be tuned accurately. This is also very useful for minimising interference from a nearby station. Noise muting can be lifted manually by selecting Mono mode, to allow weak stations to be captured.

Although tuned in, Noel Keywood decides that NAD's 414 RDS tuner definitely doesn't opt out.
CYRUS
PRE-POWER

Musical Images Ltd
18 Monmouth Street
Covent Garden
London
WC2H 9HB
Tel. 0171 497 1356

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30 FEBRUARY 1996 HI-FI WORLD
Alternative Wide/Narrow selectivity modes are provided, but as with most modern designs, Wide was pretty narrow I found from tests, offering 76dB selectivity overall, a very high value. Narrow mode is really for very difficult conditions, where strong stations are separated by just 0.2MHz.

The tuner automatically switches in an RF attenuator if a powerful input is sensed, causing a Local legend to light. This is most likely to be needed when working from a cable, rather than a terrestrial aerial. The NAD does not have twin switched inputs to accept two RF sources, however. NAD provide auto tuning as well as manual tuning, but in practice most people will use the presets, of which there are thirty in all, ten per bank.

The 414 tunes through its pre-sets, which is an interesting and effective way of doing things. I found it easy to use, the only problem being the usual one that our outdoor aerial swamps a tuner like this with stations, distant Radio 2 transmissions looking strong enough to be mistaken for our 'local' transmitter (Wrotham). Here, the signal strength meter proved its worth, as only the locals could get it past 1.25mV. The first three sectors of this indicator light with minuscule signals of 8μV or less, which isn't a lot of use. Then there's a jump to 250μV - a healthy signal - to light the fourth sector and finally to 1.25mV to light the fifth sector. This last sector does show when the tuner is receiving enough signal to give minimum noise and maximum clarity.

Both build quality and finish were good. The tuning knob spun smoothly and the buttons had a firm feel to them. Our measurements showed that, like the excellent 402, it has been very well aligned and offers a fine measured performance, right up with the best.

SOUND QUALITY

The 414 proved as smooth and mild mannered to listen to as the excellent 402 which we've raved about. Too many tuners have treble lift and a thin, often harsh sound. This is where the NADs are consistently different and better. Without tailoring the sound by introducing response inaccuracy, NAD have managed to ensure the 414 offers a smooth and clear upper midrange. This was especially kind to strings, I noticed, listening to Vivaldi on Classic FM, up at 100.9MHz. There was a gratifying lack of harshness that allowed me to relax into the music. There is, undeniably, a little warmth and softness in the treble, but if the 414 errs, it is in the right direction.

Earlier in the day, nursing a sore head from the night before, I'd been relaxing to Radio 3's gentle programming and again I found the 414 proved a faithful friend in offering a delightfully smooth, open and atmospheric sound. It images strongly and reproduces the stereo sound stage with convincing dimensionality.

"the 414 proved a faithful friend in offering a delightfully smooth, open and atmospheric sound. It images strongly and reproduces the stereo sound stage with convincing dimensionality."
PLAYING WITH NUMBERS

Meridian's new 518 processor buffs up the digits to get a better sound from CD. Dominic Baker finds better bits can sound more attractive.

It isn't often that you come across a totally new concept in audio, but Meridian's new 518 is certainly that. Imagine being able to replace your existing preamplifier, which by its very nature degrades the sound, with something that can actually improve the signal. Let me explain further.

The Meridian 518 is a clever box of digital electronics. Its basic function is to remove the jitter in the digital signal between transport and CD convertor, typically heard as coarseness through the
GETTING TO THE SHOW
Temple Meads Station is a short distance from the Marriott and is accessible by bus, foot or taxi. By car, from the M4 (Wales to London) take J19 (M32 Bristol) at J3 the M32 becomes a conventional dual carriageway. Follow signs for City Centre.

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midrange and treble. A CD convertor relies upon the transport's master clock to stay in tune; the digital data arrives at precisely the right moment.

Jitter makes the digital transport signal arrive at the convertor a fraction too early or late, putting it out of sync. The 518 de-jitters a signal by using two phase-locked loops. These act like progressive flywheels, following the average sample rate exactly, but removing short term signal unevenness. The PLLs lock onto the signal and regulate it so that its timing is consistent.

The price of £895 seems a lot for a jitter buster, so it's just as well the 518 takes things a whole step further. It can also act as a digital preamplifier, varying the volume of the signal before it gets to the CD convertor. This means that you no longer need a preamplifier; the CD transport feeds the 518 which de-jitters the signal and sets the volume level, the digital signal is then passed on to the CD convertor which is connected directly to a power amplifier. This removes a whole analogue section in the reproduction chain, and any associated degradation, replacing it with something that is actually improving the quality from your CD player. Not bad eh?

There are some precautions to observe when using the 518 in this manner though. Take a glance at the measured performance of any CD player or convertor in the back of Hi-Fi World and you will see that distortion rises strongly as level drops, simply because there's a loss of resolution. As volume is turned down on the 518, less and less of there's a loss of resolution. As volume is turned down on the 518, less and less of the full 16-bit word describing the signal is used, so the CD convertor sees a lower resolution signal.

In practice this means that if you have a sensitive power amplifier and loudspeakers, it may be possible to hear some distortion and noise when using the 518. The digital signal fed to the CD convertor will be so low that it is producing an audible amount of noise and distortion. This was the case with a power amplifier of 280mV input sensitivity and loudspeakers of 94dB SPL sensitivity which I tried. Distortion was clearly audible, making the sound fuzzy and vague, so the 518 cannot be used in all systems.

The 518 does have real strengths though. Coupled to a power amplifier with an input sensitivity of around 1V, and using Harbeth's 83dB sensitive HL-P3ES loudspeakers, the 518 was working high up its volume range, driving the CD convertor where it is most linear. Here, the results were breathtaking, its clarity and dynamics overwhelming. What a contrast between the two situations!

This difference came as a bit of a shock: driving the power amplifier direct from the CD convertor made such a difference to the solidity and attack of every transient. The Chemical Brothers were really funky, deep bass lines crisply captured with super timing and resolution. At first, it all sounded a bit much, somewhat akin to an active system, where every beat is that much more direct and forthright, yet at the same time brutally stark. But after living with the 518 for several weeks, I realised just how much extra resolution and detail it offers without becoming fatiguing.

Vocals were smoother and clearer, improved focus giving them a superb sense of realism. Pj Harvey grew on the stage to give a life size rendition of 'C'mon Billy', raw with emotion, which seared from the speakers. I felt the clarity was exceptional; Polly was as loud and rasping as she should be, yet the recording struck me as smooth and uncompressed; a display of easy power.

Meridian have made a brave move with the 518, a move that really is ahead of its time, at least in terms of audio. In decades to come I suspect that a lot of our digital sources will be controlled in this way, but at the moment such powerful technology must be used with care. It really is a device for those who only use digital sources, unless you are prepared to go as far as converting all of your analogue sources to digital with Meridian's 562 A/V convertor, as they suggest (what! convert the signal from my £500 MC cartridge to digital? I think not!).

Used in a simple system with, say, CD and DAT as sources, and the 518 feeding CD convertor then power amp., its advantages are unrivalled. That makes Meridian's 518 impossible to ignore. But you'd also need a good dealer to explain, guide and help set up the system, because everything must be carefully chosen - and I found setting up the 518 properly is no mean feat. The instruction manual is far from straightforward, with different settings needed for word lengths, dither modes, emphasis, etc.

It's all clever stuff and very effective in the right system. If it suits, then for £895 this is one of the best CD upgrades you could make. I was impressed.

Meridian 518
£895

Meridian Audio Ltd.
Stonehill,
Huntingdon,
Cambridgeshire. PE18 6ED
Tel 01480 434334

WORLD VERDICT

Superb sound from CD, providing it is uncompressed: a display of easy power.

"I realised just how much extra resolution and detail it offers without becoming fatiguing."

Inside the 518 are twin phase locked-loops to reduce jitter.
Noel Keywood finds DIY hi-fi as much a part of the American way as apple pie.

ONLY IN AMERICA!
Where in the world can you find a Cookbook telling you how to build an electrostatic loudspeaker? America. Where do you find a Quad Owners' Club, a Triode Society and - how's this - the Southeastern Michigan Woofer and Tweeter Marching Society!! Only America.

Varied and vast, it seems to me, as a bemused and slightly envious observer, the U.S. hi-fi scene is fascinating. It's unlike our own and has a lot to offer Brits. You can phone for a few bob nowadays and if you mail order, say, a cartridge from Jerry Raskin's Needle Doctor on Monday, paying by Visa, you should have it by Friday. These days America is next door and they speak the same language - sort of. Don't do what I did in an absent minded moment. There was a thoughtful silence from the Western Electric switchboard operator when I asked to speak to somebody about valves: "We don't manufacture water valves sir" came the reply.

What America does manufacture, however, is definitely worth inspecting. And although you might think U.S. products are already here big-time, from Ford cars to Kelloggs' Corn Flakes, you'd be wrong. Their gems they keep to themselves. Do you know that much of the Hi-Fi World library comes from the States - even our British books. And we get books quicker from the U.S. than from U.K. suppliers. Here's a quick look at what else America's got to offer.

PUBLICATIONS
The Quad Owners' Club would issue tomes on Quad products, often with an eye to modifying them. I realised just how far Yanks take all this when I spotted valve direct-drive for the ESL-63. That's something of an achievement in all areas of hi-fi endeavour, a bit like building your own space shuttle. Alas, the Quad Owners' club is no more, which is hardly surprising if that's what turned them on. This is when hi-fi becomes a self-extinguishing hobby!

Hi-Fidelity, both from Hatchett Publications, based in New York, are their mainstream 'overgrounds', whilst Stereophile is a more specialist 'enthusiast' publication. There's Absolute Sound too. In basic approach these mags aren't so different from Britain's, even if they inevitably differ in the detail.

Whilst their overgrounds are editorially conventional and the publishing side determinedly commercial, the hands-on underground is a cauldron of ideas and activity.

UNDERGROUND PUBLICATIONS
Life gets interesting in the swathe of hands-on titles that exist quite apart from the mainstream. They are very different, very entertaining and very American. Audio Amateur, Glass Audio (all about Tubes - not valves!) and Speaker Builder have no parallels in Britain, and they can be absorbing. All three are strictly about understanding and building your hi-fi. They carry theory and build information, assuming that the reader will have some basic understanding of electronics and associated skills, like soldering.

One of the delights of these mags is their ad hoc nature. One minute they'll
show a few silicon chips hooked together to form an active filter, the next a complete horn loudspeaker. Their articles come from enthusiasts, rather than in-house staff, so they vary wildly in style and content.

Another underground title is Sound Practices, a delightful magazine about tubes. This is intense stuff, very specialised, valuable too, and it's got no parallel elsewhere. There isn't a big enough pool of knowledgeable constructors to draw from in Europe, so similar German and British mags are more reliant on in-house projects and writers.

America's specialist mags act as a window to an even bigger world all but invisible to us, and this is where the real entertainment starts. Beside me I've got a weighty tome called Positive Feedback, from the Oregon Triode Society, price $6 (in the U.S.). "Blame the baby boomers" says S.N. Seven in an article titled: Under The Test Bench (with uncle Eric and CJ) - Dealin' with the Trash and Sleaze. "Greediest generation in history. A vast mob of 45 year old brats. Hippies with grey hair! Peace and love and got any weed? Corporate executives throwing tantrums because their company won't give them chauffeured limos!" "You're one of them"

"I know it well!" This article is a tongue in cheek, non-PC rant straight from the heartland, and a lot of harmless fun. You won't find Europeans shooting from the hip like this, a pity in some ways. Being the publication of a society, fellow societies around the U.S. are listed in Positive Feedback. So if you fancy subscribing to the Southeastern Michigan Woofer and Tweeter Marching Society, this publication is for you.

**U.S. PRODUCTS**

It's America's range of suppliers that intrigue me. Imagine British Telecom going into the manufacture of valves. Seems ridiculous, doesn't it?

Yes, and that illustrates one important difference between Britain and the U.S. Their industry serves a home market of 220 million with as much or more disposable income than most others on the planet, and this is a commonly quoted reason for their companies being more adventurous.

**VALVES (ER, TUBES)**

AT&T, America's equivalent to B.T., but a trifle larger, has restarted manufacture of the 300B tube and the monstrous 212E. Their headquarters lie in Atlanta, Georgia, famous for being burnt down by the Yankees in the American Civil War. Then there's Svetlana, also tube manufacturers, with headquarters in Huntsville, Alabama, marketing and engineering in California and a factory in St Petersburg, Russia.

**LOUDSPEAKERS**

Some of you may have noticed that I stumbled across the ESL Clearinghouse when reviewing The Electrostatic Cookbook last month. Run by a Roger R. Sanders, a doctor and inventor, he can supply crucial parts for electrostatic loudspeakers like the necessary DuPont mylar film, audio transformers and power supply components. He runs the Clearinghouse, he told me, as a free service for enthusiasts (Tel: (505) 759-3822).

I know a lot of Hi-Fi World readers would like to build a horn speaker and bemoan the fact that we have never printed scale plans. Done properly, horn design is a highly specialised business. Special drive units are needed too. The Acoustical Society of America has published numerous research papers over the years and the magazine Speaker Builder has carried many practical articles. One of America's gurus on this subject is Dr Bruce Edgar. He's built many different types and told me that the Tractrix is about the best. Good news for Hi-Fi World readers is that, in his opinion, a complete knowledge of horn theory is unnecessary to determine flare rate and contour, as are computer programmes. It can be done manually with a calculator. Reprints of his articles are available at $5 a piece, as are plans for bass and midrange horns. So all you
PERFECTION IS A PASSION

"...PASSION took over the reference position... substantially ahead of the best active line pre-amps. PASSION's switched, discrete attenuator is clearly more accurate, more dynamic and transparent than the pot alternative. When audio products are as good as this, there is little more to say, save to endorse them with a firm recommendation... Now better still in all Vishay mode with a record score of 37".

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

For further details, brochures and prices please contact:
Audio Synthesis P.O. Box 100, Ilkley, West Yorkshire. LS29 9XW.
Tel: +44 (0) 1943 600404 Fax: +44 (0) 1943 600383

GARDNERS Transformers
Brought to you by Vintage Audio

Vintage Audio are pleased to announce that after negotiations with "Gardners Transformers" an agreement has been reached to re-manufacture to order the original range of Power, Output Transformers and Chokes

Gardners Transformers were used extensively by "MULLARD" in the design of their famous Mullard 3-3, 5-10, and 5-20 Audio Amplifiers. These Transformers can be purchased direct from us here at "Vintage Audio". In addition "Gardners" also manufacture Transformers specifically for us to our own designs, we are pleased to make these available to you as follows

<table>
<thead>
<tr>
<th>Transformer Type</th>
<th>Power Rating</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parallel Single Ended for (2x) 300B</td>
<td>35 Watts</td>
<td>£135 ea</td>
</tr>
<tr>
<td>Parallel Single Ended for (2x) VA100</td>
<td>65 Watts</td>
<td>£175 ea</td>
</tr>
<tr>
<td>Parallel Single Ended for (2x) VT4C</td>
<td>60 Watts</td>
<td>£150 ea</td>
</tr>
<tr>
<td>Push Pull U/L 43% Taps for (2x) 813</td>
<td>275 Watts</td>
<td>£258 ea</td>
</tr>
<tr>
<td>Push Pull U/L 43% Taps for (2x) KT88</td>
<td>50 Watts</td>
<td>£93 ea</td>
</tr>
<tr>
<td>Push Pull U/L 43% Taps for (2x) VA90</td>
<td>75 Watts</td>
<td>£135 ea</td>
</tr>
</tbody>
</table>

Note! We can also supply "Gardners" Chokes & Power Transformers in addition to circuit diagrams of Amplifiers and the following Tubes for the VA100, VA90, VT4C, 300B, 813. please call for Price

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Telephone: 0181-943 3530
potential horn builders now know where to get plans for a puka horn speaker - America.

