DIGITAL CASSETTE
Philips DCC900 recorder fully reviewed

COMPETITION
win a Nakamichi CR-7E cassette deck

KRAKEN
a new amplifier from Alchemist
PHILIPS THE
1963 COMPACT CASSETTE. 19

DIGITAL COMPACT CASSETTE IS HERE.

Philips DCC is a giant leap forward for earkind. At last you can have the digital sound of CD combined with the convenience of cassette.

And no, that doesn't mean you need bury your old tape collection. On a Philips DCC you can play all your old tapes as well, so you can bring your music to life without killing off your old favourites.

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- Covent Garden Records, WC2 071-379 7635
- Deans, W2 071-723 4630
- Desgate/Goodyear, E1 071-247 0567
- Francis, Streatham 081-769 0466
- Harp Electronics, W1 071-636 4611
- Hi-Spek, N3 081-349 1166
- Hi-Way Hi-Fi, W2 071-262 9267
- Hyper-Fi, Berkhamsted 081-591 6961
- Studio 99, NW6 071-624 8855
- Tempo, Kingston 081-547 0404
- Woolfsons, Ilford 081-533 2597

South East
- Adams & Jarrett, St. Leonards on Sea 0874 2437165
- Britain & Hobbs, Sheerness 0795 665 551
- Chew & Osborn, Epping 0992 574242
- Jenners, Tenterden 0880 63230
- Massey, Feltham 081-894 1138
- Sevenoaks Hi-Fi, Sevenoaks 0732 459555
- Smythe & Barrie, Eastbourne 0223 29192
- Standens, Tonbridge 0303 56860
- VH Hi-Fi, Folkestone 0303 56860

East Anglia
- Hughes TV/Audio, Lowestoft 0502 585 611
- Levent & Ward, Colchester 0206 210 844
- McCullough, Cambridge 0223 426766
- Rose & Wright, Bury St. Edmunds 0284 766 586
- R.C. Snelling Ltd, Norwich 0603 712 262
- Wreathers, Kings Lynn 0553 774 037

South
- B&B Hi-Fi, High Wycombe 0494 535910
- Barony Hi-Fi, Aldershot 0252 20728
- Burden Electronics, Swindon 0793 490613
- Churcher Audio Video, Worthing 0903 230558
- Cosmic, Weybridge 0932 854 522
- Hemmings, Farnborough 0252 520 472
- Hickmam, Swindon 0793 537 971
- C.F. Lake, Slough 0753 538287
- Mid-Sussex Electronics, Burgess Hill 0444 242 338
- Power People, Riecast 0869 230280
- P. Shoe Television, Farnborough 0483 503606
- Sinclair Youngs, Basingstoke 0252 28623
- Suttons, Salisbury 0732 327171
- Tru-Fi, Redhill 0737 766 128

Wales and West
- M.A. Buzzard, Banbury 0295 250 036
- Horne of Oxford, Oxford 0865 511 241
- Hutchinsons TV, Chepstow 042 373 012
- E.H. Moss, Bath 0225 465 085
- Radford Hi-Fi, Bristol 0277 280 878
- Radiocraft Sons, Cardiff 0222 231 166
- Paul Roberts Hifi, Wiston-Super-Mare 0934 621 204
- T.E. Roberts, Wrexham 0978 364 404

South West
- Central Radio Services, Burnham on Sea 0278 782 112
- Chelton Hi-Fi, Cheltenham 0803 606 853
- Dorchester Hifi, Dorchester 0305 264 977
- ETS, Helston 0326 793 801
- Ford & Sons Electrical, Sidmouth 0793 312 501
- Hi-Fi, Bournemouth 0752 469711
- James TV, Bristol 0271 43731
- Manning Audio, Yeovil 0935 79361
- Movement Audio, Paule 0202 730 865
- Upson Electronics, Poole 0800 551 329

Midlands
- James Beattie, Wolverhampton 0902 22311
- Geoff Hill, Stourbridge 0384 395 952
- McCormacks TV & Video, Shrewsbury 0743 368972
- Noam Hi-Fi Vision, Birmingham 021-633 4944
- Queen Park Radio, Birmingham 021-427 4008

PHILIPS

World Radio History
encompassing all music tastes from light opera to heavy metal. And as there are over 50 manufacturers already committed to this new format, all your favourites will soon be available as well.

DCC is available as part of the superb new Philips 900 Series hi-fi, stylishly designed and offering true single remote control.

So if you want to experience this, the biggest development in audio entertainment, get down to your local Philips dealer from mid-September.

THE FOLLOWING DEALERS:

D. Robinson, Burton 0296 85424
Universal Electronics, Wolverhampton 0002 23741

East Midlands
Eric Alcock, Stoke 0782 774 395
ENL Audio Visual, Nottingham 0602 786 919
Forum Hi-Fi, Nottingham 0602 622 150
Manton Electric, Derby 0332 48369
J. Ratby, Leicester 0332 39454
F.L. Smith Electrical, Chesterfield 0246 823 167
Ray Townsend/Prondis Ltd, Crewe 0600 43369
Stuart Westmoreland, Melton Mowbray 0664 63366

North West
S. Bakewell, Perwe 0768 62187
Beaver Radio, Liverpool 051-709 9898
Brooks Music Centre, Whitehaven 0946 692 166
Clearstone Hi-Fi & Video, Bolton 0204 31423
Martin Davies, Warrington 0925 30251
Kenneth Gardnes, Lancaster 0526 44328
Harry Gallick TV Centre, Colne 0282 813 309
Goodrichs, Preston 0772 57528
Goswells Stores, Oldham 061-624 2237
Hamlets Radio/TV, Stockport 061-406 6155
Hi-Fi Centre, Barrow in Furness 0229 838757
John Littlef, Warrington 0925 812 963

Misons Sound & Vision, Carlisle 0228 22 620
New Dawn Hi-Fi, Chester 0244 321779
Partingtons, Isle of Man 0624 676 767
E.A. Stevenson Video, Liverpool 051-420 8054
Tomorrow's Studio, Warrington 0925 601354
Peter Lyon, Carlisle 0229 25891
Walkers TV Manx, Isle of Man 0624 675 310
Paul Whitmore TV, Isle of Man 0624 677 007

North East
Action Acoustics, Redcar 0642 480723
Amrik Electronics, Bradford 0274 722 530
J.G. Windows, Newcastle 091-232 1356
Jones, Leeds 0312 40666
G.F. Monders, Grimsby 0472 351391
Miller Brothers, Doncaster 0302 321 333
Scarborough Hi-Fi, Scarborough 0723 374 347
Thompson Bros., South Shields 091-456 2551
Yeoman & Russell, Altrincham 061-941 3131

Scotland
W.H. Couper, Blairgowrie 0250 873483
F.B. Craig, Hamilton 0699 882 029
Carl Dyson, Carlisle 031-554 0355
Hi-Fi Corner, Edinburgh 031-652 1885

Bill Hutchinson Hi-Fi, Glasgow 041-248 2557
Laser Audio, Kilmarnock 0563 40292
A. McKenzie, Stranraer 0776 2818
John McLachlan TV, Paisley 041-889 3026
Bruce Miller, Aberdeen 0224 592 211
Music Room, Glasgow 041-332 3012
Robert Ritchie Hi-Fi, Montrose 0674 73765
Robert Smith, Glasgow 041-248 5242

Northern Ireland
Audio Times, Belfast 0232 238 495
C.S. Supplies, Belfast 0232 241 181
Lisnagore, Donore 0762 881628
Nicholson Bros, Radio, Ballymac 0266 49616

Channel Islands
Fortunes, Jersey 0534 32549
Teleskil', Guernsey 0481 56508
and at selected branches of Dixons, Currys Superstores, House of Fraser, John Lewis Partnership and other leading department stores.

Some of the above dealers will stock DCC and Series 900 products in a number of stores. Please telephone the given number for a dealer near you. Or call the DCC Information Line on 0800 212 643.
The new Naim CDI

Getting things right the first time is a tradition at Naim Audio.

Which is why our first CD player, the CDS, has received such worldwide acclaim.

We are now delighted to introduce a second model, the Naim CDI (shown here).

The Naim CDI incorporates all of the technological innovation and expertise gained from the development of the CDS. Designed to be the best in its class and devoid of gimmicks, here is an affordable player capable of providing true musical enjoyment.

Our efforts are bearing fruit.

It's a Peach

Now you know what's in a Naim.

Naim Audio, Southampton Road, Salisbury SP1 2LN, England.
Telephone: (0722) 332266
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COHERENT

MPI Electronics have come up with a new "Coherent Source" loudspeaker, the Thiel Model CS3.6 at £3,495 per pair. Beneath a 3" thick sloping front baffle lies a complex cabinet design with 1" thick walls and extensive internal bracing.

A three-unit design, the tweeter is the same 1" metal dome used in Thiel's flagship loudspeaker. The other two drivers are a 4.5" mid-range built on a cast magnesium chassis using a unique double-surface, air-core diaphragm with a short-coil/long gap magnet system. This design is said to practically eliminate cone break-up and provide an exceptionally clear response. The woofers are a 10" driver with a rigid aluminium diaphragm with a unique magnet system using a specially shaped centre pole and heavy copper rings to provide a symmetrical and stable magnetic field. This operates in conjunction with a bass radiator. Floorstanding, the Thiel CS3.6 is 48.5" tall, 12.5" wide and 17" deep. Standard finishes are Amberwood and gloss black lacquer, with others available to special order.

Contact MPI Electronic UK Ltd., Wood Lane, Manchester M31 4BP. Tel: (061) 777 8533.

NEW AMPLIFIER FROM NEW NAME

Waytronics Power systems, designers and manufacturers of custom power supplies, are soon to enter the hi-fi industry with a low cost integrated amplifier. To be marketed under the 'WPS' name, it will feature five inputs, including two tape circuits, and 50watt bi-wirable outputs. Next year a high-end multiple-facility separates system will join the line-up.

Contact Waytronics Power Systems Ltd., Godinton Way Industrial Estate, Ashford, Kent TN23 1JB. Tel: (0233) 642276/642976.

FRAMEWORKS

Frameworks have added to their range of tubular-framed equipment stands with the H100 isolation platform and H175 stacker. The braced supports are finished in satin black as standard with either textured black MDF or 10mm toughened grey glass shelves that are individually-adjustable. Each unit is spiked, and the uprights will be filled with damping material of the owner's choice. Prices range from £85 for the H100 with laminated MDF shelf to £275 for the three-shelf H700.

Contact Frameworks, Arrow Consultancy Ltd., Unit 56, Eurolink Business Centre, London SW2 1BZ. Tel: (071) 924 0633.

MORE DYN AUDIO KITS

Wimslow Audio have introduced two new kits using Dynaudio drivers. First is the tall 1.5m high floorstanding four-way Finale, whose driver-less cabinets featured in our Chesterfield Show report recently. Its bass driver, complemented with a passive radiator, is the Dynaudio 30W-100, while the mid-range is covered by two units, a 15W-75 and the dome D-52AF for the upper-mid range. Higher frequencies are handled by Dynaudio's new Esotec D-260. The crossover uses high grade components, with top quality metalized polypropylene capacitors. As a kit, including all drivers, crossovers, terminals, damping, screws - and even glue - the Finale costs £1,150. Unusually for Wimslow, the cabinet, instead of being supplied as a flat-pack, is supplied ready-built for an extra £250.

Second of Wimslow's kit offerings is the Gemini, also with Dynaudio drivers, using an arrangement developed by American designer Joseph d'Appolito. Fundamentally, this places the tweeter centrally between two drivers, in this case a pair of Dynaudio 15W-75s which have a massive 75mm voice coil in a speaker with an overall diameter of 150mm. Tweeter is again the Esotec: D-260. The Gemini's cabinet, a reflex-ported design and supplied in flat-pack form, consists of 25mm MDF with internal braces. The basic kit of drive units, crossovers, damping, glue, screws - everything required, in fact, including instructions - costs £570; including flatpack cabinet, price is £625.

Contact Wimslow Audio Ltd., Wellington Close, Parkgate Trading Estate, Knutsford, Cheshire WA16 8DX. Tel: (0565) 650605.

PERFECT SOUND FROM GOLDRING

Goldring's 'Perfect Sound' range of accessories includes various spikes, cones and feet for hi-fi equipment of all types, and, for vinyl junkies, two substantial and heavy-looking weights for disc-stabilization finished in either black (£21.95) or gold-plated (£29.95). Cones and spikes, equally beautifully finished, for use under hi-fi separates, are height-adjustable and also available in black and gold. Packs of six cones are £24.95, eight for £32.95; spikes are £19.95 for six, or £17.95 for eight of the non-adjustable variety. Contact Goldring Products Ltd., 8 Greyfriars Road, Bury St. Edmunds, Suffolk, IP32 7DX. Tel: (0284) 701101.

ARCAM CLOCK IN WITH BLACK BOX 5

Arcam's new 'clocked' Digital-to-Analogue converter, the Black Box 5, is now available, price £449.90. A new very stable, jitter-free master clock in the converter allows Arcam's Delta 170.3 transport (reviewed in July) to be 'slaved' from the converter. Sonic benefits are said to be improved focus and increased subtlety. Black Box 5 incorporates a hybrid 18-bit DAC incorporating multi-bit and bitstream technology based around the new Burr-Brown PCM67 chip. This combines, Arcam say, the dynamics and drive of multi-bit systems with the low linearity of a 1-bit converter. The upper 10 bits are multi-bit, the lower eight single-bit. Black Box 5 will accept digital sources (with sampling rates for CD, DAT and DAB) through either a 75 ohm co-axial socket or Toslink optical, with absolute phase inversion in the digital domain. Outputs are via gold-plated phono sockets. Owners of a Black Box 3 can upgrade to a Black Box 5 by having the plug-in DAC board and rear panel exchanged by an Arcam dealer or the factory at a cost of £250. Black Box 3 itself, using Arcam's differential bitstream technology, will remain in production until at least 1993, but at a reduced price of £299.90 from 1st August 1992.

Contact Arcam, Pembroke Ave., Denny Industrial Centre, Waterbeach, Cambridge CB5 9PB. Tel: (0223) 861550.
**MAPLIN VALVE KIT**
Maplin Electronics are offering a valve power amplifier in kit form, delivering 95 watts in Class AB1. Best news of all is that the Velleman K4000 Stereo Tube Amplifier costs £499.95. Claims for its sound quality include “a smooth top end, open mid range and deceptively powerful bass” with a “tangible holographic sound stage.” Full specifications are on p581 of the Maplin 1992 catalogue, which costs £2.75 from W.H. Smith, local Maplin branches or £2.95 through the post.

Contact Maplin Electronics plc, P.O. Box 3, Rayleigh, Essex SS6 8LR, Tel: (0702) 552911.

**REAL MUSIC SPEAKERS**
RMc have produced a compact transmission line loudspeaker; the RM30T, using highly respected Dynaudio drive units, which, the Real Music Company say, makes the design exceptionally dynamic and fast. Price will be around £1000. Contact Real Music Company, 37 Morell Avenue, Horsham, West Sussex RH12 4DD. Tel: (0403) 63710.

**CREEK SPEAK**
Creek’s long-awaited “budget audiophile” loudspeaker, the £119.90 CLS10 has been launched. “It’s a gutsy little performer,” says Keith Rodgerson, Senior Product Engineer, who also designed the CD60 Compact Disc player. A compact reflex design, which can be used near rear walls, the CLS10 has a custom-designed bass driver with a precision vacuum-formed polypropylene lightweight cone. The tweeter is magnetic fluid damped and carries an exclusive varnish coating to damp unwanted out-of-band resonance, claimed to give cleaner transient attack without ringing or ‘spitching’. Creek Audio Systems, Rosehall Industrial Estate, Coatbridge, Strathclyde ML5 4TE. Tel: (0236) 20199.

**MAY’S OUT, SO’S THE KLOUT**
Linn’s new 80watt per channel Klout power amplifier is, the company reports, “designed to be the LP12 of power amplifiers”. The design uses ‘surface mount’ components for both improved audio performance and heat dissipation. Protection circuitry protects the Klout against current overload, short-circuits and overheating. Outward looks match Linn’s other recent products. Available from August, price will be £1694. First impressions from one of our spies suggests it’s a strong addition to Linn’s amplifier range. With Kans it produced a more open sound, adding an octave to the bass and keeping a very firm grip on the low end.

Our spies have also noted that Linn are replacing their successful moving coil cartridges, the Asaka and Troika, in the wake of the discontinued Karma. The replacement cartridges, respectively named Klyde and Arkive, will retail at roughly similar prices to the existing Linn cartridges. As yet, little has been disclosed about them, although a prototype Arkive has been spotted, without its removable body, a la Lyra. Reputable sources suggest that it is a considerable improvement over the Troika, although this is unsubstantiated at present.