Horn loudspeakers need special drivers and you may have to use Electrovoice or JBL drivers, both made in the U.S. and not widely available elsewhere.

THE PARTS WAREHOUSE
This leads me onto the next subject that again is very American - the warehouse. These are specialised parts suppliers, usually with a catalogue and a well organised mail order service. Again, loudspeaker construction gets plenty of coverage, but valve amplifier parts are catching up. The U.S. supports lots of specialist suppliers who stock real esoteric bits, including those horn drivers.

The list is long: A&S Speakers, Madisound Speaker Components, MCM Electronics, Parts Express, Zalytron, Speaker City, Speaker Works, Speakers, Mahogany Sound (transmission line specialists), Mouser, Sound Products, are just a few.

Vinyl enthusiasts are well served by Jerry Raskin's Needle Doctor, who specialise in cartridges, turntables and LP accessories. They've got Denon turntables, Stanton, Benz Micro and Bang & Olufsen cartridges, plus many other goodies not commonly seen in the U.K.

This is the sort of thing Boris Karloff might own. Kate Moss would probably be more interested in the Ear Max valve headphone amplifier, altogether a more delicate item, even if their slogan "Out of the tubes into your ears" Britons are likely to associate with London Transport. As they say, Britain and America are separated only by their common language.

The valve revival offers magic opportunities to transformer manufacturers everywhere, or so they hope. Since hope springs eternal, new ones pop up regularly and the U.S.A. has no shortage of them. Plitron offer a range of wide-bandwidth toroidals, Magnequest can provide pure silver windings, Electra-Print specialise in Single-Ended output trannies and Audio Transformers zero in on the British Williamson amplifier, these days seen by many as one of the first true hi-fi designs, a seminal classic.

Angela Instruments offer a galaxy of super-special valve amp parts and Welborne Labs offer kits and parts. A trawl through their parts list unearths extraordinary items like U.S. military surplus parts. How's about this from Angela Instruments: "Need Heavy Duty Power Iron? Here's a real Mutha for Ya!!! Massive military power transformer 115/230 dual primary and 980V at 250mA secondary (etc) Build an 80W 6146 amp! This is one SERIOUS piece of iron. $55 each!"

CAPACITOR WARS
Down at base component level, there's also a brace of capacitor manufacturers whose products we get only a glimpse of in the U.K. They're fighting it out amongst themselves using some of the most obscure theories I've ever seen. The New Wonder InfiniCap cures a myriad of problems, we are told. They face competition though, Howland make the Musicap, MIT the Multicap, then there's the WonderCap, not to mention traditional brands like Wima and Sprague. America's suffering capacitor wars it seems to me. With IRC-Shallcross claiming that popular audiophile metal-foil resistors sound sterile compared to their bobbin-wound types, resistor wars may break out any minute!

THE CLUB SCENE
Then there are the Clubs and Societies. Apart from Michigan's wonderfully named Marching Society, there are others scattered all over the States. Some declare specialisation, such as Speaker Building, or Valve listening. Friends of the Cathode Follower and the Oregon Triode Society fall into the latter.

America hosts a living 'underground' culture and it's the wellhead of audio as an absorbing and enjoyable hobby.

Speaker Builder/Glass Audio
Audio Amateur Publications
Post Office Box 576
305 Union Street
Peterborough
NH 03458-0576 USA
TP (603) 924 9464

Oregon Triode Society
4106 N.E. Gilsan
Portland
Oregon, OR 97232
TP (503) 235 9068

FROM GLASS AUDIO

Edgarhorn System 100
S.N. Seven

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UNDER THE TECH BENCH
(WITH UNCLE ERIC AND CJ)
Dealin' With The Trash 'n Sleaze!

From Glass Audio

THE UNDERGROUND SCENE
Although valve amplifiers are nearly invisible in America's overground press, where they're still mesmerised by the technology and fretting about its imaginary problems, the underground scene is vigorous. Fully built designs come in all shapes and sizes, as you might imagine, and the same sort of debate about single-ended versus push-pull you see occasionally in the U.K. is taking place in earnest.
You walk in to the Hi-Fi shop.

Across a crowded showroom, a Hi-Fi system catches your eye, then seduces your ear. Infatuated, you pay your money. Unfortunately, you also take your chances.

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"INVEST HW 2/96"
Putting the Systemdek Systym 165s through their paces, I found that they had a very different character from the soft smoochiness of the Mission 752s I used as references. These budget floorstanders are more forward and also more direct in their presentation than the 752s, but also less pricey.

The first album I listened to was Oasis' Definitely Maybe. 'Married With Children' sounded okay, with its lively acoustic set; these speakers handle strings competently. Gallagher's vocals were suitably naked and honest in expression.

However, when I skipped back to 'Digsy's Dinner' a thudding bass and general messiness spoilt my listening pleasure. The extra pace and rawness merely served to make this track aggressive. Although this is a poor recording, it was not helped by the 165s' bass, which had an ill defined thud that did not seem to help propel it along.

Although this drawback was evident when listening to Santana's 'Evil Ways' it was less obtrusive and compensated for by a smoother and more temperate midrange. The sound was dry and the sound stage perhaps a little pinched, but percussion was detailed and had a hollowness that gave it an atmospheric quality. The whirling keyboards were hard, but involving and dramatic with it. I enjoyed their clean cut edge.

I really liked the way these speakers portrayed Harry James' Sheffield Recordings. The Systemdeks conveyed a far greater sense of the trumpets actually being blown than the 752s, with a brassy forwardness that powered out at me. The trumpet is a rousing instrument and this equipment did a good job creating the right sense of vibrancy.

A Brenda Lee recording also made pleasant listening; the distinctive giggle in her voice and its richness were successfully captured. Again, it was the swinging brass that brought the songs to life. I concluded the Systemdeks are best suited to portraying upbeat, but not heavily guitar based music - and they're certainly not mellow enough for after-midnight jazz.

The Decca recording of Ashkenazy's Rachmaninov piano concertos was carried well due to the competence of the midrange and treble. The piano was detailed, its tone clear and bright, if not outstandingly natural. The strings rose without sharpness or fuzziness and the woodwind sounded clear and well integrated into the overall scheme of things. Imaging was good enough to make me think about which instrument I was listening to, creating an awareness of the orchestra behind the music.

When an expert does something well it looks easy. The Systemdeks lost the plot and got confused too often to give this impression. I'd take the Systemdek 165 loudspeakers home with me, but it would be a short term affair. I found their charms resistable.

Systemdek Systym 165 £ 300
Systemdek, 34 Kyle Road, Irvine Industrial Estate, Irvine, Scotland. KA12 8LD
01294 271251

WORLD VERDICT
Dry and clean sound, but can become hard and confused when pushed.

Measured Performance see p105-111
QUICKSILVER MODIFICATIONS

With reference to the letter on page 61 of the October '95 issue titled HI HO (QUICKSILVER) I have some information for Mr. Andrews of Wolverhampton which may assist him and any other Quicksilver owners.

The Quicksilvers were originally designed to run the Philips ECG 8417 valve, not the General Electric 8417 equivalent which is only currently available in small numbers. Although listed as an equivalent, it is nowhere near as robust as the original Philips version which is now totally obsolete. The Quicksilvers eat the GE version quicker than Arnold Schwarzenegger can gulp a hamburger.

The optimum bias setting listed for the Quicksilver's running a pair of Philips 8417s is 120mA. The maximum you can run a pair of GE 8417s is no more than 100mA - and even that's pushing it. The trouble with winding down the bias is that the H.T. voltage rises above 500volts with the PSU electrolytic capacitors only rated at 475volts. Mike Sanders at QuickSilver may have a few Philips 8417s left but I doubt it. That is why Quicksilver designed a new version using KT88s.

I owned a pair for seven years still running the original supplied valves, not bad for 120mA of fixed bias. That's how good the Philips version was. Incidentally, the 8417 was one of the last audio valves to be designed. It was not a very popular valve for audio as it consumes quite a lot of grid current in operation.

I was the original service agent to the UK for Quicksilver after they were imported into the UK by Vital Systems in the 1980s and I carry all the servicing information on them. Because of this valve problem I redesigned the Quicksilver to run a pair of GE 6550s. This not only improves the reliability but also makes big improvements to the sound quality. There were about sixty pairs sold in the UK and we must have converted about thirty. There is reference to this conversion in issue 14 (April 1995) of the DIY supplement - KIT NEWS page 5 "New Services from GT Audio".

A note about the Quicksilver amplifiers: they came in monoblock form and were completely hardwired throughout using silver solder. They were well made and internally well laid out, using good quality components and outstanding output transformers delivering sixty glorious watts of power. Valve line-up was a 12AX7 driver DC coupled to a 12BH7A phase splitter, RC connected to a pair of Philips 8417s running in fixed bias configuration. Rectification was achieved by two SARR4 (GZ 34) rectifying valves. The Quicksilvers competed very favourably against the Audio Research D70 at that time, having a very open, smooth and euphonic sound. A lot of owners used them with Quad ESL 63s with great success.

Mr Footman's amplifiers must have been "got at", as in the original version the HT does not run anywhere near the chassis. In fact, it's a pity that more manufacturers don't construct their equipment as well as the Quicksilver.

Graham Tricker
GT Audio,
Higher Denham,
Bucks.

Thank you for the information, I'm sure a lot of Quicksilver owners will be pleased to know that there is a future for their amplifiers. You can contact GT Audio on Tel: 01895 833099. DB

VALVE TUNERS - AND ALL THAT

Following on from the comments you made about the unexpectedly good results you obtained from the Pye Mozart tuner, I have some findings of my own on valve tuners in general that you may find interesting. I

FINDING THE SOURCE

System: Audiolab 8000A, Marantz CD-63, Cambridge DacMagic, IPL Acoustics A2 (kit) speakers. Cambridge Arctic interconnects, Cable Talk 3 bi-wire cables. Listening room 5.5 x 3.5m.

Problem: I want a more punchy bass as my system can sound a little harsh with rock music. Would the addition of an Audiolab 8000P bi-amped, give me what I desire?

Secondly, can you recommend a suitable cartridge for a Dual 505/1 turntable that will give me a full rounded sound with decent bass.

Lastly, what are the gold balanced outputs for on the DacMagic?

Thanking you in anticipation.

Mike Redwood,
Cheshire.

Adding an 8000P to your system wouldn't make matters any better. In fact, it could make things worse by revealing more of the harshness you are experiencing. You seem to have gone exactly along the route we advised against when reviewing the Cambridge DacMagic. Although it is certainly good value at £150, it isn't the same calibre as the rest of your system, which is neutral and...
The Month

revealing enough to make its weaknesses clearly audible.

What you have is a very detailed and analytical system, that's revealing the characteristics of your front end. You need to direct your attention here first and foremost. Try and audition a Quad CD67 in your system. I suspect that this will give it the warmth and fullness it needs.

For a full and rounded sound from LP look no further than Goldring's 1000 series. The balanced outputs on the DacMagic provide a balanced output signal which is normally used in profession applications to reduce noise. DB

You say "I want a more punchy bass as my system can sound a little harsh". I wasn't especially happy with DACMagic treble quality or mediocre bass drive, but then it is a very low price converter. I would have thought it a dubious upgrade for a CD-63 and believe you really need to spend more. However, really punchy bass would probably require a change of loudspeaker too. Mordaunt Short offer 'speakers with real kick - definitely suitable for rockers. Try for an audition. NK

On the down side, selectivity was below par by modern standards, although on strong local stations there was no problem with breakthrough. I had noticed before with a number of other vintage tuners that this strange combination of poorish selectivity and good audio was too common to be just coincidental and have since put a fair bit of time into studying the phenomena. My conclusion is that most of the vintage tuners that I had available do tend to support my thinking. Of course, all these tuners, being valve, are completely discrete in their circuit topology, a situation that doesn't exist these days. Integrated circuits being the order of the day, ceramic filters and so on.

It is interesting to note that Quad used to tailor their tuners for audio quality and I do remember some past reviews mildly criticising these same tuners for their possible unsuitability for use in countries with more congested band conditions than existed in the UK at that time.

Even the highly regarded Leak Troughline doesn't possess the same level of adjacent channel rejection as a well designed modern offering. And we all know how good the Troughline sounds.

The Troughline is getting a bit pricey these days because of its deserved popularity, but as I have said before, there are a lot of other vintage tuners out there still, sometimes going for a song.

It's a fascinating and not expensive area for experimentation that can yield some rewarding results. Given a live or studio broadcast, the results to be expected are superb, and it's an excellent way to get to all the free music on FM.

DB

TEN STEPS TO HI-FI HEAVEN

Hi-fi reviewers often write about "Hi-Fi Heaven" as if it were some vague, inaccessible state of nirvana which earthly systems can only hint at. In a moment of sudden enlightenment, I think I have identified ten concrete steps that will actually take us closer to that elusive place:

(1) Buy a good earwax solution: even the most haunting Siren song cannot get through a painstakingly built-up layer of mashed spud look-alike.

(2) Keep your boss (and that includes your wife) happy: nothing is more distracting in front of a hi-fi set than a job badly done.

(3) Read a book on music theory or performance: you'll understand why your chipsets and all sounding pretty much the same, the vintage valve tuner is a welcome departure from their dry and sterile balance. Most of the vintage designs are extremely well built, and the styling far more attractive than modern black boxes. Most are very simple designs too, using a handful of valves, and can be easily serviced and an MPX output wired in so that a decoder can be added for stereo. Once serviced and wired to a good decoder, the results are superb, and it's an excellent way to get to all of the free music on FM.

Stan Halfyard Studio 12, St. Ives, Cornwall.

I couldn't agree more. With modern synthesiser tuners all being much of a muchness, NAD 402 and Kenwood KT6050L excepted, using similar...
I'd take issue with you over is No. 5. Two live performances a year? I've been to two in the last week! There's nothing more satisfying than hearing a good live performance and then coming home to a good hi-fi system. After hearing something live, you get a far better feel for the character and presentation of a piece, and this can help you enjoy the recorded version so much more. It strengthens the link between the real and the reproduced.

Your best point is No. 10. We see a large number of letters from readers wanting advice on what to upgrade next, when they already have a very good system that they enjoy. I agree that more enjoyment can be had from a better system, but at some point you have to stop thinking about the equipment and listen to the music. An upgrade is only worthwhile if you are absolutely convinced that the change is a worthwhile one, and will increase your enjoyment. DB

A CASE FOR NAIM
In reply to the letter from Mr Thomas Fox published in your December issue. He might like to know that he can have the cases of his NAP 250 and HI-CAP updated to the current style, without having to buy new. The cost is £105.00 for the HI-CAP and £165.00 for the 250, plus V.A.T. and return carriage.

Surely this, coupled with the fact that he can add extra equipment to further improve his system, means that ours fairly constitutes an upgradeable product?

I wonder if it will be possible for him to do the same with his mid-system in six months time, when it may be replaced by a new model.

His comments regarding too many boxes and wires I would entirely agree with, but unfortunately the technology to do away with all of this whilst maintaining sound quality does not yet exist. We at Naim will be amongst the first to celebrate when it does; we are interested in music, not hi-fi.

I'd also like to mention that Mr Fox's arrangement of distribution boards to provide power is actually not a very good method at all. He would be far better off having an electrician add a few extra 13 amp sockets to those already on the wall. This will greatly improve the sound of his system as well as being a lot tidier, and may even be safer.

I hope you can pass this information on to him, and perhaps publish it in your next issue. It may be helpful to other Naim owners.

Mark Tucker
Training Manager,
Naim Audio,
Salisbury.

Thank you for your correspondence. We, and many of our readers, didn't know that it was possible to have the casework of older style Naim equipment replaced so that it matches the new. DB

A NEW TYPE OF LOUDSPEAKER
With the release of the Technics SB-M300 'speaker, as reviewed in your November issue, I wonder if we are witnessing what future cultural and design historians may come to call a 'defining moment' in our hobby.

Why? Because this particular 'speaker has two attributes which are seldom, if ever, combined in the audio world, or for that matter, anywhere else. They could be described as being both technologically sophisticated and (at £350 a pair) a relatively mass market product. Moreover, they are from a Japanese manufacturer not normally noted here for audiophile products.

This matters because no British company could have designed, built and marketed the SB-M300s at the price. If they were British, they

Technics' SB-M300s could be the first Japanese loudspeaker to worry British manufacturers.
guaranteeing relatively small sales, and helping to maintain
the exclusivity that embodies the
British hi-fi industry. Indeed, I sometimes wonder if we would enjoy our hobby
so much if everyone had access to the quality of
musical reproduction at home so many of us enjoy, as if exclusivity is somehow the point.

Evidently the Japanese have no such scruples. Recognising the demand for
such a product, they have produced a hi-tech speaker
that fits in a small room and sounds good. The fact that, as far as I know, no British
company has been able to perceive that same need, speaks volumes. Technics
deserve to do well with this "speaker."

I can hardly see the fact that the prospective purchaser is unlikely to be
able to get a comparison demonstration against System
931s or a pair of Harbeth
HL-3s as being likely to stop
them. As Noel says, perhaps
931s or a pair of Harbeth
HL-P3s as being likely to stop
them. As Noel says, perhaps

Chris Moorhouse
Sheffield.

EQ FOR 78s
About: Query of Mr. Ralf
Lauer, Idstein, Germany in
November issue of Hi-Fi
World.

Marantz has a PH22
model (can still be bought) that has RIAA, Europe SP1,
Europe SP2 and OLD SP
equalisation.

I use it for a year now with a Michell
Gyrodec, and it sounds smooth, crystal
clear and is a perfect match for all the cartridges I have.

Wim Dierickx
Belgium.

LONG LIVE CASSETTE
I hope that your article on
the decline of cassette tape
will not hasten its demise.

During the twenty years
that I have relied entirely
upon recordings from Radio
3, mostly of live
performances since I
abandoned LP, I have
attended numerous
demonstrations of LP and CD
by dealers and manufacturers,
e.g. Quad, Mission, Linn etc.
and have never heard a sound
quality which would induce
me to abandon analogue tape.
Although this may have had
something to do with the
equipment, I have always
walked away disappointed,
and wondering why CD
devoeess obtain enjoyment
from a sound that I have
perceived as unnatural. It
reminded me of one writer
who once wrote that "There
is realism, and there is hi-fi."
I do not suggest that everyone
should give up their CD and
follow my example; but I do
dispute the commonly
expounded allegation that
cassette tape is suitable only
for in-car use and is incapable
of further development.

I have long been
convinced that analogue tape
has been deliberately under-
used by the industry in order
to divert public attention
to newer and, for the industry,
more lucrative replacements,
regardless of sound quality. I
regard commercially pre-
recorded tapes as pathetic
and far below the potential of
the medium.

I am also suspicious of
journalists who follow fashion
denigrating cassette tape
when others, who are more
honest or experienced, admit
that recordings made on
originals. Surely that
machines e.g. Nakamichi, are
indistinguishable from the
(CD) originals. Surely that
confirms that analogue tape is
capable of much higher
quality than is commonly
heard from even the best
commercial (pre)recordings. I believe my recordings are
more natural and realistic,
musical, dramatic, spacious,
accurate and generally more
enjoyable than CD, while
conceding nothing in terms of
dynamics and clarity.

As with commercial CD
recordings, the result
depends much upon the
acoustics of the venue and
(although the BBC would
probably deny it) the
engineer. If this is not familiar
to you since I understand that
rock is your musical
preference, I suggest you use
your ZX9 to record a live
musical performance, with
maximum input and minus
Dolby. Alternatively, I would
be happy to send you
examples of my recordings.
Who knows? You may be
sufficiently impressed to be
inclined to encourage the
industry to reconsider future
developments. If, as I believe,
recordings of classical music
via a good radio are more
enjoyable than CD, one
wonders what the limits
could be by direct recordings
through highly sophisticated
commercial equipment.

G. A. Jolly
Hockley,
Essex.

We have always
maintained that cassette is a
viable hi-fi medium, but
it is unamenable to mass
production. It was
designed as a dictation
medium, not for music. The
problem of azimuth error
in particular has proved
intractable. NK

VINTAGE RADIO
REVISITED
I was very interested to read
your series of articles on
vintage tuners; so much so
that I bought the very same
Pye Mozart tuner from
Classique Sounds in Leicester
that Dominic Baker used in
one of his articles.

I then proceeded to
construct a stereo decoder -
not the one from Studio 12
but a similar "home-brewed"
design based around
the LM4500A chip. After
removing the de-emphasis
capacitor, the tiny 40mV of
multiplex pilot tone was too
small to activate my decoder.
A few output resistors were
changed (it seems to have
been popular for apparatus
to produce low output levels
in those days) to give a healthy
250mV output.

My first impressions were
rather disappointing. The
treble and mid range were
sweet enough, but stereo
imaging was ill defined, and
the bass was distorted. I then
proceeded to re-align the IF
stages of the tuner to
10.7MHz. The discriminator
circuit was off, and this is critical
to fidelity. The result was a
complete transformation of
continued on page 47 ....
Still in the dark when it comes to hi-fi and video?

It’s time to get Switched On.

Just a few ‘sound’ reasons to visit Switched On 96, The Consumer Electronics Show of 1996...

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The latest Project 6.1S record player is now available, with the superb Sumiko arm and a choice of cartridges; stunning value at under £1000. The stylish new Copland CDA288 Hi-definition CD player, joins the new drawer loading Naim CD2 and the Micromega Drive 2/DAC as the best sounding units under £2000. Arcam’s latest Alpha 6 CD player tops the new improved Alpha range. The new and affordable integrated amplifier from Densen sets high standards for value and their bigger models offer a powerful solid-state alternative to the delightful range of valve and valve hybrid designs from Copland. These include the latest version of the integrated CSA14 and ultra minimalist CTA501. Also look out for the very latest CSA303/CTA505 pre-power combo, an incredible performer for about £3000. Not to be outdone, Naim Audio have many new products to please their fans; as well as the CD2 mentioned above, the stunningly successful NAIT3 and NAC92 models are now available with a remote control option. The brand new SNAXO crossover is a very effective upgrade for all active systems and the upgraded bass drivers are a must for all SBL users. New floor-standing speakers include the Heybrook Heylo, great value at under £400, and the Neat Mystique, a superb performer for under £600. At just over £1000 the latest Castle Howard, Epos ES22 and the revised Heybrook Sextet offer real choice of larger models. For top class compact speakers the Sonus Faber range remains beyond compare and the all new SL3 from electrostatic specialists Martin-Logan is possibly their best ever design, combining the speed and integration of the smaller Aerius with the scale and power of the bigger hybrids.
this tuner, with excellent stereo imaging and very clean bass. I can now easily hear the difference in sound quality between the transmitters at Wrotham and the IOW on Radio 3. Indeed, this tuner does not disgrace itself next to my Audiolab 8000T, and in some ways the sound is more natural.

WHERE NEXT?


Over the last year I've upgraded to the above system, keeping the Rega due to my relatively small vinyl collection. I now have the money to upgrade the pre-amp to something along the lines of the Audiolab 8000Q, but I have two main concerns.

My first worry is that I'm still using my original cables. Although they are of reasonable quality (£30 per pair interconnects, Linn K20 speaker cable, and home-made digital/clock cables) I wonder whether I'm doing full justice to my new system. Would an upgrade in this area be a better first step? If so, which cables would you recommend? I replace first to give me the biggest initial improvement? Am I correct in assuming the same quality cable should be used between the amps as between the source and pre-amp?

Secondly, the fact that many good pre-amps, including the 8000Q, have no phono stage means I want to keep the 8000A for this purpose. I also occasionally 'dabble' in home cinema (nothing more than a Marantz SP50, using the 8000As power section, which is disconnected internally, to drive a centre channel). Since my 8000P has only one set of inputs, if I did buy a new pre-amp, how should I best connect the 8000A into the system to make use of its phono stage? Given that my current requirements are 2 line-level inputs (CD/tuner), 1 MM phono input and 3 tape loops (Cassette/video/pro-logic) perhaps you have a better suggestion?

Tim Brand
Old Harlow, Essex.

First of all, it is definitely worth auditioning a few good interconnects and loudspeaker cables with a system of this calibre. The problem is, you may well be better off waiting until you have decided which pre-amp to go for, and then fine tune the system with the cables. To start with, I'd try Orthofon's SPK300, which is a very high purity copper cable annealed to prevent it oxidising over time. This has a very clear and detailed sound, and should help make the most out of the superb midrange of the Ventricles.

Once this is in place I'd start auditioning pre-amps alongside interconnects. Needing three tape loops really limits your choices, Audiolab being one of the few who provide this. If you can get away with two tape loops, Linn's Kairn is worth an audition, having a clean and detailed sound and the bonus of a super phono stage.

It looks as though the 8000Q will fit into your system best though, offering all of the facilities you need. If you do opt for this, connect it between the 8000A and the 8000P. The record deck can be plugged into the phono stage of the 8000A, and an output taken to the 8000Q from the tape output, which is a fixed line level signal.

Other options worth an audition, but not as neat as the above: 1. Swap the 8000A for another 8000P which you could then use to bi-amp your Ventricles and as an amplifier for your centre channel 'speaker. 2. Use these with a Linn Kairn or 8000Q and an external phono stage; the Michell Iso is ideal here. 3. Get rid of the 8000A, P, centre channel 'speaker and SP50 and buy a McIntosh MA6800 integrated - try one, you'll see what I mean. DB

EXPANDING INPUTS

My system comprises a Tandberg TR2075 receiver, a Technics SL-PS620A CD player, KEF Reference 102/2 speakers, a Technics RS-BX646 cassette deck and an Akai NICAM video.

I have recently acquired the Tandberg from my father and I am quite impressed with its sound despite its age. I was previously using an Arcam Alpha 3 amplifier which didn't have the power or presence of the Tandberg. The problem is that I don't have enough inputs as there are only two tape inputs and two phono inputs. Also, my tape deck does not seem to match the amplifier when connected via the DIN inputs. Do you think that it would be possible to have the Tandberg modified so that I could use one of the phono inputs which are not being used at all. If not do you have any other suggestions?

I was also wondering about attaching a separate pre-amplifier to the Tandberg as it does have both pre-out and power-in sockets. This would presumably solve the above problem. However, I tried this using the pre-amplifier section of an Arcam Delta 290 but this seemed to overload the Tandberg power-amplifier.

To conclude, I would be interested to hear your comments on how the Tandberg would compare to modern amplifiers and how much I would need to spend to better it.

Ashley Canning
Wrecclesham, Surrey.

I am not familiar with the Tandberg TR2075 amplifier you have, so am not in a position to comment on its sound. However if you do find it better than the Delta 290 you were previously using, I'd hang on to it. The problem you have with inputs is easily solved; QED make expansion switch boxes for exactly this. They plug into one of your existing amplifier inputs, and allow you to switch between a number of sources plugged into the unit. DB
"One thing the Lalis did that few other speakers do was make listening to music fun."

Chris Beeching.
Hi-Fi News/ Oct'95

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Using a brace of custom built 6.5inch doped paper cone bass/mid drivers, each reflex loaded in a large, floorstanding cabinet, it was clear from the start that the Dali 450 loudspeakers meant business. Low bass, subsonic bass, mid bass, deep bass - they have it all in abundance. And this was musical bass, and thoroughly engaging too; 64 foot Church organ stuff.

So on with the toccatas, fugues and voluntaries from Bach and Widor and Telemann. Bach's toccata and fugue in D minor held promise after the first note, when the reverb was noticeably long, with notes remaining intact and linear and really churchy. Separation was excellent throughout the triplets, which often end up confused and marred. Such was not the case with the Dali 450. Superb control and an obvious predisposition to organ and choral music are very much their greatest strengths.

Trumpets in the voluntary by Telemann really blasted through impressively. Again not a 'treble blast' or sudden midrange peak - but a real, brassy, rich and juicy real trumpet sound. Power handling at all times with this demanding material seemed virtually limitless. There was never any break up in the midrange, or elsewhere for that matter, and even in the lowest frequency extremes the cabinets delivered favourably - they seemed to be preloaded with air.

Elgar's 'Pomp and Circumstance' was as triumphant as it sounds, a performance deserving of all the ceremony that its name promises. The sound stage was deep, and imaging holographic, with all the sections in the right place. Horns sounded brassy, raspy and low in the right spots. Strings were smooth, and when plucked, jumped out over the wealth of orchestration.

"Horns sounded brassy, raspy and low in the right spots. Strings were smooth, and when plucked, jumped out over the wealth of orchestration."

For the progressive Jazzist, the bottom end may be a bit 'acousticy', but this is ideal for traditionalists who long for the sustain and warmth of an upright acoustic bass. The 450s are not rockers - they're too sophisticated, and thoroughly unpretentious too. Whilst these 'speakers have good power handling and a thunderous bottom end, digitally recorded guitars are stripped of their gilded sound quality and actually sounded bad! (Joe Satriani, Yngwie Malmstein, etc.)

On the other hand, the classic unretouched sounds of Santana and Clapton were delicious, and made for the Dalis. Dance and Techno fans will have to dream on though - these Dalis just don't dance. The 450s favour music as opposed to effects and overblown bass lines.

The Dali 450s are a great accomplishment: uncompromising and distinguished Danish styling, undeniable musicality and an engaging and distinctive personality. What more could the classical listener want from an elegant floorstander? A sweet pastry and a cup of coffee would do me, as I settle down to the openings of Faure's Requiem •

Dali 450 £699.95
Audioclub
401-405 Nether Street,
London, N3 1QG
Tel 0181 343 3240

WORLD VERDICT
A powerful and rich sound from these competitively priced floorstanders makes them worth recommendation.

Measured Performance see p105-111
**DEFLEX ACOUSTIC PANEL**

You need at least 2 Deflex panels for a pair of small bookshelf speakers, 4 panels for a pair of Tannoy 6's, and at least 6 panels for larger cabinets. Deflex panels are re-usable and transferable.

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The Mat contains 3 layers of Deflex material, all of differing hardness. Top layer 25% hardness (anti-static); Sandwich layer 15% hardness (shock absorbing); Base layer 15% hardness (isometric).