The existing cartridge trade-in scheme is to be discontinued; however, when stocks of the Asaka and Troika are exhausted. At present, there are no plans to reintroduce the trade-in scheme with the new Klyde and Arkive.

Linn Products Limited, Floors Road, Waterfoot, Eaglesham, Glasgow G76 0EP. Tel: (041) 644 5111.

**SYMPHONY SUITE**
Erricks of Bradford, recently taken over by Cleartone, have opened the ‘Symphony Suite’ on the first floor, “the finest hi-fi department in Yorkshire,” they say. Tel: (0274) 727611.

HI-FI WORLD SEPTEMBER 1992
After making a loss last year, TGI, the parent company of Tannoy, TGI IN PROFIT, Technology's Unisis integrated. We apologise to both Tube Technology and to Unisys Computers for any misunderstanding caused. A courtesy bus will run from Hatton Cross Underground station on the Piccadilly Line to and from the Heathrow Penta Hotel during the public hours. Admission will be £2.50.

**MERIDIAN OFFER**
Meridian, now restructured after a management buy-out, offer customers a two-year guarantee on equipment purchased from a recognised Meridian dealer from 1st June 1992. Throughout July, August and September, customers buying a new piece of Meridian gear will be given a discount voucher worth 10% of the purchase price which can be used against the next buy. Vouchers will be valid until 31st December 1992.

**ROTEL REDUCTIONS**
With sterling now stronger against the dollar, Rotel have taken the opportunity to reduce prices. A few examples include the RA940BX 40watt integrated amplifier, now down to £199.95, the 60watt RA960BX at £249.95, the RCD955AX multi-bit CD player now £229.95 and the Bstrem RCD965BX down to £279.95. Gamepath Ltd., 25 Heathfield, Stacey Bushes, Milton Keynes MK12 6HR. Tel: (0908) 317707.

**DELTEC DOWN, BUT NOT OUT**
Deltac Precision Audio Ltd. ceased trading on 12th June, but were reborn on the 25th as DPA Digital Ltd. DPA will be manufacturing and supplying the same Deltac range, and will honour existing Deltac product guarantees. DPA Digital Ltd., Unit 7, WillowBrook Technical Units, Crickhowell Road, St Mellons, Cardiff, CF3 0EF. Tel: (0222) 795621.

**MATSUSHITA DCC**
Matsushita, parent company of JVC and Technics, will be releasing a DCC player soon in Japan at a price of 135,000 Yen. A prototype was displayed at the Technics/Panasonic trade show a few months ago. Specification is rife that it will be marketed in Europe not long after Philips distribute their DCC900 (see this issue) in September. Price would convert to around £600.

**ADCOM COME IN TO UK**
Celestion have announced that they have won exclusive distribution in the UK of American Adcom electronics. Until now little-known in this country, but a big name in the States, Adcom make high quality amplifiers, pre-amplifiers and power amplifiers. Adcom's amplifier range starts with the competitive £299 GFP345 pre-amplifier and GFP535II power amplifier at £350. Up at the top end is the awe-inspiring GFP666 monoblock which delivers 300 watts. Celestion International Ltd., Ipswich IP3 8JP. Tel: (0473) 723131.
WIN
FURUKAWA
FA-2010
BALANCED
ANALOGUE
INTERCONNECT
CABLES
(1 metre pairs)

We are offering a little incentive to encourage readers to fill their fountain pens and break open a new notepad. The writer of the most interesting or funniest letter will receive a free set of Furukawa FA-2010 “balanced analogue” interconnect cables, worth £95. These are the cables we have recommended in the past.

ELECTRIFYING LETTER
Here’s a message from Eartha Kitt the patron saint of hi-fi, a real humdinger.

Safety - In the little old town of Electron, way out beyond anode land, lies the grave of a hi-fi mechanic who lies earthed at his positive end.

To give him his due he had brains but he was just a bit careless one day when connecting his set to the mains.

The moral of this little story is plain for all to see, if you don’t want a short circuit to Glory, don’t frolic about with H.T.

(Anon)

Send your letters to:
Hi-Fi World Letters
Page, 64 Castellain
Road, Maida Vale,
London W9 1EX.

He has been missing since Faraday. What seems most likely is that he stole an A.C. motor. This was of low capacity and he is expected to try and change it for a megacycle and return ohm by a short circuit.

He may offer resistance and is a potential killer.

(Anon)

Francis B. Rowland,
Melton Mobray, Leics.

PLASTERED GARRARD
I would like to say how much I enjoyed Noel Keywood’s article in the July edition; in particular his comments on the Garrard 301 or 401 turntables and also the article on Radlett Audio.

I have had a Garrard 401 since approximately 1968. For a ‘401’ to realise its full potential the deck should be mounted in a substantial ‘board’ i.e. 1” thick steel plate, slate or marble.

My 401 turntable is mounted in a 3/8” thick steel plate. To the underneath of this has been poured a Plaster of Paris mix to a depth of about 4”. The idea of this is to ‘slug’ any vibrations from the motor assembly. Credit for the the Plaster of Paris modifications belongs to Peter Soper of Slate Audio who gave me guidance on this matter, and who incidentally owns and uses a 401 turntable.

The whole plinth should then be mounted on squash balls to give compliance, preferably on a substantial wall shelf.

The deck itself requires routine maintenance as laid down in the instruction manual. Modification can include a hard turntable mat and clamp.

The tonearm is an Alphason Zenon MCS with (at the moment) a Mayware cartridge. The rest of the system is as follows: Leak Stereo 20 power amp, Audio Innovations Series 200 preamp, Leak Delta FM tuner, Tannoy 12” HPD loudspeakers in Chatsworth enclosures.

M. Bickley,
Birmingham.

The Japanese have been buying 301s and 401s for years and mounting them in extraordinary plinths. It seems we never did pay the attention to these turntables that they possibly deserved. NK

MONOTONE
I feel obliged to reply to Nicen Handsome (Stereo Pictures)

The goal of hi-fi is a neutral tone with no artificial coloration. Please continue to have the same ideal for your pictures.

Monochrome Rules - O.K.

Andrew Borland,
Wimborne, Dorset.

We shall maintain our single-ended, directly-heated, horn-loaded mono photographs. AS

Continued on page 72...

Hi-Fi World Letters
Page, 64 Castellain
Road, Maida Vale,
London W9 1EX.
Dear Sir,

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

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

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

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

Until then. Thanks again for everything.

Regards

Bob Murdoch
Feedback from Alan Sircom

sircom's circuits

"I have of late, but wherefore I know not, lost all my mirth." Alright, starting a column with a quotation from Hamlet is somewhat pretentious, but if I'm honest, it describes my recent feelings toward hi-fi, up until this month.

Somehow along the road, I'd grown jaded and tired of constantly changing and changing my system for reviewing. It was interesting to see how these components and tweaks changed the sound of my system. But basically the system was no longer giving me musical pleasure. As a reviewer, this was very disturbing.

My thoughts raced. How could I inject life and musicality into my system? Was this some form of Linn throwback, or had the Pink vs. Voyd battle left me shell-shocked?

In order to overcome this confused state, it was necessary to more or less begin again in hi-fi. This 'system fatigue' meant that I was watching more television than listening to hi-fi (always a bad sign - "Red Dwarf" I can accept, but you know there is a problem when you turn off Mahler to watch 'Wheel Of Fortune'). This made it easy to purge myself of hi-fi completely and start from scratch.

Favourite Track Craving

After about a week of deliberately not listening to music, I began to crave my favourite tracks once again. Before the craving got so bad that a Dansette would sound like high-end, I began to rebuild my system, listening to as many alternatives as possible, beginning at a comparatively low price level.

It started one Saturday with a simple system consisting of a Rega Planar 3 turntable, Linn K7 cartridge, Naim Nait 2 amplifier and Epos ES1 loudspeakers, which would cost around about £1,000 all in. This system reeked of musical enjoyment and listenability. So much, in fact, that I was frankly embarrassed by my own system's performance. Mine had the edge in detail, control and had a far deeper bass performance, but in fundamental terms, it outperformed my own system at the time.

I felt that, although the little Nait huffed and puffed with the ES1 I at high levels, the musical magic was there in abundance. Moving over from a Rega to an LP12 helped things greatly, adding detail and sophistication, although I would have preferred to put the Pink Triangle's balance of virtues into the system.

This left me bent, but rediscovered listening criteria better. There are a number of other turntables that could offer competition to the Anniversary, yet remain untested at the present; these include the Notts Analogue Mentor, the SME Series 30 and the VPI TNT. These turntables have impressed me in systems that I have heard elsewhere, but they would have to be substantially better than the Anniversary in my system to justify their higher cost.

At this level, the cartridge can make all the difference. It can make or break the turntable. At present, I have found a number of cartridges that are a good match for the turntable. In current production, both the Denon DL-304 and the Lyra Lydian tested in this issue. Until well, although the system became magical when the Lydian tracked the groove.

This turntable combination (neutral Pink and SME, with a musical Lyra cartridge) has successfully seen off a variety of similarly priced turntables. Until very recently, however, I have had less success with amplification.

A number of integrations, pre and power amplifiers have passed through my system, all of which have proved interesting, yet still I return to the John Shearme Phase One. It may not have quite the grip that the Naim amplifiers have over the timing aspects, yet it has a smoothness and refinement; that is difficult to better. Current production amplifiers have been further improved, but I have yet to hear these changes.

Problems Pipped

Surprisingly, it was here my problems began. The Dynaudio Contour 1.8s do not thrive successfully with the John Shearme power amplifier, because of its original difficulties with sub-eight ohm loudspeaker loads. A large American power amplifier from Adcom and an old Pink Triangle Pip II preamplifier were substituted. These drove the DynAudios successfully.

Sadly, the Pip was on a very short leash and had to be quickly returned, once the review was completed. From here the system effectively collapsed. No pre-amplifier in my possession could wake the DynAudios from their slumber. I tried using other loudspeakers with the Adcom, but that was not the answer either.

Eventually, I managed to obtain a second-hand Pip II preamplifier, a three-box device, and from here, the system became music again. Even so, the DynAudio monitor-esque sound can sound lacking in magic - excellant for determining charges in source components, but slightly too dry for some tastes.

Ultimate salvation came from ProAc. Their Little Response One at the moment. It is no use investigating such areas, however, with a base system that doesn't perform properly.

Eventually, I will have to invest in a good Compact Disc player, but both my bank manager and I keep putting such a day off. As with many connected with the audio industry, my bank manager is a keen follower of the business and already has little wax voodoo figures of the manufacturers of high end equipment, just in case.

The Shining

Finally, after a long period of difficulty, the system begins to shine once more. I suppose that I have taken a roundabout route, one that could be far simpler if I had followed a manufacturer's philosophy to the letter. Instead, my voyage of self-discovery has been paved with both epiphanies and pitfalls, but no-one said it would be easy, trying to keep an open mind. As it stands, I believe that my system is now on an equal footing with a self-balancing system, such as the Linn/Naim or Voyd/Innovations/'Snell, but I know that there is more to come •
The Motor Fairs I used to visit at Olympia with my father, long, long ago, left a lasting impression on me. Coming to London in my childhood was a tremendous excitement: all those cars and buses, roaring underground trains and escalators; even jets screaming overhead on their way to Heathrow as you queued to get in. It was another world.

Olympia was also the home of the annual Audio Fair, an event almost as huge and glamorous as the Motor Fairs, even though I wasn't an impressionable child any more when I visited them.

Of all Britain's hi-fi manufacturers, Quad had the most widely recognised and admired image and it was the Quad stand in particular that I remember, probably because their products looked so desirable in every respect; Quad make hi-fi look attractive. So it was Quad I phoned about the date of the last Audio Fair at Olympia, a passing that in retrospect I greatly regret. We decided between us that the last Audio Fair must have been in 1972 or 73 (when, astonishingly it seemed to me, as a novice journalist I was suddenly made Editor of Hi-Fi Answers).

Since that time, the British hi-fi industry has not really been able - and often it has been unwilling - to go out to all those thousands of people - its customers - who'd love to experience the thrill of listening to music through a proper hi-fi system. Curiously, there must be more hi-fi companies in Britain than ever before, yet all the indications are that the market for their products has been steadily declining since the late seventies. That's why I so regret the loss of a large, glamorous and easily accessed national Audio Fair, somewhere people can see all the technology, ingenuity and variety that audio has to offer.

A fair is also a superb place to decide what to buy, and a good day's entertainment as well. Olympia always pulled in the crowds and showed the widest range of goods; not just top end esoterica, nor bottom end midi systems and AV; real hi-fi could be viewed alongside 'audio' (now pretentiously labelled 'hi-fi'). The passing of Olympia was a significant loss to British manufacturers in particular, since they lost their own national showcase event.

The Fair sank because of cost escalation and hassle, largely brought about by the pre-show mayhem caused by 'industrial action' from the stand builders. Hopefully, those days and practices are over.

Now Britain is again going to have a national audio fair, from 16th-20th of September 1993 (yes, next year - not this one!), at Olympia, there's to be a consumer electronics show called Live '93. It's being organised by International who are organising the event. Since they publish the Sun, News of the World, Today, The Times and The Sunday Times, quite a few people should get to know about this little gathering. I hope it'll be every bit as big and glamorous as the Audio Fairs I remember with affection from the past.

Hi-fi has dropped from number two to a buying priority to number nineteen, Philips marketing boys tell us. People now place more importance on getting a new pair of trainers. But just a minute. Do people really not want to listen to music any more? Could it be that life has become so hectic, or superficial, or now possesses so many other options that listening to music is becoming a redundant pastime, less attractive than running around in training shoes, or watching TV or a video?

It would seem almost impossible that an important and enduring part of our culture was apparently withering away. People have always enjoyed music; it transcends every cultural barrier and has existed since man moved from mere existence to a level of civilisation capable of providing the leisure time necessary for art.

The continuing high price of CDs seems to be another source of dissatisfaction that may have dampened people's enthusiasm - or even robbed them of the ability to enjoy music. This is a situation we get plenty of complaints about. Viewed in this light, perhaps it isn't surprising that Britons would now rather buy trainers. Hopefully, with the aid of a large national exhibition, people might once again be able to see how they can improve their enjoyment of music and hi-fi will cease to be such a low priority.

No matter how hard I try, I cannot dissuade some of my friends and colleagues from considering building their own valve amplifiers. Besides my protestations, the main stumbling-block frustrating these would-be constructors is knowing where to start. This month I have finally succumbed. But an article which detailed every stage of a valve amplifier design would not be appropriate in a general hi-fi magazine. So instead, I thought I would consider some of the issues and precautions that readers might like to ponder before spending lonely hours with only a soldering iron for company.

Firstly, let me demolish a few possible misconceptions. The first is that a kit, with easy-to-follow instructions - where all parts are supplied - can be undertaken by an electronics novice. A starry-eyed valve aficionado is in grave danger of running into what I call the PHRASE BOOK PHENOM-ENON. This derives from the all-too common experience when approaching a busy commuter in Frankfurt, Paris or Rome and having your carefully rehearsed phrase greeted with a courteous but utterly unintelligible reply.

Why unintelligible? Because it's given in a language you don't understand. That's why you needed the phrase book! The concept is fundamentally flawed. So it is with kit electronics. Even with all the necessary instructions, unless the kit works first time, the novice constructor is
confounded.

The second conventional wisdom which needs overturning is that construction can save you money. This nonsense, even in a profit-oriented world, manufacturers and retailers are not as greedy as all that. It seems to me that the golden rule where constructors are not as confounded.

Perhaps the most difficult decision is the choice of power output. Aim too low and you're unlikely to be satisfied with your under-engined loudspeakers for long. Aim too high and - especially with valves - you are into the thin-air stratosphere of potentially lethal power supply voltages and blisteringly hot valve glass envelopes. As a rule of thumb, above 35 watts tube amplifiers become frightening. So, if you want to build an amplifier to listen to music loud, if you value deep bass and still wish to live to three-score years and ten, take my advice - use MOSFETS.

In Fig. 1, you'll see a design for a 20 watt Class A beam tetrode amplifier. It's not intended as a guide for step-by-step construction - you'll notice for instance that the feedback resistor is left undefined since this is construction and layout dependent - but it is given as a guide for a sensible starting point for a potential constructor. It is neither too small to be puny, nor too large - or costly or dangerous - for the kitchen table. The choice of the 6L6 as the output valve betrays my guitarist's background This was the tube employed in many of the great guitar amps of the Forties and Fifties. It's a great, and still undervalued, bottle. Like a stubby EL34 to look at, it's a beam tetrode, not a pentode like the Mullard valve. And I reckon the EF86 pentode. This employs an EF86 pentode. This always gives me better results, but it's not cheap. It's worth buying half a dozen EF86's and choosing the best examples by experimentation.