- **Turntable Mat** 12" diameter: £55.00 each

**D. MAGNAPAD GOLD**

Magnapads have been specifically designed to absorb unwanted vibrations directed at the speaker chassis, cots & magnets and to prevent further sound reflections of the flat surfaces.

- **Magnapad Gold 3** (75mm dia.): £7.95 pair
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**E. DEFLEX WRAP**

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- Wrap 28cm x 21cm x 15mm thick: £14.95 sheet

**F. DEFLEX SHEET**

Sheet is for the enthusiast who wants to damp out resonances wherever they are perceived to be influencing the natural sound of the system. Ribbed sheet can be used for lining ports, etc.

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- **Plain Sheet** 3mm thick (20cm x 21cm): £9.95 sheet
- **Plain Sheet** 4mm thick (20cm x 21cm): £9.95 sheet
- **Plain Sheet** 6mm thick (20cm x 21cm): £12.95 sheet
- **Plain Sheet** 5mm thick (47cm x 22cm): £27.00 sheet
- **Ribbed Sheet** 3mm thick (20cm x 21cm): £9.95 sheet
- **Ribbed Sheet** 6mm thick (20cm x 21cm): £11.95 sheet

**G. ISOLATION BLOCKS**

Isolation blocks are offered in a range of shapes and sizes, designed to accommodate all types of equipment of varying weights and sizes.

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- **Isolation Block** 150 (150mm square x 20mm): £16.50 each

**H. DE-COUPLING GASKETS**

Decoupling gaskets not only help isolate unwanted vibrations between cabinets and drive units, but because of the material composition provide a perfect air-tight seal without the need to use a mastick sealant. The range is continually expanding. Phone for details.

- **Gasket** - Kef B110S: £3.00 each
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- **Gasket** - Scan-Speak D2009: £2.50 each

**I. CORNER BLOCKS**

Corner blocks are designed to be fitted in rectangular areas of enclosures to prevent resonant sound reflections - "carts eye phenomenon.

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**DEFLEX ACOUSTIC PANEL**

"...a marked improvement was obvious from the first few bars of REM's Automatic for the people album..."

"Hi-Fi News & Record Review - March 1994"

"...Deflex panels seemed to give greater tightness and control, improved internal clarity, and pitch definition - all without deadening the sound in any way..."

Hi-Fi News - November 1994

"Deflex panels are no gimmick. They work..."

Audio Video - November 1994

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**For the enthusiast & - D.I.Y. - The simplest and most cost effective way to upgrade your existing system**
When I breezed in through the yawning entrances of Britain’s Virgin and HMV music mega-stores on London’s Oxford Street recently I was confronted by long wall displays of all the latest chart releases, nearly every one accompanied by a large, colourful LP. What a heart warming sight! The LP has been reinstated and is being given equal billing alongside CD and cassette.

How the situation has suddenly changed. As the sales graphs for vinyl hit rock bottom, suggesting only residual demand remains, the stores have suddenly changed their minds. The irony of this won’t be lost on Hi-Fi World readers, who have complained long and loud - and rightfully so - about being robbed of freedom of choice and denied the right to continue using something they have invested in.

In every way, except its raison d’être, CD has been a winner. The LP is a pig of a medium to produce, transport, stock and sell. Yet, practical problems aside, it remains a great medium to listen to. It lacks the hard glare of CD, it has better imaging and dynamics and unbelievably natural atmosphere and ambience. Just as it looked as if all of this was going to be thrown to the wind, mainly because the silver disc is so convenient, the LP has started to claw its way back into the daylight.

Are we seeing a slight return, a short term trend, or a full scale re-awakening? Is it just a fashion or not? Not so long ago, I would have put any return down to simple fashion or a fad. Now, I’m not so sure. Too many people tell me that LP is better than CD and, perhaps most surprising of all, a lot of them grew up on CD then got the shock of their life upon hearing the archaic black disc played on a half-decent record deck. This discounts any slight return being attributable down to fogey power (me included!).

People in marketing now agree that consumers have become very cynical and difficult to reach with new products like DCC and MD. It is a dilemma of today, moaned about in organs such as Campaign, a magazine for ad. men (and women). How do we reach our target punter? Where has he gone? Why does he reject our message?

That ‘the market’, which means you and I, rejects new technologies is becoming a big problem.

The big boys always claim there is ‘a need’ for what they produce, but is this true? I believe they may be fooling themselves. Look at the cassette: Sales went into decline, showing, we are told, that users were falling out of love with the medium. This always struck me as a very odd conclusion, but it’s common enough in marketing. Directly this view took flight, every major electronics manufacturer started peddling to produce cassette’s replacement. That’s because the cassette is the world’s second most common household electrical item, after the light bulb; potential sales for its successor look fantastic. But try as they may, they have failed to find the market those falling sales graphs predicted must exist. I suspect there are many reasons for this, and the resilience of the LP is proof of one of them.

People may have reservations about the cassette, but that does not necessarily mean they wish to abandon it completely. Perhaps Philips should have upgraded the cassette as it stands by revising the old standards, launching a totally compatible updated system, or they should have made DCC a fully compatible follow on.

Large scale manufacturers like Matsushita (Technics, Panasonic), Philips and Sony, innovate to generate sales. Seems reasonable enough until you inspect the idea. It presupposes there will always be something new to be invented and, by its very nature, it must downgrade the value of yesterday’s and today’s products, irrespective of their value to consumers.

Then users could have been slowly traded over to the updated system, happy in the knowledge that they need not rip out the car cassette nor throw away the Walkman simply because it suited Philips.

Then there is the small matter of credibility. New media must offer an improvement in basic function, which means better sound quality, not just smaller size. This is where the return of the LP may herald new difficulties for future technologies and for their innovators. If people now start to discover that LP is, in terms of quality, a viable medium at least comparable to CD it will only serve to further stiffen resistance to new products. And what will people think when super-CD comes along? After all the hype surrounding CD’s apparent perfection, the realisation that it really was little better than the archaic LP in basic quality is not going to do any good at all.

I don’t believe the LP is about to make a massive comeback but I do believe its re-appearance is symptomatic of technology fatigue in hi-fi. We need and must continue to improve what we have.

The days when everyone would throw away their entire music collection because Sony or Philips say so are over. The medium must serve the message, not the other way around. Big business will have to learn this.
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AUDIOLAB 8000T
Best Tuner
Why not use the cash you were going to spend on a less expensive tuner as the down payment for the best?

ARCAM
ALPHA 5 PLUS CD
Best CD Player under £500
The best selling UK made CD Player

World Radio History
This month, I’d like to try and clear up one of the biggest misunderstandings people have about loudspeakers, certainly the area of their design we receive most correspondence on, the crossover-driver interface. First some basics.

**DRIVE UNITS**

**BASS** - Bass drivers are large so that they can move the large volume of air required to reproduce low frequencies accurately. A typical bass driver will handle bass below 500Hz and is in the region of 8-12" in diameter.

**MIDRANGE** - Midrange drivers fill in the gap between bass and treble, being small enough to reproduce upper frequencies smoothly, but large enough to reach down to the bass driver. They are normally 3-5" cones or 3" domes.

**BASS/MIDRANGE** - This kind of driver is used in a twin-driver system, handling both low bass and midrange frequencies. These are favoured for more compact loudspeakers and are normally 4-8" in diameter.

**TWEETER** - Nearly always a dome for good dispersion, around 1" in size. A tweeter handles treble, normally from around 3kHz upwards.

Most commercial systems either use a woofer, midrange and tweeter in a 3-way system, or a bass/mid and tweeter in a 2-way system to cover the whole audio band smoothly.

**THE CROSSOVER**

The crossover is a simple passive circuit comprising resistors, capacitors and inductors. It divides the incoming audio signal to feed each individual driver. So in a 3-way system, the crossover will take the full-range audio signal and divide it up into bass for the bass driver, midrange for the midrange driver and treble for the tweeter.

**THE MISCONCEPTION**

All this seems pretty simple so far, but there is one misconception that seems common to anyone new to loudspeakers. A logical conclusion to draw from the above is that to make a loudspeaker all you need do is find a crossover that directs the right frequencies to the right driver and wire it up.

We get numerous enquiries about ours and other manufacturers’ loudspeakers from readers who want to upgrade the drivers, e.g. replace the existing tweeter with a higher quality unit. It seems sensible, there’s a crossover to make sure that only treble frequencies get to the tweeter so why shouldn’t you be able to simply try different tweeters? Sadly, it’s not that simple and here’s why.

**SENSITIVITY MATCHING**

The first problem you will come across is that of differing sensitivities. Some drivers are more efficient than others, going louder for a given input. If you replace, say, a tweeter with one that is less or more sensitive, the loudspeaker will sound duller or brighter respectively. Before you rush out looking for a more sensitive tweeter so that you can brighten up your dull old speakers, read on.

**A DRIVE UNIT IS AN INTEGRAL PART OF THE CROSSOVER**

A crossover uses resistors, capacitors and inductors to perform its filtering. A drive unit itself has resistance, capacitance and inductance that will interact with the crossover components. The components in the crossover and the electrical characteristics of the drive unit have to be tuned to each other to get the frequency response you want. Changing the driver for one with different characteristics - and every driver is different - will mis-tune the crossover and unbalance the response.

At best you will either cause a peak or trough in the response as it overlaps or pulls away from the other drivers it is supposed to be integrating with. At worst, the change of driver will re-tune the filter severely, affecting both the frequency response and impedance curve, which may have implications for your amplifier and hearing!

**A DRIVE UNIT IS NOT AN 8OHM RESISTOR**

This view is bred from the over simplistic view of crossovers taken by many authors on the subject. To simplify the maths a drive unit is substituted by a single 8Ω resistor having no reactive component.

This does not work in practice. It’s best seen as a simple theoretical tool for teaching basic principles. In fact, a drive unit has a varying impedance, normally between 4-50Ω across its frequency range. If you simply insert 8Ω into your equations, you are likely to be a long way off. Also, as the impedance changes it will affect the crossover alignment. You may design a crossover to work at 3kHz, but as the impedance will either be rising or falling at this point, the intended crossover point will shift either upwards or downwards with it. These equations give you a rough starting point, that is all. They always need a lot of tuning with the aid of test equipment before they work properly.

I hope the above is enough to give those new to the subject of loudspeakers an insight into the complexities of their design. It is not a simple case of wiring a crossover to a drive unit; the two form a critically tuned electronic circuit that needs to be carefully optimised. And replacing the driver in an optimised loudspeaker is like fitting a tractor wheel to your Ford Escort - it will cause a strong imbalance.
Noel Keywood and Haider Bahrani take Philips' new budget CD player, the CD721, for a quick spin.

BUDGET SPINNER
"SIMPLY THE BEST?"
- Hi-Fi World. October 1995

You be the judge...

Certainly, amplifiers that sound as good or are built as well as these are few and far between. But exactly what is it that sets Unison Research apart from the rest? To begin with, a fanatical attention to quality in both design and construction. That, plus a generous helping of Italian artistry and real craftsmanship.

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Our review CD72I remained determinedly inert when I pressed the draw Open button. "Oh dear", I thought. "It must have had a bumpy journey from Singapore". For that's where Philips now have the headquarters of their Audio Division, and it is where the CD72I is manufactured. A label underneath does make the point that it was "Designed and developed in Europe" though, for those to whom such things matter. It's got a foot in both worlds.

And it had also put its foot in it, as far as I was concerned! Armed with a Torx screwdriver I whipped its flimsy metal cover off, looking for a discarded drive belt from the motor drawer. This sort of thing is not uncommon. I saw the belt but ended up removing the entire fascia trying to get at it - and still I couldn't! Eventually, I found that a cover above the belt could simply be flipped off and this was how the belt is replaced. Although covered in grease, it worked well enough when put back and we were in business.

It's always interesting to see how Philips and others build modern CD players. This one had amazingly little unit. The blue display flashes short error messages and there's even a headphone output with volume control.

Having tested this player and noted its peculiarly 'engineered' response I just had to find out what Philips were aiming for in sound quality.

To check out treble quality, take one record with ringing harmonics to 20kHz, namely Steve Earle's Guitar Town. The strings came over well enough, but after a while it became apparent that the CD72I is grey and harsh. Orchestral strings fared poorly too, as expected.

Down at the other end of the spectrum, The Beatmasters' ‘Hey D.J. I Can’t Dance To That Music You’re Playing’ had inflated bass with great bounce, but it was hardly accurate.

I guess the CD72I is better off for these little subjective tweaks, but they don't turn it into a giant killer by any means. NK

Haider says -

I started the journey through my CD collection with a couple of tracks from Polly Jean Harvey's most recent offering, To Bring You My Love. My first stop, 'Teclo', was well controlled in the bass, if somewhat over pronounced. P. J.'s voice was a little too raw perhaps, as if she'd had too many cigarettes before coming on stage. Flipping to the last track on the album, 'The Dancer' there were lots of guitars, a hanging melody - and no shortage of action at spectrum extremes. But there was more crisp here than smooth chocolate."

There were lots of guitars and a hanging melody - and no shortage of action at spectrum extremes. But there was more crisp here than smooth chocolate."

inside, considering how complex CD really is. There's no digital output, for future upgrading, which is a pity. Philips do fit remote control of volume though, which tests showed worked in the digital domain. In spite of this, it did not produce much extra distortion, levels reaching 0.1% maximum.

Despite its very low price, the CD72I has plenty of facilities, including a 30 track memory and a direct access keypad on the small remote control

at spectrum extremes. But there was more crisp here than smooth chocolate.

Dynamically, there was good pace - a fair whack of it in fact. The sound stage was well-filled too. All too often recently I've come across systems that confine the whole sound stage to a boxed area between the speakers. The Philips CD72I does better than this - a lot better, so that's a point in its favour.

Piano can be revealing of a recording. When this instrument distorts you don't need a trained ear to know that there's something wrong. Tori Amos' ode to battered women 'Silent All These Years' has a piano that's as dynamic as it is subtle, and as heart-felt as it is disturbing. The thuds of the pedals were solid and clear, but perhaps too eager to decay swiftly. The actual piano, however, was quite a different story. It rang and echoed as though off the walls of a cold cave. This was a tough test to pass, but the result was not encouraging.

Jimi Hendrix's 'Are You Experienced' is something I've lived with for most of my teenage and all my adult years. Every guitar lick, bass riff and drum break is ingrained deeply into my memory. As before, the bass was well controlled, but over the top. The Toms on Mitch Mitchell's drums thudded rather than bonged, and the snare cut so harshly through the image that it rode on Jimi's strings. Hendrix must have forgotten his Marshalls and borrowed a 10" practice amp. to lay down 'Manic Depression'.

The punchy TR-909 drum machine behind 'Who's In The House?' from the Beatmasters and The Artist Formerly Known As Prince's funky 'Get Off' are more the kind of thing that would make you appreciate this CD player. It's a fun party animal, but it's not for relaxing with favourite classics.

Philips CD72I £129.99
Philips CD711 (without remote) £109.99

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In the past, hi-fi shops have had a pretty good reputation for customer service. After all, with how many other products do you get the chance to thoroughly test the goods actually in the shop and then, quite often, the opportunity to bring them back within two weeks or so if they're not right? It’s not unusual for a hi-fi demonstration to last far longer than a new car test drive, even though the hi-fi item may cost a tenth of the price of a car.