The power supply uses silicon rectifiers. If you're building it yourself, don't listen to the purists: steer clear of thermionic rectifiers, they always require an awkward 5V filament supply. The CZ4 thermistor stops the h.t. reaching valve and capacitor destroying potentials before the heaters have warmed up.

Once again, I must stress that this is a column not a constructional article. But I hope it will help by acting as a springboard for those interested readers who consider building their own amplifiers.

Have fun - all you have to fear is financial ruin and electrocution! Don't say I didn't warn you!

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In Norse mythology, the Kraken was a sea-monster that appeared from time to time off the coast of Norway. Alchemist Products' new £399 Kraken integrated amplifier resembles a mythical beast with its striking projecting side heatsinks and grey-green hammered finish.

Although named after a legendary sea monster, its sinister appearance would probably appeal more to pasty-faced, Sisters Of Mercy-loving 'Goths'. Even though it isn't decked out in funeral black, they will find its lines perfect for customising with cobweb spray. All they need to complete hi-fi 'Gothdom' is a CD player with a stake through its drawer and a pair of floorstanding loudspeakers 'formed like a coffin.'

Because the power supply is separated from the amplifier, the Kraken is quite small, being slightly wider than a Naim Nait 2, but not as high and deep. This power supply is also easily upgradeable, as Alchemist offer a more powerful PSU for the amplifier, with two 120VA transformers instead of only one, for an extra £45.

Even the phono stage - also £45 - is on a modular, plug-in circuit board, to allow the Kraken to be operated as a line-level only amplifier. At the moment, this phono board is for moving-magnet cartridges only, but plans are afoot for a moving-coil stage. All these circuit boards are masterpieces of CAD/CAM circuit design, with minimal amounts of off-board wiring.

On the front panel there is a minimum of controls. To the far left sits an Alps volume control. In the centre, beneath the yellow on/off LED, is the input selector and next to that is the tape selector. There is not...
a wide selection of inputs: phono, CD, tuner, line-level auxiliary, tape and a facility to switch out the monitor circuit altogether. All sources are connected via gold phono plugs, with a pair of simple 4mm binding posts at either side of the rear panel.

The on/off switch is housed in a separate transformer supply box. It’s best left switched on as it takes at least half an hour to warm-up.

The Kraken runs warm, although those bat-wing heatsink fins help to dissipate a great deal of heat. It operates in Class A/B so heat is always going to be a problem, especially when quiescent.

There are distinct differences between this amplifier and the others in the Alchemist range. Apart from appearance (the rest are bulkier, with brass fronts and solid black grab handles), the Kraken is designed to be less demanding of source and nowhere near as cable fussy. Whereas the stereo and mono power amplifiers change their character with each change of cable, the integrated Kraken is not as sensitive and is happy with good solid cables like Linn, Naim or AudioQuest.

Its only major drawback is an inability to cope with loudspeaker loads below eight ohms. It does not have the capacity to deal with four ohm, or lower, loudspeaker loads. As most of the loudspeakers in the Kraken’s price ‘envelope’ would be eight ohm designs, this should pose little problem to most buyers.

Alchemist are quite open and honest about this, suggesting that this is not the amplifier for owners of low impedance loudspeakers. It is possible to use the Kraken with a sub-eight ohm loudspeaker, but the power output will be substantially reduced. This is similar to the original John Shearme Phase One power amplifier, although current (no pun intended) devices are ‘beefed up’ to be more tolerant of lower impedance loudspeakers.

Perhaps it is because the Kraken runs so hot (don’t touch those fins, they bite!), it believes that it is a valve amplifier. It has an overall sound quality that at least one other reviewer would describe as “S-o-o-o Sm-o-o-o-o-o-th.”

This smoothness could swamp the music at times; for example Nico’s voice was sucked into the guitar playing on ‘Femme Fatale’. But for 99% of the time, the Kraken removed the harshness and glare that valve enthusiasts invariably label as transistor-blight.

In some respects, it would be worthwhile treating the Kraken as though it were a valve amplifier. As a solid-state amplifier, fifty watts of output is considered rather low-powered, although this figure is about average for an integrated amplifier.

If we partner the Kraken with high efficiency loudspeakers associated with valve amplification, it should be more successful. It would work with loudspeakers like the Epos ES I is well, but I used a pair of massive 90dB+ efficient Audio Note E’s, a partnership that was highly successful.

The Kraken created full-blooded sounds that were highly listenable, and with these loudspeakers, was more than capable of shaking the room. The bass response was not as dynamic and as forceful as I would like, but it is every bit as good as the other amplifiers in its class. On a very good amplifier, it is possible to determine the differences between bass drums and the biggest of floor toms; on the Kraken, there was just one single bass drum sound. However, there was no blurring of the deepest sounds and bass guitar lines.
The Kraten has a neat internal layout and uses high quality components.

**Measured Performance**

The Alchemist amplifier comes with an external power supply and we got both options. On finding power delivery into a normal eight ohm load, we got both supplies had no effect upon power and with them the amplifier becomes bright and aggressive. The Kraken is impressive without recourse to brightness, a rare quality.

It's also one of the few integrated amplifiers at the price that do not fall back on a hi-fi sound where everything takes on a slightly unreal nature. With a good source and a pair of efficient loudspeakers, the Kraken always has a 'brown rice' sound: wholesome, natural and organic. The health food analogy can be taken further, as it also has a slight wholemeal coloration. By this, I mean that there is a slight coarseness and graininess to the bass and mid-range, but it is something that would be seen as positive by many people, who would find amplifiers without such a 'wholemeal' coloration bland.

Falling back on more conventional hi-fi terms, the Kraken has great imagery. The soundstage is slightly wider than the loudspeakers, but not so wide that instruments at the far left and right sound too dislocated. There is a slight lack of depth to the soundstage but generally it is as good as can be expected for this class.

Its abilities are roughly equal through both phono and line stages. Although it has been suggested that the phonostage is slightly noisy, I found that there were no undue difficulties here even though the bulk of my listening is still on phono. Line inputs do sound quieter, obviously, but there is no fundamental shift in either quality or tonal balance.

Adding the more powerful power supply must be the best £45 spent in the hi-fi industry, as the changes it makes are usually attributed to a £200-£400 scale of improvement. Dynamics, scale, detail, tonal separation and articulation are all improved. Although the Kraken was already in the top league in these respects, it moved to a higher level of performance.

Every now and then a product comes along that causes a stir in the hi-fi industry. The last one was the Pioneer A400 amplifier, which made the English amplifier companies sit up and take notice. I feel that the Kraken, well-built, with a very distinctive appearance and with a superb sound quality, has the same potential. But make sure that you do not invite any superstitious Norwegians around without warning them first!
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This month's selection of six loudspeakers are all 'bookshelf' designs, being little larger - or heavier - than a couple of medium size dictionaries. They will perform well close to a wall, essential for hi-fi set-ups short of space, though the manufacturers featured here advise stand mounting if possible for optimum performance.

Loudspeaker technology has advanced apace since the Seventies. Many of these budget-sized boxes at budget-sized prices now attain a sound quality until recently unimaginable at £200 let alone the round ton our samples cost (give or take the odd tenner). They leave plenty of space on the shelves for LPs and CDs.

The true precursor of small affordable designs was probably the KEF Celeste of the early Seventies, the first speaker to be widely advertised as being small enough to fit on a bookshelf, albeit a fairly solid bookshelf. Squeezing a quart of sound out of a pint-size box has become one of British loudspeaker manufacturers' specialities. We found some impressive budget miniatures within this group.
**MEASURED PERFORMANCE**

An interesting feature of the Trent is its sensitivity; it needs less power than other loudspeakers to go loud. Or, put another way, at any given volume setting, this loudspeaker will be louder than a large majority of its competitors. It allows the Trent to give more volume from a budget amplifier of limited output, making it well designed to be a good match in this respect. The actual measured figure was 87dB SPL (Sound Pressure Level) for 1 nominal watt of input (2.84V). The norm, is around 85-86dB these days.

 Castle achieve this through drive unit efficiency, rather than the more common practice of lowering the loudspeaker’s overall impedance to make it draw more power. The Trent has a 9 ohm nominal impedance, sufficiently high not to stress budget amps. So as a load, the Trent is a very balanced budget design with all the right properties.