Don’t for one minute think, though, that the following is simply an endorsement and pat on the back for all those hi-fi retailers out there. Last month I discussed the efforts of the industry to increase awareness of hi-fi separates. This month I’m going to focus on retailing, the problems it faces, and some solutions already in action.

We’ve just been through one of the busiest times for nearly all retailers, and hi-fi is no exception. If a hi-fi retailer wasn’t successful during the Christmas season then the following year will usually prove somewhat grim. Also, bear in mind that during the summer months most people are thinking of holidays and mountain bikes rather than staying indoors to listen to hi-fi. This makes the summer months especially lean.

Couple this with the fact that hi-fi sales are remaining fairly static and there’s increased competition from the larger electrical stores and it’s no wonder that some retailers are giving up the fight. Along with a few of the smaller hobby shops, we’ve seen the demise of the fairly large Cleartone chain this year. For the hi-fi retailer this means that although they may not be competing with the larger electrical stores and it’s no wonder that some retailers are giving up the fight. Along with a few of the smaller hobby shops, we’ve seen the demise of the fairly large Cleartone chain this year.

One area which needs addressing is customer service and in particular consideration of customers’ families. A hi-fi purchase needs careful thought, yet many will come into the shop with the family during a day’s shopping. If the entire family has an interest in hi-fi (sometimes the case) then there’s no problem, but more often than not there are tired children and bored husbands/wives in tow. It’s hard to concentrate under these circumstances and what’s more, it takes the fun out of the occasion.

The answer is simple and has already been put into practise by many car garages as well as a few hi-fi shops. They provide video games and toys for children, and coffee and general interest magazines for spouses. It’s surprising how many shops I’ve been into where there isn’t even the most basic of fold-away seats to sit down on. With just a little thought the atmosphere of a shop can become far more convivial and inviting, and it need not necessarily cost a fortune.

The best news is that the customer benefits from increased competition. Perhaps not in terms of retail price, but definitely in terms of customer service. And it’s here that the future of hi-fi retailing lies. Retailers will ignore the welfare of their customers at their peril.
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Despite my intention to be the last man off the vinyl train, to stick with black plastic until the last scratched Abba record changes hands for 25p at an Eastbourne Oxfam, I'm in no doubt that CD has turned out to be a good thing for the British hi-fi industry. It's pushed people back into dealers, upset the old hi-fi world order, and inspired all manner of unlikely manufacturers into the digital domain, from Quad to Pink Triangle.

That's not how it looked in the early days. Philips' little 'evasion of the actualite' became a stick with which analogue die-hards tried to beat the digital audio dead. Catchy one-liners can go off like fireworks in a child's hand, shooting up only to boomerang back and explode in your face. Just ask Honest John Major, for whom 'back to basics' took on a whole new inflection. Philips

"people who feel strongly about The Great Debate invariably hold passionate - nay, extreme - views; it's always analogue or digital and never the twain shall meet"

must still suffer the occasional corporate shiver as they remember their famous factual faux pas, something about Compact Disc being - well, you know how it goes.

This was seized upon by the vinyl brigade, but try as they did to send CD to an early grave, the digital audio disc clung on until it was Philips who were laughing. To make matters worse for the turntable brigade, the tide turned firmly against them, almost in retribution. The prospect of vinyl disappearing from the High Street became a reality. Their treasured format, they thought, was being replaced by something that sounded like a dog, played on machines bearing an uncanny physical resemblance to its dinner. That's not quite how it's turned out yet though.

Even today, the CD issue attracts more column inches than anyone would've thought possible, as a casual glance at the World letters pages will show. The problem is that people who feel strongly enough about The

a lot less appetising than that black Sinclair calculator thing from Boots that plugged into your telly. What could be better then, than a new hi-fi format that suddenly made everyone sit up and listen once more?

CD certainly managed this, putting the all-important issue of sound quality firmly back on the public agenda. True, it was ironic that something that sounded (in its earliest incarnation) like a dentist's drill after a bad hangover was putting hi-fi back at the top of the shopping list, but there you go.

The gauntlet was well and truly down for the industry to grab these new buyers and show them the error of their ways. And of course, the thrusting corporate visionaries of Britain's cottage hi-fi industry positively seized the opportunity, didn't they?

Well, all right, they didn't. British Hi-Fi plc could have played it better. By the early-to-mid Eighties, the upstart manufacturers of the previous decade had begun to have it all their own way. They weren't exactly ecstatic when a user-friendly, easy to install challenger to the LP arrived from 'the continent', like a Siberian wind.

For a while, most British companies spurned CD, preferring to sell over-sensitive kit that needed a philosophy lesson to get the best from it - interesting to you and I perhaps, but not to most people wanting to play the latest U2 epic. Instead of giving people what they wanted, they chose to retrench and snipe and sneer from the sidelines. Their anti-digital talk was as much about keeping their interests well and truly vested as it was about sound quality - an unfortunate, and dare I say, characteristically British response.

Happily though, by the end of the decade attitudes had changed and Britain was at the forefront of digital audio. Suddenly the bickering stopped. Nowadays, one of CD's once most ardent critics, Ivor Tiefenbrun, is uncharacteristically mute on the evils of the medium, now Linn produce one of the best CD players around and, of course, make money for doing so. Funny that.

Interestingly, for a nation with such a fine turntable making pedigree, arguably unsurpassed the world over, we're now proving ourselves good at the digital art. One or two sound quality reservations aside, I'm sure CD's been a blessing in disguise. This is one position that I'm certain won't prove compromising to British manufacturers. Nor will it stop me searching for plastic classics in Eastbourne.
Hi-Fi Consultants

A) Speakers with forked tongues
I have always felt that Linn did a dis-service to the hi-fi speaker manufacturers, all those years ago when they started the 'muck in, muck out' philosophy. Although there was much truth in what they said, it shifted the emphasis away from speakers and in the end, speakers are still generally the weakest link in most systems, and the biggest improvements can usually be made by a speaker change. That is why I still find speakers the most fascinating item in the hi-fi chain, and thoroughly enjoy extracting the most from them with the amplification at hand. That is one reason why it is particularly impressive that an amplifier manufacturer, Electrocompaniet, has succeeded in producing such a well balanced small speaker, at their first attempt.

B) The 'Qube'
The Qube was launched in the UK at the recent Ramada Show, together with the new 50wpc EC1-2 integrated amplifier. At £1265 and £990 respectively, both items are reasonably priced and represent excellent value, though the Qube is good enough to warrant the E/C pre-powers! Reaction at the Ramada to the Qube was generally very favourable with constant enquiries such as 'where is the sub-woofer?'. Nevertheless, although the bass is excellent for such small drivers, it does lack extreme bass, but this can be nicely filled in with a sub-woofer. Having now used the speaker for some weeks now, I can report that it is also an excellent speaker for classical music, having very good integration and a nice airy, open sound. We haven't had time yet to try all our integrated amplifiers, but certainly the above EC1-2 and the AV1 integrated, drive the Qube very well. It's always interesting to see how musicians immediately react favourably to the ATC speakers, particularly the SCM 50A's, and in a similar way a musician who heard the Qube's this week, was immediately impressed by them, after hearing other larger and more expensive speakers.

C) The Alon Petite
Another small speaker, The Alon Petite, has also been here and has again much to commend it, but I am waiting for my own units to spend more time with them. A recent review in a Hong Kong audio magazine raved about them.

D) Stands
None of these small speakers reproduce their best without a good stand, and the Foundation Designer (also recommended in the Hong Kong review) was found to produce superb results.

E) Naim
P/E bargains, both sets about 18 mths old 72/Hicap /180 @ £1300 and 82 pre + 2 Hicaps @ £2K.
Rogers' new LS Is cost just £150, so they are a direct challenge to my beloved Mission 73ILEs. It's not that I didn't want to consider the LS Is in their own right, but it was necessary to directly compare them with the 73ILEs, because that's how many people are likely to judge them.

The two speakers are similar in design. They both use a small 4" doped paper driver, reflex loaded by a compact enclosure, working in conjunction with a polymer dome tweeter to handle high frequencies. The biggest difference between them is in the cabinet. Whereas Mission favour high tech. plastic moulded front and rear baffles, fitted with gold plated bi-wire terminals, the LS Is have a more traditional build. They are finished in black vinyl and feature a single pair of nickel plated binding posts.

The forward firing reflex port of the LS Is makes them a fine candidate for wall or bookshelf mounting. However, for the most neutral balance, I used them against a wall on a pair of rigid stands, with grilles in place, in conjunction with the smooth sounding Aura VA-80 amplifier.

The LS Is were undoubtedly clean and clear, no area of their performance succumbing to splashiness or sloppiness. Their chief crime was indistinct bass. It was there, but it wasn't clear. It didn't rumble and there was a lack of conviction; I had to listen too hard to catch bass lines. In an uncluttered piece of music like Janis Joplin's 'Cry Baby', the bass was more evident, but still it didn't seem to be as much part of the performance as the rest of the band and there was little force behind it.

Treble was the exact opposite. It sang out sweetly above music, obvious and nicely defined, without sounding sharp. Joplin's vocals were not as raucous as usual, but the LS Is picked up the delicate nuances of her voice's fluctuation and made it sound as bluesy as it should, if not as startling as it can be. I appreciated these treble strengths when listening to Oasis' Definitely Maybe, a good album, if not the best recording. Cymbals were cleanly separated and beautifully defined, emphasizing the mess other speakers often make of them, an ability in the LS Is I found impressive.

Guitar had bite and electric strings were vibrant, but without synthetic brightness. Piano lacked magnificence in dramatic pieces, but clarity and sweetness made up for lack of weight.

Woodwind and brass were as smooth as cream, and more forward than through the Missions. The midrange offered all this effortlessly. Although you can't be an Arsenal and Spurs fan at the same time, I have decided that it is possible to support both Rogers' LS Is and Mission's 73ILEs in the price war. Particularly as it emerges that their strengths lie in different areas. The LS Is don't have a strong bass, but a gloriously clear and sweet midrange and treble. Of the two models they are softer and have a tendency to civilize. Their gentleness was persuasive and gave them a winning quality.

Laura Martin finds Rogers' new baby loudspeaker, the LS1, sweet competition for her Missions.

WORLD VERDICT

Clear, bright and open, but with weak bass. Best used close to, or against a wall.
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We reviewed the Isis loudspeakers in our January ‘96 issue, finding the powerful and exciting balance of these small bookshelf/stand mounters captivating. The Isis loudspeakers are named after the Thames at Oxford, and use Castle’s newly developed 130mm injection moulded cone, first seen in the more upmarket Severns. This is combined with a 25mm composite dome tweeter in a real wood veneered cabinet, giving it an extremely high quality feel at the price.

The same driver complement is found in the Severns, albeit in a larger floorstanding enclosure. This enclosure is divided 2/3 of the way down with an angled shelf to set the correct internal volume. This also braces the cabinet walls to reduce vibration and helps to reduce the effect of standing waves that
introduce colouration. This gives the Severns a fast and clean sound, along with good bass from their elegantly proportioned cabinets.

The 1st prize Castle Howard SI I speakers we are offering are a large floorstanding design. They use an upward firing 165mm doped paper driver, 1/4 wave horn loaded for deep and tuneful bass. A second 165mm driver on the front baffle provides midrange and is complemented with a 25mm metal dome tweeter. These SI I models are the latest version of the Howards, a full review of which will be found in next month’s March issue of Hi-Fi World.

To enter this super competition, simply complete the questions and tie-breaker opposite.

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6. V.W.H.Ingram of Walsall.
7. J.Williams of Bournemouth.

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COMPETITION ENTRY QUESTIONS
Cut out and affix to the back of a sealed envelope

1) What isn’t the Isis?
   A. An Egyptian Goddess
   B. The Thames at Oxford
   C. A famous composer
   D. A Castle loudspeaker

2) Where are Castle Acoustics based?
   A. North Yorkshire
   B. South Glamorgan
   C. East Sussex
   D. West Midlands

3) The angled shelf in Castle’s Severns doesn’t...
   A. Set the internal volume
   B. Brace the cabinet
   C. Help reduce standing waves
   D. Horn load the bass

4) Which of the following does Castle’s Howard use?
   A. 1/4 wave bass loading
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TIE BREAKER (obligatory)

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[1] Only one entry per household will be accepted. 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 March 1996 issue. Purchase of the magazine is not a precondition to entry.
[3] No correspondence about this competition will be entered into and the editor’s decision is final.
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John Borwick, Gramophone

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FEBRUARY 1996
It is interesting the difference a venue makes to the enjoyment of live music. I went to see Paul Weller at the Brixton Academy this week (27th of November) and was struck how different an experience this was to seeing him at Manchester’s G-Mex almost a year before. It is always wonderful to be in his presence, but his music is too intimate and personal to adapt well to such a big place.

The only groups I can imagine matching somewhere as large and warehouse-like as G-Mex are stadium bands, or teen groups like Take That, whose concerts are more a convention of thousands of fans than about the music itself. When I saw the Cure there a couple of years ago I was struck by how impersonal and detached the whole event was. An old convention of thousands being unnecessarily hyped up, and standing in front of you. I was constantly aware of Weller’s presence and his excitement at being on stage.

Having said that, there is also something wonderful about a much loved CD that offers no surprises but possesses moments that catch you every time. For a performer like Weller, spontaneity and interaction with fellow musicians is like breathing. I would hate never to have seen him live and I would surely have missed something if I had not.

Anyway, the Brixton Academy is the place to experience without being overwhelming. There really is something magical about a live performance that forces you to break personal musical rules.

"Anyway, the Brixton Academy is the place to experience an intimate sound that is enveloping without being overwhelming. There really is something magical about a live performance that forces you to break personal musical rules."
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One of this lad’s best nights out ever was spent in the company of several hundred Teddy Boys and their pony-tailed belles in the now all but forgotten Lyceum Ballroom. These were the real thing, having somehow managed to avoid Mods, Rockers, Hippies, Glam and so on, they still got together - many with their kids in tow - to carry the torch of teen rebellion first lit by Sun Records and the early work of Elvis, Eddie Cochran, Roy Orbison and other trail-blazers. It wasn’t long before The Clash, then at their peak, grew sideburns and adopted crepe-soled brothel creepers, drape jackets and put Brylcreem back on the bathroom shelf. Rockabilly was king for a day or two, and New York trio The Stray Cats were as hot as they came. Deviationists The Cramps lasted longer and were more influential (whence Goths without the nutty combo’s help?) but for a while it looked as if the Cats were as hip as it could get.

They may be bargain bin material/rare collectors’ faves now, but crazy upright bassman Lee Rocker is still pounding out the devil’s music. This is his second solo outing and alongside guitar man Mike Eldred and the stomping drums of Henree Debaum, Mr. Rocker proves he can still cut a rug. Rocker is in his element with solid staples such as Chuck Berry’s ‘Beautiful Delilah’, or his own typically breathless originals. Throw in the ever dependable Memphis Horns and the lissom keyboard work of Riley Osborne and you’re headed for an enjoyably bumpy ride in a bopping time machine that’ll drop you somewhere in the mid-Fifties.