The frequency response analysis shows a marked upward trend toward high frequencies, one sufficiently large to be audible as distinct brightness in the sound. Worse, the upward trend culminates in a peak at 10kHz, which is likely to add a spit or sting to the treble. I always have severe reservations when I see this sort of response, since it can make bright CDs sound quite pretty fierce.

There is a bass hump at 160Hz and a fast bass roll-off below 100Hz that needs to be counteracted by wall placement. So the Trent is not a speaker to be used away from a rear wall if low bass is to be obtained.

The Trent is basically well engineered, but I have reservations about its rising treble, a feature likely to impinge strongly on the sound. **NK**

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**SOUND QUALITY**

At first the Trents produced a strong impression of a broad, engagingly detailed sound which allowed a listener to sit with eyes closed and forget the two boxes in the room. Slapping Prince and James albums into the CD drawer revealed plenty of taut rhythm and beat and a tightly controlled performance, but also revealed a slim bass: maybe appropriate for a man reputed only to eat on alternate days, but which could have been useful full.

Placing the Trents nearer a rear wall added useful muscle, but little more in the way of deep notes; bass drum on the James album still had more in common with a small-box bass which betrays the Castles.

At the opposite extreme of the brash, ‘hit you between the eyeballs’ philosophy, the Trents could dance, with sparkly vocals and bright, sometimes brittle, electric guitar and vocals. The Castles came into their own more with recordings suited to their own smaller scale. They were particularly pleasant with acoustic instruments, string bass twanging away, for example, and flute floating pleasantly into the room, if somewhat bright.

On large-scale Classical music, a somewhat vague soundstage than ideal tended to wash instrumental sections into each other, fine tonal shading lacking somewhat. Violins and violas tended to merge in tonal quality, and recorded ambience was somewhat diminished. With believable electric guitars and acoustic instruments, it’s only an occasional thinness in the upper registers and a small-box bass which betrays the Castles.

**CONCLUSION**

At the opposite extreme of the brash, ‘hit you between the eyeballs’ philosophy, the Trents represent an attractive musical compromise, mostly unfazed by a variety of programme and capable of retaining musical interest. Past experience suggests a pair of heavy stands might be beneficial, while buyers should ensure they hear a well-run-in pair in case their occasional spikiness diminishes with use.
Goodmans' latest miniature, the successor to the original Maxim, which has been around as a name off and on for about twenty years, rapidly caught Noel's attention when they first arrived. (He reviewed them in the May 1992 issue.) Certainly, there is just enough in the way of flourishes in the design to have them standing a little prouder visibly - especially without their grilles - than their conventionally-shaped competitors.

One flourish is the gold glint of the metal dome tweeter peeking out behind a protective and functional phase plate. In design terms, this is echoed in the gold print of the nameplate under the main drive unit.

One curious aspect of the design which also sets the Maxim apart from its peers is the use of a leatherette-type cloth finish to the baffle. It's certainly different to fake vinyl with the majority of these budget speakers.

What is not tacky by any means is the engineering care and attention which has gone into upgrading a popular and best selling basic design. The phase plate over the tweeter, for example, in fact acts as hom-loading, said to offer a smoother frequency response in the treble and take away the once-notorious string or peakiness of metal domes.

A two-way reflex design, the port exits at the rear through the slightly inset back panel.

One aspect is the gold glint of the metal dome tweeter peeking out behind a protective and functional phase plate. In design terms, this is echoed in the gold print of the nameplate under the main drive unit.

Of the nameplate under the main drive unit, however, does show a join or two at the corners. The standard of the finishing is not quite as good as the other loudspeakers in this group.

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A two-way reflex design, the port exits at the rear through the slightly inset back panel. Connection is unsurprisingly by standard-quality binding posts again and in common with the majority of these budget speakers there is no provision for bi-wiring.

Designed to be placed near a rear wall, so the bass is brought up a degree or two, a spell of regular usage suggests that good-quality stands are also beneficial. While this goes for practically any loudspeaker, regardless of price, it's not an aspect which should be ignored simply because the boxes that go on them are not particularly costly in themselves.

**MEASURED PERFORMANCE**

The most notable feature of this little speaker is its flat frequency response. I noted how smooth it was in an earlier review and found that in use this translates audible into a well balanced soundstage starting in front of the plane of the speakers and working well back. On the Gary Moore album, this gave the tracks the impetus of a live performance rather than a studio recording. While this sort of presentation can be tiring, the Maxims stop just short of forcing the music up a listener's nose and proved consistently relaxing to listen to.

One or two aspects are slightly over-relaxed in fact. On The Combo's jazz CD, acoustic guitar was extremely fluid, the flute fluent and marked by extreme subtlety. All the same, bass could be a little blurred and shapeless. This was more noticeable on the Prince recording, where the studio mix also tended to blur over the multi-tracking.

Above all the Maxims were musically engaging, with a clear impression of living, breathing musicians behind the instruments. The drawback - if it is one - is that the musical instruments are a convincing representation in sound, but not in scale. Close-miked string bass, for example, well forward, and well rounded, was mildly disturbing in being apparently larger than a partnering piano.

For all that, these miniatures had the ability to produce a lot of music, with tricky orchestral recordings reproduced with broad and convincing tonal variety and colour and no problems telling violins from violas or trumpets from trombones. Or, for that matter, two qualitatively different guitars on the James album.

**CONCLUSION**

Wholly admirable in credible tonal quality and with a special ability to keep up the tempo of music we'll beyond its class, the Maxim 3 is startling. Its fluent mid-range is capable of smoothing over one or two cracks - there are places in the treble where signs of strain show - with a display of instrumental nuances and dynamics that belies their small size. A veritable bargain.
A comparison review

would hardly strain the proverbial seven-stone weakling. They stand 29cm high, are 19.5cm wide and 18cm deep, and weigh in at a mere 3kg.

Finished in the ubiquitous black wood-grained vinyl characteristic of budget speakers, the high-density particle-board cabinet houses two drive units: a hard-dome tweeter and a 13cm bass/mid driver.

ThePrima's response characteristic is sufficiently non-flat to give it a distinct character. It is otherwise normal and vice-free. NK

The Prima has some unusual characteristics. A glance at the frequency response analysis shows a smooth mid-range hump. This may make its treble sound either wispy at times or, possibly, piercingly sharp. When they are at such a high frequency, treble peaks can be merely annoying, or they can be quite unpleasant; only listening tests can differentiate between the acceptable and unacceptable. When they are at such a high frequency, audibility isn't guaranteed, simply because if there's no energy on the disc, then the peak won't have any effect.

Bass output reaches down to 125Hz before falling away rapidly, so mounting against or close to a rear wall is necessary. A peak at 160Hz helps to combat wall cancellation effects, but may also add some bass boom.

The Prima proved to be sensitive, turning out 86dB sound pressure level (SPL) for 1 watt of input. This means it'll go louder than most rivals at any given volume control position, including those here, except for the Castle Trent. Overall impedance measured a normal 8 ohms, so as far as an amplifier is concerned this speaker 'looks' normal enough.

Heybrook Prima

£119.99

**SOUND QUALITY**

Sticking a recording of a jazz quartet with a particularly forceful string bass Prima CD drawer produced a lush, round sound with a strong impression of going deep. The flute was also round and on the gentle side. Subtleties of instrumental timbre or intonation, however, are not: the Prima's forte: they tend to take a raincheck of some of the complicated bits.

Prince was dynamic - it would need a pretty damp blanket to stop Diamonds and Pearls in its tracks - with a very deep sound against a wall is recommended: furniture and shelves best avoided.

Back to Rock music and James. There are some fairly snappy tracks on the last album, with a good deal of clashing and brushing of cymbals. The Primas tended to soften the more piercing sharp end of the tracks - though some guitar notes were comparatively harsh, even rattly on occasion. Gary Moore's cuts produced a hint of a guttural quality to the mid-range, discernible under a quick-stepping rhythm.

**CONCLUSION**

By and large, Heybrook's Primas produced a slightly uneven performance within - it should be emphasised - the context of this group. They possess some noticeable, albeit slight, colourations which tend to suggest a strength out of all proportion to their size. Best partnered with sources and amplifiers appropriate to their price, the Primas perform competently, suited more to ears preferring the laid-back approach rather than the bravura.
Coul it be that JPW, with their Minims, have an eye to the Habitat market? People who go in for their kind of shelving and furniture will very likely immediately take to these small speakers simply because they are finished in white. It's certainly a welcome change, though for those of the Henry Ford persuasion, or chimney sweeps, they are also mundanely available in black.