Of course it goes without saying that this is primarily body music, best taken on one’s feet and jiving like there’s no tomorrow. Watch your local billboards for live appearances, which is no doubt where Lee and his chums are probably most easily appreciated. Meanwhile, this is a more than passable hors d’oeuvre, the expected rockabilly bops blending entertainingly alongside beefed-up Blues and Latino Soul. Hotcha!
GOLDEN SMOG
Down By The Old Mainstream
RYKO RCD/RAC 10325

Ask any true vinyl addict worth his/her salt and they’ll tell you stories of tales of rock’n’roll apocrypha. Of bootlegs of the Sex Pistols when they were billed as The Spots; of pseudonymous guest appearances by Paul McCartney on some dusty old Steve Miller LP (as Paul Ramon); even of one best forgotten piece of crapola that sold by the lorry-load when the whisper got around that it was the Moptops in disguise. Hence thirty years of subterfuge and plain unmasked deception later it’s no surprise that a record which pops up alongside a snippet of home-made tape “laid down” by George Formby in 1929? Could they finally have come up with a line-up That Dare Not Speak Its Name should arouse misgivings and suspicious twitching of eyebrow, nostril and other sceptical parts of one’s anatomy. Could it be that Bob Mould, Morrissey and Michael Stipe have got together and performed a jauntier approach of Country Rock’s more rough’n’ready originators. And while their lyrics sometimes made me cringe - “yesterday’s just the day before today” - you can’t help but know they’d be a hoot to watch in a hot sweaty cellar bar, accompanied by a couple of ice cold beers. But before they give up their day jobs they really ought to give that awful name the elbow pronto. That aside, this is an entertaining romp through familiar territory. It may not be ground-breaking but it’s a heck of a load of fun. Yee-ha! and stuff like that. And no Roy Rogers jokes, thank you very much.

Boone duelling with Sid Vicious? After many tears Ryko’s press office finally spilled the beans and saved me a fortune in Kleenex and the price of a new syrip. Because under that daft name lurked none other than - Ta-raa!! - several people I’d never heard of. This prestigious gathering come from several groups I’d also never heard of. Singer Dan Murphy came fresh from not conquering the globe with Soul Asylum. Co-vocaliser Jeff Tweedy cut his teeth with Wilco, while Marc Pearlman and Gary Lounis were with the Jayhawks, and drummer Noah Levy was probably in other groups too but only he seems to know for sure. The Jayhawks actually cut a couple of LPs and may or may not still be together and signed to a major label. Meanwhile Golden Smog do a more than passable job around the hybrid once known as Country Rock as pioneered by the likes of The Byrds and The Flying Burrito Brothers. The genre achieved its apotheosis with Gram Parsons’ solo work and its nadir (but, ironically, greatest commercial success) with those weedy pillocks, The Eagles.

Golden Smog rarely veer into the cheesier territory that made Hotel California the LP that thousands of ex-hippies rolled their final spiff on prior to getting a haircut and a job in Dad’s office. They seem to prefer the jaunty approach of Country Rock’s more rough’n’ready originators. And while their lyrics sometimes made me cringe - “yesterday’s just the day before today” - you can’t help but know they’d be a hoot to watch in a hot sweaty cellar bar, accompanied by a couple of ice cold beers. But before they give up their day jobs they really ought to give that awful name the elbow pronto. That aside, this is an entertaining romp through familiar territory. It may not be ground-breaking but it’s a heck of a load of fun. Yee-ha! and stuff like that. And no Roy Rogers jokes, thank you very much.

THE ROLLING STONES
STRIPPED

million. Like the desultory and totally unnecessary cover of Dylan’s ‘Like A Rolling Stone’ that preceded it, assisted no end by its accompanying video, Stripped relies almost totally on state of the art technology, and precious little on creativity and imagination. The songs hail largely from way back in the group’s back catalogue, from chart hits like ‘Not Fade Away’ (the young Stones rip off Buddy Holly ripping off Bo Diddley, yawn) and such proven favourites as ‘Wild Horses’, ‘Let It Bleed’. Old hat? Well, maybe. But hey, get this kids - The Stones have gone interactive. Yes! Provided you own several hundred quids worth of equipment, you can actually stick the CD into your computer! Just check the extensive sleeve notes or, failing that, get your E-mail out or simply slip into your Internet stockings - coppers or what?

Funny, but I always thought the music came first. And perhaps it did. Basically this is a record of the Voodoo Lounge tour. It is of course capably performed and cleanly produced and cunningly titled so as to con nobody in their right mind that it’s an ‘Unplugged’ session. And while it’s true that there are a few acoustic bits, for example ‘Angie’ (but wasn’t it always a bit that way?), for the most part this is the same old stuff trotted out by some considerably older geezers. It wouldn’t be fair to knock this disc when John Lee Hooker’s still doing basically the same thing at age 107, and doubtless Jagger and company will weave their ragged way into the next millennium too. If they’ll ever make another great record remains to be seen. For the time being ‘Stripped’ is little more than a barefaced marketing ploy. Be honest, could you really see these millionaires peeing against a garage wall? Only if they owned the franchise I reckon. It’s only occasionally, as on the closing Willie Dixon song ‘Little Baby’, that one gets a whiff of the glory days. Sadly, much of the rest might just as well be silence. Definitely not groovy.
We mentioned David Toop a couple of months back for his part in the reissued Deadly Weapons album (on Nato), a collaboration with singer Tonie Marshall and fellow improvisers and genre-trashers Steve Beresford and John Zorn. That album, recorded back in the late 80s, while not wholly successful, nonetheless offered some pretty serious ideas about the fusion of jazz - or perhaps, improvisation in a wider sense. Since ravers rediscovered Brian Eno's term, we've all come to know this as Ambient.

But Deadly Weapons, for Toop, was just one step in over twenty years of making music. It's a career which has seen Toop embrace Free Improvisation, Techno, Thrash, Ambient and Fourth World hybridisation along the way deploying a host of musical tools - guitar, flutes, pedal steel, and a whole heap of music computers (drum machines, synths, sequencers and samplers) - in some pretty startling ways. It's also a career which has seen Toop collaborate with some of the more astonishing musicians in contemporary music.

Ironically though, until very recently, Toop remained best known in the music community for his contributions to The Times, The Wire and, perhaps most significantly, The Face. He introduced readers to a sound world in which Rap (on which Toop wrote the indispensable book Rap Attack) rubs shoulders with Free Jazz, Thrash Metal with World Music (whatever that is), and Soul balladry with (h)ard k/core Tech/kno.

But Toop as a musician came to people's attention once again last year with the album Buried Dreams, a collaboration with sculptor and sound installation specialist Max Eastley, with whom Toop has performed off-and-on since their mid-70s album New and Rediscovered Musical Instruments. The critical reaction to Buried Dreams was phenomenal. The rise of Ambient in the wake of Rave has quite unexpectedly provided perhaps the most receptive environment for experimental music since the early 70s. But five years or more of Ambient, with its psychedelic meandering and inherent feel-good factor, had worn pretty thin by last year. With its dense textures and morbid claustrophobia Buried Dreams - along with the work of just a handful of...
record reviews

musicians pushing back the envelope of possible musical directions - filled a gaping hole left by Ambient.

Unbelievably, Screen Ceremonies is Toop's first solo album and, I should point out, the launch release for The Wire magazine's own label Wire Editions. Neither party could have had a more outstanding or diverse debut. Toop is a musician and writer dedicated to preserving the individual identity of separate musical movements and, at the same time, the integration of some of their facets into a larger musical picture. He has laid his cards on the table with Screen Ceremonies. With guitars, percussion, flutes, synths, drum machines programs and vinyl samples, Toop has built up a collage of songs which move effortlessly from the spooky techno of The Psychic to the jazznoir of Reverse World, from the spectral ambience of Dream Fluid to the imaginary rituals of Butoh Porno.

Truly, not enough space here to do this album justice; one of the albums of the year unquestionably.

Simon Cooke

STEVE HOBBS
On The Lower East Side
CACD 79704

This is one of a stack of CDs launched recently under the Candid banner (distributed by ZYX) done out in really sexy black label print. I assume that's for all you tech-heads out there worrying about stray laser reflections ruining your hard won sound. They look good, anyway.

The recording quality here is well worth the attention to detail that is being lavished in manufacture. The sound is clear and spacious, creating atmosphere which surrounds the players. It also does justice to the sparkling cymbal and vibraphone tones which fill this recording. My one quibble with it would be the slight hiss noticeable in the quieter passages (which does not occur often) despite this being a fully-digital 'DDD' recording.

Really though, I have to wonder at the chutzpah of a vibraphonist leading a band in this manner. It's a beautiful sound, but it quickly becomes wearing (to my ears anyway) as it lacks the body and substance required for a lead instrument. Dropping Steve Hobbs further back into the mix would in my opinion have paid dividends in terms of involvement.

The band, now Kenny Barron on piano (marvellously supportive yet exuberant in the solos), Peter Washington on bass and Victor Lewis on Drums, form excellent backing which plays with the energy and industry of a broken ant hill. A more pedestrian band would have deadened Hobbs' impact, but this line-up fairly cracks through eleven tracks including 'Birds', 'Au Prifave', Porter's 'What is This Thing Called Love', Kern / Hammersteins'

CLARE HIRST QUARTET
Tough and Tender
33 JAZZ 025

Hirst leads the band on tenor and soprano saxes, but it's really Davide Giovanni's drum work which is the fuel for this drive. Phil Scragg's lyrical but punchy bass lines also play an important part in underpinning the work when it threatens to slip in to something more fluid. The fourth hand - hands really - is provided here by Hilary Cameron's keyboards.

The first three of these tracks - all written by Hirst - are rather pedestrian, but four's the lucky number here. Hirst starts with a sound like the muezzin to a secret cabal or the hawker's cries from some exotic souk, then the whole band takes off - takes flight - before settling with the steady sound of Cameron's keyboards. Although it's a long way from scaling the heights of the greatest jazz tracks, the players are clearly having fun just tossing phrases around between themselves, and there's more than a little electricity in the air. There a few minor errors too, crackles and pops (although that could just be pressing on this one disc) and the occasional bit of hasty pan potting which has the musicians moving in mysterious ways. Still, these are forgivable in an impressive CD of modern swinging jazz.
Peter Herring

With one of Norway’s finest orchestras and one of its finest virtuosos, plus a generous helping of the music of Edvard Grieg, it’s something of a fjord fiesta this month. In terms of recording though, it is two of southern England’s magnificent cathedrals that take centre stage.

Haydn's oratorio, The Creation, a work which was a triumph for its composer from the very first performance, in Vienna in March 1799. Dorati’s account is lively, with well-sprung rhythms and generally first-rate playing from the RPO. The Brighton Festival Chorus - as you would expect from any choir trained by Laszlo Heltay - is in superb voice, and would have benefited from greater definition in the recording. Otherwise, the sound - a Kingsway Hall production engineered by the legendary Kenneth Wilkinson - has worn its years well, although current tastes would probably have placed the excellent quintet of soloists a little less to the fore.

But these are minor caveats when considering this joyful, compelling performance in its entirety. And, in this new reissue format, it comes with the bonus of a fine performance of the rarely heard Salve Regina under the direction of Laszlo Heltay.

PULLING OUT THE STOPS!

Popular pieces for trumpet and organ.

PULLING OUT THE STOPS!

Popular pieces for trumpet and organ.

Ole Edvard Antonsen, trumpet; Wayne Marshall, organ

EMI CLASSICS 5 55048 2 (DDD/63.09)

As that most erudite and meticulous of music commentators, Robert Dearling, points out in his accompanying note, trumpet and organ recitals almost certainly have a firm historic basis. To their credit, the Norwegian trumpet virtuoso, Ole Edvard Antonsen, and the highly-regarded English organist, Wayne Marshall, do venture away from the well-trodden musical path usually taken in such recitals. True, we do get old favourites such as Jeremiah Clarke’s ‘Trumpet Voluntary’, and Bach’s ‘Jesu, Joy of Man’s Desiring’, along with the Eurovision signature tune otherwise known as the Prelude to the Te Deum of Marc-Antoine Charpentier, but the
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IONS BROWN AND THE NORWEGIAN CHAMBER ORCHESTRA
EDVARD GRIEG
Two Elegiac Melodies Op34/Two Norwegian Melodies Op63

MUKAEL TIPPEI
Fantasia Concertante on a theme of Corelli
LUDWIG VAN BEETHOVEN
Symphony No1 in C Major Op21
The Norwegian Chamber Orchestra; conductor and soloist, Iona Brown
NAIM AUDIO NAICDC009 (DDD/58.49)

This 1994 live concert recording was made at the cathedral in Naim Audio's home city of Salisbury. The recording engineer is Ken Christianson of Chicago's Pro Musica, and he achieves excellent results from an acoustic that, for whatever reason, has been largely bypassed by the recording world.

Most importantly, as well as capturing the rich timbres of the orchestra within that acoustic, Christianson maintains the compelling immediacy of a live occasion. For example, audiences are in the habit of clapping after performances, so why, as some live tapings do, pretend that they don't and insert an unreal silence after the last note has faded into the ether? The balance has been finely judged here: not close enough to lose the atmosphere of the venue; not distant enough to become detached from the proceedings.

Musically, there is a satisfying 'completeness' to this new Naim CD, a true concert of which the highlight for me was a wonderfully sympathetic performance of Tippett's Fantasia Concertante, a work in which the composer pays homage to Arcangelo Corelli and the Italian Concerto Grosso tradition, and one which forty years after its premiere, still astonishes with its wealth of invention and craftsmanship.

Here, Iona Brown, artistic director of the Norwegian Chamber Orchestra, is joined by two of the orchestra's other string players in the three-voice concertante group. Elsewhere on this CD she takes the conductor's podium, conducting eloquent performances of some of Grieg's most famous short pieces, and a well-judged, unmanpered rendition of Beethoven's First Symphony. Altogether, I enjoyed being 'under the spire'.

Musique Heroique of Bach's contemporary, Georg Philipp Telemann proved a delightful discovery. This sequence of twelve marches dates from 1728 and was written for two unspecified instruments and continuo, but the melodies are completely suited to the trumpet.

There are other Bach items, too, which are less familiar in versions for these instruments. Messer's Antonsen and Marshall's faithful, yet imaginative arrangements of the 'Badinerie' from the Orchestral Suit No2, and the Air from Suite No3 (the evergreen 'Air on a G string') have an unexpected freshness. And the playing in the Chorale Prelude 'Nun komm der Heiden Heiland' is both beautiful and affecting. The arragement of Rachmaninov's lovely 'Vocalise' is similarly satisfying.

The Rachmaninov supplies the link between the 'traditional' Baroque half of this programme and the unexpected delights of four arrangements of music from Ole Edvard Antonsen's native Norway, including Grieg's wistful 'Last Spring', which went on to become the second of his Elegiac Melodies Op34. As with all the other pieces here it is not only graced with superlative musicianship, but with exemplary sound quality.

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I'm tempted to say "They don't make 'em like this any more", and in these times of musical correctness, there are those who frown upon this kind of programme of popular lollipops transcribed, in this instance, for organ. But, Martin Souter has paid his scholarly dues with outstanding recitals of Bach and Handel, and is surely entitled to a little self-indulgence.

Not all of the transcriptions work — Sibelius's Finlandia doesn't take off. But pieces such as the 'Grand March' from Verdi's Aida and E. Lemare's reworking of Elgar's Pomp and Circumstance March No1 come over splendidly on the organ of Winchester Cathedral, as does Mendelssohn's 'War March of the Priests'. The finale of Rossini's William Tell overture and Grieg's 'In the Hall of the Mountain King', from Peer Gynt, are thrilling, although 'Nimrod', from Elgar's Enigma Variations sits uneasily in the middle.

This generous programme concludes with one work that was intended for organ from the outset, Louis Vienne's charming Carillon de Westminster (complete with the chimes of Big Ben). The recording, like others in this series engineered by Geoffrey Horn, captures the magnificent Harrison & Harrison organ in all its 4,000-pipe glory. The sound is as spectacular as the title of the CD suggests and will no doubt be much appreciated by the sponsors, Quad, as a demonstration disc!
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Drive Unit Pack £230

KLS4 TWO WAY CARBON-FIBRE DRIVER LOUDSPEAKER
A two way standmounter using stagger-tuned reflex loading for good bass, plus light and fast carbon fibre drivers. Drive Unit & Crossover kit etc £230
Drive Unit Pack £120

KLS6 ADVANCED TECHNOLOGY THREE WAY LOUDSPEAKER
KLS6 is our most advanced loudspeaker to date. It uses a combination of Audax’s HD-3P gold piezoelectric dome tweeter and High Definition Aerogel (HDA) midrange and bass drivers. To provide superb bass depth and dynamics, an 8” HDA bass driver is used in a large, efficient reflex enclosure. With 89dB sensitivity, and a smooth impedance curve, KLS6 can be easily driven with amplifiers capable of producing 20watts or more. Drive Unit Pack £640
Drive Units & Crossover kit etc. £825

KLS7 TWO WAY CARBON FIBRE DRIVER FLOORSTANDER
A compact and affordable two way reflex loudspeaker. KLS7’s slim dimensions make it easy to accomodate, but it uses light and fast carbon fibre drivers, so performance isn’t compromised. An audiophile bargain. Drive Unit Pack £110
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K5881 KIT £395
A superb, Class A, 20watt stereo power amplifier that uses the Russian 5881 output valve, a military version of the American 6L6, designed for low distortion audio work. Designed for long life, low running costs and excellent sound quality, K5881 is sensitive enough to be used with a simple passive pre-amp. or our own line-drive pre-amp, and it matches modern loudspeakers well.

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4 inch mid=HM130Z0
6.5inch bass/mid=HM170Z0
8inch bass=HM210Z0
=CARBON FIBRE
HDA=HM100C0
=HM170C0
HM210C0

FABRIC DOME TWEETERS
TVV025M0 (25mm 92dB suitable for 2-way systems)
TVV034X0 (34mm 93dB a large dome with powerful sound)

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**SPK100**

**Ortofon** 01753-889949

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240/120 option - delete the voltage NOT required. Valves included except where stated.

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**WARNING** - World Audio Design Ltd will accept no responsibility for kits, parts or modifications made or supplied by third parties and based on our designs.

### DESCRIPTION

<table>
<thead>
<tr>
<th>Description</th>
<th>ORDER NO.</th>
<th>QTY</th>
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<td>TV034X0</td>
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<td>Oval Gold Piezo electric dome tweeter</td>
<td>HD-3P</td>
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<td>HEYBROOK QUARTET</td>
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<td>KRELL KRS 200 MONOS (£18000)</td>
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<td>GRYPHON XTC preamplifier halfprice</td>
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<td>KRELL KSA 50 's'</td>
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<td>CONRAD JOHNSON PREMIERE 7B</td>
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<td>JADIS DEFY 7</td>
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<td>MICHILL ARGO pre-amp</td>
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<td>SUGDEN A25B, A28, A48 FROM</td>
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<td>MARTIN LOGAN AERIUS</td>
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PRINCIPLES OF ELECTRON TUBES, by Herbert J. Reich
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Principles of Electron Tubes first appeared in 1941 as a textbook for beginners studying valves for the first time. The book starts with the basics of how a vacuum tube actually works, including how construction and materials affect performance. Once this basic understanding is in place, Herbert Reich goes on to explain the principles of the simple diode valve, the triode and multi-grid valves. Familiar with the various valve types and their operating principles, the book continues to show how a simple circuit is designed and on to amplifiers, transformers and power supplies. A must for budding valve enthusiasts and an invaluable reference for hobbyists.

70 YEARS OF RADIO TUBES AND VALVES, by John W. Stokes
£19.95

New Zealand author John Stokes, with over fifty years experience, outlines the evolution of radio receiving tubes and the part they played in the domestic radio receiver in this beautifully illustrated (B&W) book. An ideal reference for those interested in the history and development of valves and for collectors alike.

ELECTRONIC UNIVERSAL VADE-MECUM, by Piotr Mikolajczyk & Bohdan Paszkowski
£49.95

This sizeable data book contains no fewer than 5693 valves divided into 442 groups. It contains connection details, operating parameters, load lines, example circuits and more making it one of the most comprehensive reference books we’ve seen, although there are some omissions, such as 300B and 211 valves.

LOUDSPEAKER BOOKS

BULLOCK ON BOXES, by Robert M. Bullock
£12.95

This book relies on manipulation of Thiele-Small parameters (supplied with all drive units) to optimise reflex box design, but with a calculator and at high school level. With lots of helpful tables and graphs, this straightforward book is every beginner’s best bet for getting to grips with sizing the box and port of a reflex loudspeaker.

ACOUSTICS, by Leo L. Beranek
£39.95

From analogous electrical circuits important for modelling, the author moves through to microphones then loudspeakers. He covers design factors, showing how theory influences practice in drive units. Loudspeaker enclosure types covered include sealed, ported and horn. The behaviour of sound in rooms, very important for hi-fi, is also covered extremely well here.

QUICK & EASY TRANSMISSION LINE SPEAKER DESIGN by Larry D. Sharp
£10.95

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THEORY AND DESIGN OF LOUDSPEAKER ENCLOSURES by J. E. Benson
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In April 1947, Williamson’s valve power amplifier become an overnight success. The author takes you deep into his design decisions and offers practical advice on how to build the amplifier and set it up for best performance.

A popular and easy to understand book on building loudspeakers, using empirical techniques that pre-date computer analysis. A fine grounding, written by a manufacturer with first hand experience - recommended for beginners.

A vintage electrostatic or are just interested in the principles behind electrostatics, this book is a must.

LOUDSPEAKERS

LOUDSPEAKERS: THE WHY AND HOW OF GOOD REPRODUCTION, by G. A. Briggs. £10.95

ELECTROSTATIC LOUDSPEAKER DESIGN AND CONSTRUCTION, by Ronald Wagner. £19.95
This book takes you step by step through the design and construction of a full range electrostatic loudspeaker, including the basic operating principles behind electrostatics. Whether you intend to build your own electrostatic, repair and restore a vintage electrostatic or are just interested in the principles behind electrostatics, this book is a must.

THE LOUDSPEAKER DESIGN COOKBOOK, by Vance Dickason. £23.75
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Roy Gregory Hi-Fi Choice

**Airoflex, Rating**

What Hi-Fi, Feb. 1994

“Airoflex, High Wycombe - Bucks 01294 437889 £388.50

“...they are alluring.

Noel Keywood, Hi-Fi World

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Dave Berriman, Hi-Fi News

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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 disc stage was sensitive, had a high overload and has a built-in warp filter. This introduces a slow bass roll-off that can make the Cyrus amps sound a little lean in my experience. Hiss was very low at -79dB.

The Cyrus measured well in all areas. NK

AMPLIFIERS

MISSION CYRUS AMPLIFIER

The new Cyrus power amplifier produces 66watts into 8ohms. This increased healthily under test to 100watts into 4ohms. With modern, sensitive loudspeakers (86-90dB from 3V in) this is more than enough to go loud in a majority of homes.

Bandwidth of the CD/tuner inputs was wide a 9Hz-4kHz, and sensitivity of all inputs except CD variable from a normal 220mV to an insensitive 420mV. Whilst this is a useful for level matching, the highest sensitivity is merely normal. Naim offer 70mV for example and, for some, this can be useful. Distortion was low at 0.003% in the midband and 0.006% at high frequencies, although level rose to 0.04% at low volume, extended harmonics appearing. However, they were low enough not to be subjectively consequential.
The new GRAMEX 520 valve monoblocks are now on demonstration. Second hand valve amps including LEAK TL10 and STEREO 20 and RADFORD MA25's. We specialise in good quality turntables:- GARRARD 401 and 301 and THORENS 124 also SME and GOLDRING. Kits built to order and custom cables made up. Our opening times are flexible, so please phone before visiting the shop: 0171-401 3830."

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AMPLIFIERS

FOCUSRITE RED 4/5
Being aimed primarily at studios, the Focusrite combo was predictably powerful. It turned out no less than 288 watts into 8 ohms and considerably more - 460 watts - into a low 4 ohm load. This is an amplifier for inefficient loudspeakers and big rooms.

Distortion was low, reaching 0.2% maximum (10V/10kHz) but extended harmonics were present at all power levels and frequencies, which is not a good sign. This suggests that some roughness or sharpness might be evident, a phenomenon to be judged finally by listening tests.

Frequency response extended from a low 7Hz right up to 42kHz, not as wide as some amps, but plenty wide enough.

There was more d.c. offset at the transformer, with little (thermal) noise from the wire (yes, wire produces noise), results in a very respectable equivalent input noise figure of 0.07μV. So hiss will not be a problem with most MCs, but all the same, with very low output types (Linn, Lyra) it will still be just audible.

Putting an MC transformer with x21 voltage step-up in front of the normal x280 gain of the MM stage gives a massive overall gain of x6000. There's enough gain with MM and MC to drive most power amplifiers (1V input sensitivity) direct. Then the P2's gain control can be used for volume.

As expected, because the P2 uses valves, there's plenty of input overload headroom. Output overload occurs at a massive 25V swing, which will never be encountered in practice. NK

AUDIO INNOVATIONS P2 PHONO STAGE
The P2 has an upward tilt in its response curve that favours treble a little, so it will have a brighter midband. However, upper treble roll-off limits response to 22kHz and will ensure there's no sharpness in the sound. Deep bass below 40Hz has been rolled off to prevent warps getting through. However, the simple first order filter used will lighten bass a trifle.

As expected the P2 was a little (around 4dB) hissier than many solid-state phono stages, because it uses the ECC82 as an input valve. It isn't so bad all the same, producing 1μV equivalent input hiss (CCIR weighted noise).

For moving coil cartridges the x21 gain offered by Audio Innovations' step-up transformer, with little (thermal) noise from the wire (yes, wire produces noise), results in a very respectable equivalent input noise figure of 0.07μV. So hiss will not be a problem with most MCs, but all the same, with very low output types (Linn, Lyra) it will still be just audible.

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TUNER
NAD 414
Frequency response measured flat to 7kHz, after which the mpX filter has been terminated to give just a slight loss of treble, as our analysis shows. All the same, frequency response hits 42kHz (-1dB). I'd expect this to result in a smooth sound, free from treble spitch. Filtering was good, pilot and mpX being suppressed below -70dB.

The 414 produced little distortion and hiss was satisfactorily low at -72dB, providing an aerial signal of 630μV or more was applied. The signal strength meter interestingly could identify a suitable strong signal, its top segment lighting up at 1.25mV.

Not many aerials can supply this, so it is not likely to light very often. The 414 was of normal sensitivity and had very high selectivity. Switching to Narrow improved adjacent channel rejection most, but it also suppressed strong signals further away, a good feature. Audio output was high at 700mV, enough to drive any amplifier. As expected, the NAD 414 measured very well in all areas, much like its predecessors. NK

TEST RESULTS
Frequency response
Stereo separation
Noise

-3dB +3dB
0
20kHz
50
55dB
60dB
150/550mV
0.12%
45/21mV

TEST RESULTS
Disc (MM)
Frequency response
Separation
Input noise
Distortion
Gain
Overload

Disc (MC)
Frequency response
Separation
Input noise
Distortion
Gain
Overload

0.02%
1μV
0.07μV
0.02%
25mV
25mV
0.1%
-72dB
0.63mV
80dB
2.5μV
35μV

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CD PLAYERS

PHILIPS CD721 COMPACT DISC
The CD72I has a weird response, certainly tailored for subjective effect, which is interesting. Philips have traditionally not bothered with audiophile tinkering, but the CD72I has bass lift to add low end power to its sound. It also has upper treble roll off - a very British practice. This softens out the hard treble of CD, making it more amenable on the ear. I'm surprised that a budget product should have had such a make over.

Distortion wasn't especially low, certainly not up to that of more expensive Bitstream players. The figure of 0.08% at -30dB is disappointingly high, especially since it comprises 7th, 9th and 11th harmonics. This is liable to introduce some harshness. Also, low level signals at -90dB were not resolved, unless dithered.

Otherwise, the CD72I measured well enough, with a normal output of 2V, plenty of channel separation, but some spurious output above 22kHz.

The CD72I may not sound sweet, but it could well be entertaining enough for the price. NK

Frequency response
4Hz-21.2kHz

Distortion (%)
-6dB 0.004 0.004
-30dB 0.08 0.08
-66dB 0.80 0.80
-90dB 96 84
-90dB dithered 24 22

Separation dB
left right
1kHz 130 128
20kHz 118 117

Noise
-102dB
-101dB

Dynamic range
103dB
2V

CASSETTE

DENON DRW-580
Both A and B transports replayed tapes properly, lack of head azimuth error giving response to 16kHz. There was no reverse azimuth error on either transport, but transport A, giving only replay, was +1.3% fast, which would be just noticeable as fast tempo. Replay hiss and hum were also low on A and B.

The auto-reverse transport mechanisms were identical and neither was especially speed stable. I'd expect wow to be audible on piano and papery colouration from flutter.

The record head of transport B was surprisingly good in many respects. Although bumpier than a camels back below 150Hz, it was otherwise flat to 20kHz with metal tape, as our analysis shows. Bias varied on all tape types, so even metal tapes can be tuned in.

Head overload figures were surprisingly good, and Denon have set OVU high to exploit this.

The DRW-580 measured as well as could be expected, considering how much is offered at the price. As twin decks go, it offers a good performance, even if in hi-fi terms it has weaknesses. NK

TEST RESULTS
REPLAY (pre-recorded tapes)
Frequency response (-2dB) 35Hz-17kHz
Speed accuracy +1.3%
Hiss (70uS, Dolby out) -58dB

RECORDING (blank tapes)
Frequency response (IEC Primary Refs.)
ferric (IECI) 20Hz-16kHz
chrome (IECII) 20Hz-16.5kHz
metal (IECIV) 20Hz-20kHz

Separation (1kHz) -60dB
Distortion (315Hz) 1.6%
Hiss (70uS, Dolby out) -55dB
Speed variations (DIN total) 0.2%
Flutter energy (3.31kHz) -26dB
MOJSAT (IEC Refs) 315/10k
IEC I (ferric) 4dB/-10dB
IECII (chrome) 3dB/-3.5dB
IECIV (metal) 1dB/+3dB

Frequency Response

Speed Stability

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LOUDSPEAKERS

HARBETH HL-P3ES
The newly revised HL-P3ES loudspeakers have a very smooth response through the midrange and treble, which should ensure a clean and neutral balance. Crossover integration was superb, the response staying flat over a wide range of microphone positions, indicating good phase alignment between the two drivers. Around 500Hz there is a shallow dip which may remove some warmth from the sound, but below this the bass lift should give them a solid bottom-end for their size.