Among the smallest of this month's bunch, the Minims are a sealed box design, weighing a low 2.8kg. Dimensions are 27.5cm high, 18.5cm wide and 20cm deep. Power handling is a little above the norm for low-priced loudspeakers, with a capability for amplifiers up to 70 watts.

The two drive units are a comparatively standard ferro-fluid damped dome tweeter and a 13.5cm paper cone bass/mid driver. While paper-cone drivers tend to be criticised sometimes they tend to run-in rather more quickly than the polypropylene variety and can give good results when implemented along with a decent quality crossover. They are also less fiddly and can be cheaper to produce, which explains why they are still to be found in budget sector products.

Fashion, at least as far as biwiring can be said to be fashion, has not afflicted JPW either. The Minims - like most of their compatriots - are provided with only a single set of binding posts round the back.

As do the other companies, JPW provide a 'starter' guide to their speakers, which is printed on A3-sized card. Time was when no manufacturer of budget 'bookshelf speakers really paid much attention to ancillaries; JPW's Minims, for all their musical name, turned out to be a bit crotchetty, less equal.

SOUND QUALITY

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SOUND QUALITY

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to a broad spectrum of music than the others in this test, and sometimes displaying the fact. Prince's Diamonds and Pearls at first sounded more exciting and vivid than through other loudspeakers in this group, with a real partying bop to it. It was, however thrilling and free of the boxes, rather small-scale, with individual instrumental qualities not readily discernible. It struck us later, though we were foot-tapping too busily to notice it missing, that the low thunder in the background almost entirely disappeared.

On both the James and the Classical recordings, while the Minims made a very brave attempt at putting out the music, the individual parts were rather muddied together. Neither the soprano's words at the beginning of the de Falla - or James' whisperings proved intelligible. The vocals on James were too palatal for concentration to be engaged.

Little real dynamic extension to either treble or bass, a somewhat two-dimensional soundstage and vague fuzzy stereo imaging didn't stop the Minima making a good attempt at reproducing music, oddly enough. Provided a listener didn't expect sharp focus or discrete tonal qualities, or subtle shading of colour, there were still enjoyable aspects. Strings could sound sweet and moving - acoustic instruments and drumkits both could maintain an easy rhythm. The more complex the mix, alas, the more the Minims struggled, but the emotional content of the music always came through.

CONCLUSION

Despite the criticisms, the Minims are in a price bracket that has all but disappeared and are the cheapest of all reviewed here. For eighty pounds, they make a reasonable stab at real music for the thinnest hi-fi wallet, with an overall competence that is way beyond what might be expected at the price.
Mission 760i

Mission's 760i miniatures are again a relatively unassuming black box, but among this group, they possessed two distinctly unusual features. First, the grilles are intended to be left on. Whereas most other manufacturers make removal easy, the design of the Missions' plastic frames in fac: makes displacing them simple, but also runs the risk of damaging the moulded fixing points on the frame. With the grilles off, a second unusual feature comes out into the open. Uncovering the front baffle reveals that these loudspeakers appear to have been designed upside down. It's odd how accustomed we have become to expecting the tweeter to be at the top of the baffle. In common with other Mission designs, in the 760s the usual arrangement is reversed, with the main drive unit at the top and tweeter underneath, along with an offset reflex port. It's not essential, as it turned out, to put the Missions on higher than normal stands to place the tweeter at ear height, but it is something that is worth bearing in mind, especially in a demonstration.

Drive units are, respectively, a 19mm polyanide ferro-fluid cooled tweeter and a 130mm 'plasiflex' main driver. Finish is black-ash, but for this price from a PVC factory rather than a forest. Fairly diminutive, but not the smallest of the group, they are 29.5cm high, 18cm wide and 20cm deep. Connection is via fairly chunky binding posts at the back. As is usual at this price - Tannoy being an exception - the 760s are designed for single-wiring only and are not bi-wirable.

Mission have produced an excellent manual. Someone in the company, by the way, believes in Europe and 1992, or is very linguistically skilful, because it's written in five other languages besides English. Two diagrams give visual advice on positioning: you don't have to read a word of any language to know that the 760s are intended to be placed about 20cm from a rear wall on either a shelf or stands, but not on the floor! Elsewhere, there is solid advice on connecting and using them, including the suggestion that they should be 'run-in' for ten hours.

SOUND QUALITY

By way of a change, a Classical piece went into the CD player first. Something special soon became obvious; we listened through one piece in its entirety and were so drawn into the music that we forgot to stop the CD for a discussion of first impressions - we simply carried on.

The Missions provided the best stereo spread and the most complete orchesta out of the group - a more coherent and detailed picture than a large number of loudspeakers.

Turning to Prince and James, both albums sounded the way they should be heard, with discrete sounds, accurate tonalities and unmistakable vocals. For the first time the James tracks had weight to the instruments, perfect proportions and speed and clarity withal. Superb in terms of rhythm, it was possible to follow - and more importantly, sing along with - any of the vocals or melodic lines, all quite unobscured.

Remarkably uncoloured, especially at budget price, we had very few reservations about the Missions' performance. Violins struggled a little for full tonal colour, drumkits in rock music lacked a little of their full force, and Prince's thunder mumbled a bit. But there was separation, depth, ambience and detail in plenty. All that prevented us assuming these boxes were much more expensive was a shallower depth and a little less image precision obtainable at the higher price. Gary Moore - not entirely unexpectedly - turned into a vivacious live performance. That CD was fighting, feeling Blues, full of energy from both singer and band.

CONCLUSION

A room full of music, worth a good fifty pounds more of anybody's money, was our immediate conclusion. Possessed of lifelike scale, plenty of discrimination and tonal quality well out of their class, the Missions make supremely and consistently attractive music.
One of Tannoy's seven-strong range of 'Sixes', the 603 is the smallest and cheapest. It shares its shape with the others in the catalogue, in all its six-sided polygonal glory. (In fact, if you count the top and the bottom, the Sixes have eight sides, if you're with us.) Thought, rather than simply an eccentric desire to be different, did go into the shape. An irregular-sided cabinet has long been thought to reduce cabinet colourations, and, as it happens, can also be quickly manufactured from a single piece of material. Top and base are injection moulded from a mineral filled polyolefine.

Apart from the cabinet shape, there are a couple of other oddities which set the Tannoy's apart visually. The curious inlay marbled-effect top might be the major stumbling block as far as some people's notions of interior design goes, the other is hidden round the back. For some reason, the positive loudspeaker terminals are a designer-yucky lilac. Never mind, they are substantial, and these are the only speakers of this group which are designed to be bi-wired.

Other than in the shape, the 603s are relatively conventional, rather taller than their rivals. Bass unit is a 5" injection-moulded cone unit screwed into the baffle and topped off with a 25mm aluminium dome tweeter, protected by a metal mesh grille. Experience with other Sixes suggests that this tweeter is a particularly successful design; Tannoy claim a response up to 30kHz. In common with many small-box designs, a reflex port positioned high at the back aids the bass output.

The plastic skirt at the bottom of the cabinet tends to make mounting a Six on conventional stands a little ungainly and diminishes the firmness of the coupling obtainable. Tannoy, however, do make shaped stands for the Sixes which can be filled with sand or lead shot or whatever other heavy material. Tannoy, in company with Castle, offer a five-year guarantee.

SOUND QUALITY
Tannoy's smallest Sixes surprised with a vivacity and joie de vivre that was unexpected from such a small box. Prince's latest was presented with all the elements of the mix between the speakers, with remarkably stable imagery. Admittedly the thunder mumbled and grumbled a bit rather than sounding really stormy, and there was a little confusion between two guitar sounds, but there was tonal differentiation enough not to doubt there were two.

Gary Moore's album swung bluesily and was tautly rhythmical, though the vocals had a tinge of wariness. Here, the bass that had softened the bottom-end impact of Prince had the drumming lagging a little behind the beat of the music, dulling the impact of the whole. This can be an extremely lively recording, but an overall lack of focus had our attention wandering.

So far, single-wired, there was a recognisable family Sixes sound, albeit a touch recessed. All the same, the 603s were expressing the musical intent of recordings, something which became obvious with the de Falla recording which had been a stumbling-block to others during the listening sessions. The Tannos coped well in the context of this group with ambience, displaying an orchestra with some depth, though the soprano sounded more recessed than distant.

Single-wired, the only real trouble with the Tannos was that on some programme, despite an inherent ability to keep time, some of the detail which keeps the ears occupied occasionally submerged in the mix. Bi-wiring removed a number of these reservations. It tightened up the bass, though it also lightened it a little while there was still some sense of recession; vocals came more acceptably forward.