In similar fashion to the original HL-P3s, the new ES version is not the easiest load. A low overall impedance of 6.5Ω and low sensitivity of 82.5dB means they will need a lot of power to get them going. Making matters worse, the impedance curve falls below 3Ω around 150Hz, so an amplifier with good current delivery into 4Ω will be necessary for best results. DB

DALI 450
Dali have engineered their 450s with a plateau lift through the treble, which should give them a detailed and insightful balance. Below this there is a shallow dip which may remove some projection from vocals, but should ensure that they don't become too hard. Bass output is healthy, extending smoothly downwards. The Dalis should have an exciting and engaging balance as a result. The 450s are quite sensitive, producing 89dB at 1m for a nominal watt (2.83V) pink noise signal. Overall sensitivity was low though, measuring 5.9Ω. The impedance curve was smooth, but sits low, dipping below 5Ω for the majority of the audio band. This means they will draw current. DB

ROGERS LS 1
The LS 1s are a miniature reflex loaded design intended for positioning near a wall, either on a stand or bookshelf. So although bass rolls off quite early after a gentle peak, this low bass will be bolstered by wall reinforcement. As is common with miniatures, the LS 1s have been engineered with a bass peak to give the impression of powerful bass and a corresponding treble peak, needed for balance. There is a lift around 5kHz, which I normally find gives a pleasant sparkle to the sound, adding clarity without harshness. Below this there is a wide and shallow dip which may be heard as a lack of vocal projection.
At 85.5dB the LS 1s are quite sensitive for a miniature, and with an overall impedance of 8.4Ω they won't demand too much current either. I'd recommend amplifiers capable of 30watts or so for best results. DB

SYSTEMDEK SYSTM 16S
The Systym 16Ss have quite an evenly balanced response, but one with several trends that will add character to the sound. The lift in the midrange will help project vocals well, but could produce some harshness. In a similar vein, the lift high up in the treble should ensure good insight and detail, but may also add sharpness. Both of these factors will depend on the quality of the drivers used. There is also a lift in the bass which should ensure a full and powerful bottom end.
The impedance curve of the 16Ss was very smooth, suggesting they are mainly resistive as a load. Combined with a high overall sensitivity of 88dB, and an overall impedance of 8.9Ω, this makes them a prime candidate for zero feedback amplifiers. I'd recommend amplifiers capable of producing around 20watts or so for best results. DB
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A detailed specification sheet is available for both current models.

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All Manticore Audio visual products come with a lifetime guarantee. This is qualified in the following way - electronic components, such as transistors, are guaranteed until the end of their reasonable working lifetime. Mechanical assemblies for the most part manufactured by us are guaranteed until the reasonable end of their specified design life. The first Mantra was produced 12 years ago and is still in fine shape.

SeroUs Kit

NEWS LETTER NO.8

I am happy to report that Serious Kit's philosophy of class "A" amplification is making new friends all over the UK and abroad. SUGDEN are currently selling more of their Symmetra Mono-Block amplifiers than they can make, this is obviously keeping them very busy indeed. If you haven't yet heard these 40w.p.c. devices I strongly suggest that you book a demonstration as soon as possible. You may have to wait a week or so to own a pair, but I'm sure that it will be time wisely invested (not to mention the money!) Although they are only 40w.p.c. do not underestimate their ability to drive real loudspeakers to more than adequate levels. At SERIOUS KIT we have used these amps with great success partnering them with any PRO-AC range. This is one of those marriages that is made in heaven, and you will find it very difficult to better a system using this combination at any price! The new PRO-AC RESPONSE 2.5 loudspeaker is a particular good match, as is the RESPONSE 1.

Get in the queue immediately to book your audition, either here or at home, this is an affordable combination to take on and beat all the other more expensive alternatives! AUDIONOTE continue to cause shock and amaze me how loud a 9w.p.c. valve amp can go! but in my humble opinion it is a much surer sign of quality to see (hear) how quietly it will play! This is an important issue, as I'm sure most of us have occasion when loudspeaker power level is required. This is where true class "A" amplification comes into its own. QUESTION: Does your system only sound right at a specific volume setting? by this does the bass disappear below this setting? consequently, docs the sound get-hard and glassy above this "magic" setting? Can you listen to the system for more than a couple of hours? If you are recognising these symptoms it is definitely time to try a class "A" amplifier. SERIOUS KIT has the best available to demonstrate. Please do not under estimate this type of amplifier, you must hear it for yourself, all I will say (stress) is that the differences are radical.

One of the comments that I keep hearing from clients, concerns the fact that for years they have been chasing their tails looking for the right system. Often they account for all the equipment they have owned, it would purchase a most respectable system today. This is why I always say it costs less to get it right the first time, rather than spending hard earned cash on sideways moves or on tweak products that work for all of five minutes. A matched and carefully optimised system is an all too rare finding these days! perhaps it is because there is so much equipment available! Certainly working your way through the jungle will cost a fortune, if there is an absolute sound, there may be more than one way of obtaining it. That is why SERIOUS KIT only deals with a handful of suppliers. SERIOUS KIT can supply a properly calibrated system that unlike most hi-fi, will create the illusion of music reproduction in your home!

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Joan Baez

Diamonds & Rust

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Sonny & Brownie

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PHILADELPHIA JERRY RICKS

Empty Bottle Blues

There are a few terms that could describe the sound of this album, one of them would be 'in the room'. If you like that relaxed traditional blues, one man, his guitar, and the bare acoustics of a room, then this is for you. For such a simple arrangement there is so much in this recording, but it is the subtlety of air resonating in the body of his guitar the shape of his lyrics this make this simple Radioton pressing, an equal to any audiophile release. LP only £12

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Wrecking Ball

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Over the last couple of months I have been extolling the virtues of Sugden class A amplification. Now allow me to introduce you to their "grade A" digital equipment.

Starting at £699 for the Optima integrated player and rising to over £3200 for the PDT 10 transport / AU 51 DAC combination, the Sugden range is larger than many people appreciate.

The Optima CD player received a glowing review in last month's Hi-Fi World yet has already undergone an upgrade to the analogue circuits. There has been no alteration to the price. It says much about Sugden that they did not use the review to "trumpet" a new product. This lack of opportunism perhaps goes some way towards explaining why so much of their range remains a secret. Suffice it to say that the improvements are not subtle (unlike the player itself) and that the Optima represents an entry point for serious digital reproduction. It is an almost-budget player that an audiophile can live with.

It gets better, though!

The £1600 SPA-1 / SDD-1 two box player has impressed many listeners with its "vinyl-like" quality. As those who have heard a good turntable appreciate, the dynamics and sound stage of an analogue system are at least as impressive as any lack of "glare" or hardness. The Sugden combination offers a wealth of musical information without resorting to the rather self-conscious style of "digital detail retrieval devices" that impress many. The sound stage is vast (and deep), the dynamics breathtaking and the lack of aggression a revelation.

Both the transport and DAC are superb products in their own right but the combination most definitely offers more than the sum of the parts.

For £1100 the SOT-1 integrated player offers the same basic electronics in one box. It misses out the undoubted benefits of separate power supplies but offers a peerless performance at the price.

These products represent the entry level for serious music reproduction. They come from a specialist manufacturer who actually designs and builds from scratch (many don't). There is the option of cost-effective upgradability from the Optima to beyond the SDA / SDD level. This is not via plug-in boards but through "proper" circuit board and transport replacement.

Come and have a listen. Please feel free to give me, Alastair Gardner, a call.

Oh, and since this is effectively the new year issue, have a happy 1996.
Hi-Fi World

NAIM/LINN BUYSELL, 52, CDS, 250, 135, 140, HICAP, ARO, 72, 82, ETC
T El BOB 01362 819732

LINN EOKOS (Full rebuilt with new arm and bearings £95 Mk1) £150; 2009 (LP 1213 Black (Circles 395) £350. Nam: Prefix (6/95) £225; Armageddon 950 (395) £1.50; all mint cond. - Tel: 01765 410925 (Avon)

MAGNEPLANER MGI.5 QR mint condition, £850; boxed. Tel: 01952 523747 (Dave)

OLD BUT LOVINGLY cared for Linn Isotrack (Waltham DSL 94) on Russ Andrews Turntable with Naim A5 cable. Brand new and immaculate house price £450. Tel: 01525 815008 (Bed)

FURUKAWA FA.2010 Interconnect cables £75, Pioneer F-45L tuner £95. Both items boxed and in perfect condition. Tel: 0973 245501 (days) 01925 824904 (Ev)

TWO NAIRN NAP565s, 1996, £100 each including sales prices and VAT. If possible, list price, however, £150. Tel: 0191 41 66884 (Washington Tyne & Wear) or weekends)

TWO NAIM NAP250s, 1994, £1100 each including postage. SBLs (black, passive) £150 each (new £225), £750 each, modernised £220. EL84 power amp extensively serviced and fitted with new 20 watt plus amp. Serviced and boxed, excellent £225. Wanted: old 100 watt plus amps.

LINN M40 £1000 mint, with Roksan Q4 £500. Wanted: Linn or Quad someone from the 60s-70s. Give me a firm contact number, please. Tel: 01922 691553

TREAT YOURSELF THIS XMAS Revok KRM1200 power amp. £750 o.n.o. Siltech and Translucent silver finishes. Wanted: old Quad 405 Mk2 late series.

Various arms & cartridges; Naim IBL speaker; Nytech active crossovers. Wanted Nairn, Linn or Quad £150. Tel: 01990 550 534 or 01999 550 534

PS AUDIO PHONO pre-amp, switchable loading £95; Jelco Float headphones £55; handmade CD £20, £1900 400 CD 200. Ab quite boxed. Wanted: early Revo; Manual for Mozart turner and £1800 headphones - Tel: 01208 704 488

KEF REFERENCE 146db, Teak finish, complete with Stand. Sand filled and fitted with spikes. Classic speakers in excellent condition. Tel: 0181 660 1141 (Surrey)

P.S. AUDIO 4.4.4 pre-amp, Active/Passive MCMH, Better than an Argus/OV. £1000, 4 speakers, £500, £2000, £500 each, one of those £1000. Show me the pictures. Tel: 01372 552 633 (Cheshir)

CLASSIFIED ADS

CLASSIFIED ADS

CLASSIFIED ADS
**NEW IN THIS MONTH**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
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<td>CAVEL AMATI SPEAKERS TVWIN MOUNTED PAIR IN OAK</td>
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Tel: 01582 701 953 (Uxbridge)

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Tel: 0120 584 517 (Essex)

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EXPERIENCED AUDIO JOURNALISTS DESCRIBED ONE OF OUR SYSTEMS AS: "GOOD ENOUGH TO REPRESENT THE COUNTRY" (Hi-Fi Choice, Nov '95.) ANOTHER AS: "SO REAL IT MAKES A MODDERY OF CONVENTIONAL STEROE" (Jon Kettle. Audiophile Feb '95) QUITE POSITIVE ENDORSEMENTS "A SENSE OF SHAPE AND SUBSTANCE TO MUSIC THAT USUALLY ONLY LIVE PERFORMANCES ACHIEVE" (Jason Kennedy. Hi-Fi Choice April '95) INDEED OUR MOST MODEST SYSTEM HAS BEEN DESCRIBED AS:... "SOBERING...AN UNRENNABLE ABILITY TO SUCCEED YOU IN THE MUSICAL EXPERIENCE" (Paul Messenger Hi-Fi Choice Aug '95.)

THESE COMMENTS SPEAK VOLUMES FOR THE DEPTH AND BREATH OF EXPERIENCE WE OFFER, BUT WHAT IS PERHAPS MORE IMPORTANT IS THE QUALITY OF SUPPORT AND SERVICE WE PROVIDE WHETHER YOU ARE A FIRST TIME BUYER OR A SEASONED AUDIOPHILE YOUR CONTACT WITH US WILL BE REWARDING, STIMULATING AND SECOND TO NONE.

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The following secondhand stock is available this month:

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<tr>
<td>TOCA class A single ended amplifier (last one) (£2000)</td>
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<td>Audio Innovations 12 preamp (boxed unused) (£749)</td>
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Audio Innovations 2nd Audio triode monoblock

Amps (ex dem as new)

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<td>Leak Trachelough 3 500 w, studio 12 decoder (totally original, unmarked)</td>
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<td>Dal 103 Loudspeakers Stand Mounted 2 way Black</td>
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<tr>
<td>Oracle Delphi Turntable (excellent condition)</td>
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<td>Castle Durham Loudspeakers (mint condition) Black</td>
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<tr>
<td>Alphonse HS 100 Tonearm VHDural Wired (mint condition) (£595)</td>
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<tr>
<td>Leak Stereo 20 Valve Amplifier (excellent condition)</td>
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- **Meridian 7 Series 100 Series**
- **Meridian 203 DAC**

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WANTED: ACUSTIC RESEARCH 51T speaker £100. Tel: 01442 874 749 (Berkshamstead).

MERIDIAN 208 CD pre-amp £125. Tel: 01227 710 605 (Yorks). CONCORDANT- QUAD power amplifiers, mint condition, completely refurbished, new components, output 3 watts £495, Audio Research D10 power amplifier, 100 watt output, new £1,000, accepted £650. Can demonstrate. Tel: 0181 882 818.

NAIM 2A, Superb as new boxed £350. Albarry PP1 £225. Wanted: Ruark Turtles, Sabres, 2 Mission 53 or similar, Upgrade 51 or 20, Recent Valente LP112. Tel: Chris 01792 205 590.

ION ORELIS-3 pre-amp X 3. £1200. Excellent sound, mint condition, Teak finish, £1350 o.n.o. (£250 for the range compact disc player with separation a possibility but price will depend on unit). Tel: 01526 481 076 (Dublin).

5000D CD power £150. Immaculate condition. First to hear £750. Tel: 01384 637 230 (East Kent).


LNN L1P2 TURNABLE (complete with mains Reference cable, Vailatha ITLV. K9 new stylus. Serviced May '95, Immaculate condition. First to hear will buy £750. Tel: 01635 247 739 (Dublin).

Linn LP12 (complete with mains Reference cable, Vailatha ITLV. K9 new stylus. Serviced May '95, Immaculate condition. First to hear will buy £750. Tel: 01635 247 739 (Dublin).

TEAC P500 CD transport, VRDS mini, Texas D500 multi DAC mint condition finish with manuals and coaxial and optical connections £450 o.n.o. Tel: 0161 234 193.

ELAC K1RN Pre Amp £690, TEAC CDX250 £500. Wanted: K9 cartridge. Two Target tables all in excellent condition £450. Tel: Terry 01242 437 193 (Worcestershire).

WANTED: P lips speakers, Rosewood with dedicated stands, condition boxed £150. Tel: 01452 611 917 (anytime). NAIM NAC 53 pre-amp sound style £330. Naim NAP 90 new style £350. Tel: Tim - Page on No. 9141 119 432 (please leave a contact tel. no.).

EXPOSEUR XA AMP FOR SALES: boxed and in mint condition. Tel: 0114 268 6570.

LNN SONDPER LP12 Lindsey, £100. Tronika combination for sale together with Mackie Audio MD and stands. Little used from new. Second a possibility but will make a pro-rata plus the give away figure after the customer, £300 £350 required for the complete system. Tel: 01889 302 270 (Staffordshire).

LNN L1P2 TURNABLE (complete with mains Reference cable, Vailatha ITLV. K9 new stylus. Serviced May '95, Immaculate condition. First to hear will buy £750. Tel: 01635 247 739 (Dublin).

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WANTED: EPOS EL speakers, dedicated stands; Garrard 301 turntables, boxed £150. Tel: 0114 268 6570.

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