CONCLUSION
Tannoy didn't put the extra pair of terminals round the back just for fun. Bi-wired, the 603s had more differentiation of tonal colour, an increased degree of depth and more focus. They did stay, however, more of a 'background-listening' speaker than some might favour, requiring a more up-front and punchy approach.
Hi-Fi that speaks for itself:

8000A Integrated Amplifier
8000C Pre-amplifier
8000P Stereo Power Amplifier
8000M Monobloc Power Amplifier
8000DAC Digital-analogue Convertor
Conclusion

Trying to manufacture a loudspeaker that is pint-size and attractive to the impecunious has never been easy. When you add together the cost of the box, the price of the drive units, the packaging and the transport it’s a surprise in these days to discover it can still be done with a retail price around a hundred pounds.

With the inevitably tight margins involved, the best that might be expected would be a fairly simple design and a couple of cheap and ordinary drivers screwed onto the front baffle. Not so at all; the best illustration is the Tannoy Six series, which use specially developed drivers even in the cheapest 603.

What was remarkable about this group of six was the quality of sound from all of them. Nearly all could match - and in some cases better - larger loudspeakers at twice their price. It’s a salutary reminder of how British speaker design has progressed over the last few years.

There was no doubt about the two top dogs out of this group, Mission’s 706i and Goodmans’ Maxim 3s, the former just a trifle under £120 and the latter more of a bargain than ever now down to £110. The essence of both was that they replayed - simply - more music more accurately for their size and price than any others of the bunch.

Which of the two might be more preferable is very much down to personal taste, because while they share the same strengths of tonal clarity and detail, in presentation they are at opposite poles of the hi-fi spectrum. For those who prefer an up-front sound projected well out into the room - especially on Rock or Jazz recordings - the Maxims must be the preferred choice.

In this kind of perspective they excel, to a degree which very few much more expensive designs hardly better. Allied with a well-integrated mid and treble and believable bass, it’s easy to forgive moments of tonal thinness or graininess and enjoy the music.

Mission’s 706i loudspeakers have very many of the same strengths: good dynamics, attractive tonal colour and a pretty decent - though sometimes a little vague - stereo spread. The overall perspective was quite different to the Maxims, back in the plane of the boxes, with less forward projection. The Maxims are more for the listener who prefers a more laid-back approach.

Both Tannoy’s and Castles fell somewhat behind these admittedly exceptional designs. While the Tannoy 603s, single-wired, presented some tonal aberrations that tended to confuse some Rock mixes and fail to keep the attention as engaged as either the Missions or the Goodmans, bi-wiring proved essential.

Bi-wired, the whole tonal quality was cleaned up with a tighter bass and more separation between instruments. For all their vigour, they proved not quite so even as either the Missions or the Maxims. All the same, their long-term listenability must be rated highly, with virtues sensibly balanced against occasional vices, neither overpowering the other.

Castles’ Trents possessed a light balance, which although it kept the rhythm and the beat tight, lacked weight in the bass. On the plus side, at least they were not indulging in fakery, but the traces of brightness and sparkliness in the upper mid and treble unbalanced tonalities. Nonetheless, they performed well, but unlike the Missions, Maxims or Tannoy’s showed signs of being particularly equipment-conscious. Both sources and amplification would have to be carefully matched with regard to their intrinsic sound and kept within their price league.

Both the Heybrook Primas and the JPW Minims were outclassed in this company, the Primas unable to match the dynamics and range of their rivals. Until the Maxims came along, their ability to reproduce a solid round mid-range would have been recommendable; but their knack of staying with the music at the cost of finer detail now shows up more obviously.

Last - and least in price - come the JPW Minims. Now sounding a bit old-fashioned, they were outclassed in terms of imagery, which could collapse into a kind of dual-mono, and struggled more than all their rivals when it came to reproducing the real dynamic range of either an orchestra or well-produced Pop. Their price - in this day and age frankly as little as could possibly be paid - set them down at an obvious disadvantage.

In systems appropriate to their price, or with selected separate components, any of these six speakers might well suit. Mission and Goodmans, however, run away with the laurels on this occasion. Both designs manage to keep up with sources and amplification way beyond their price bracket.

They have limitations, but the very fact that both will keep a listener listening through several stages on the upgrade path make them recommended starter speakers for a system. It takes a much thicker wallet before either can be bettered.●
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- J.A. Michell
- Wilson-Benesch

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- Lyra
- Transfiguration
- Shure
- Sumiko

### Speakers
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- Pentachord
- Diamond Acoustics
- Ruark
- Dahlquist
- Sequerra
- Magnepan
- Sonus Faber
- Mytho
- Triangle

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Japanese Victor

Noel Keywood takes a ringside seat as the JVC TD-V1010 battles for the heavyweight £400 cassette championship.

The JVC TD-V1010 is a wonderful example of how the Japanese in particular have developed and refined a simple 1960s technology. And even though the cassette’s successor – Digital Compact Cassette – is here, there’s still a role for decks like the JVC, in spite of its £400 price tag. The cassette will live on usefully in most peoples’ lives for some years yet and decks of this quality are wonderful for making high quality recordings that can be transferred to car players and personal stereos in particular.

But let’s start with the peculiarities. The latest fad in cassette is the powered cassette door the JVC hasn’t got one. It’s a push-it-closed-yourself job I’m afraid to say, so gadget freaks may find this recorder a bit of a disappointment. After all, Sony have just brought out a motorised door on a player costing less than £200 (and tested next month). I’d guess that JVC feel dedicated users don’t demand such a convenience – and it does mean you can get the cassette out any time, not just when the power is on.

Perhaps more disconcerting is the absence of any form of automatic tape tuning system. This will dampen the enthusiasm of dedicated tape users quite considerably I imagine – and why not? Even though adjustment systems vary in their ability to get things right, according to the tape being tuned, I can understand how owners like the reassurance they give. Tests show that adjustment by ear is as accurate through direct A/B comparison using the Tape/ Source monitor switch, but this can be a slow and tedious process. When in a hurry, I’m happy to use my own Nakamichi ZX-9’s tuning system, being prepared to put up with just a touch of tonal imbalance should it occur. So I am a bit surprised and disappointed that the TD-V1010 should lack such a system, since it has both variable bias and record gain (sensitivity).

Coincidence would have it that we have a prototype of a tape bias tuning gizmo. It’s been floating around the office for some time. The appearance of the JVC, together with a cautious yet enthusiastic response from Eric to the gadget, has prompted us to put it into this issue, since it is tailor made for such a situation.

So much for what the JVC very obviously hasn’t got. What it has got, apart from sheer performance, is possibly less than you’d imagine at £400, but I’m not complaining. Gadgets don’t in the end count for much; performance does. Top cassette decks need a lot of thought and attention in their design, plus very specialised set up at the end of the factory production line. That’s what I am looking for with a deck like this.

Quality recorders must have a dual-capstan transport mechanism for smooth, stable running of the tape. The TD-V1010 has such a transport, equipped with a direct-drive capstan for really tight speed control, a system that is effective in reducing low rate (drift) speed variations.

Separate record and replay heads are fitted, siamesed together into one block as is common. This gives the highest level of performance, together with the great convenience of off-tape monitoring. The quality of a recording can be checked whilst it is being made, since the replay head lies after the record head in the tape path. A recording put down can be immediately read back off the tape with this arrangement.

There are direct inputs that bypass some internal circuits, including the balance control, and a normal line input. No microphone input is provided, but there is a headphone output together with its own mini-volume control. Dolby B and C noise reduction systems are fitted, but not the new Dolby S system.
JVC use a variety of audiophile design practises in the TD-V1010 cassette deck. At left you can see the record level control potentiometer sitting at the rear of the chassis close to its associated circuitry. This idealised positioning needs a shaft, visible in the photograph, to run forward to the front panel control.

Copper plating is applied to the metal work to avoid induced eddy currents.

To get this you’ll have to pay a lot more than £400. JVC have fitted an on/off switch for Dolby HX Pro, which isn’t necessary. They don’t make any sensible observations about this in the handbook one that is of limited use I feel, for a complex product.

There’s a track search system that relies on gap sensing, something that can be useful, particularly with prerecorded tapes. JVC fit a switchable MPX (multiplex) filter which should be used when recording from VH-F stereo tuners to cut out pilot tone (19kHz). This avoids blocking of the Dolby system and the possibility of whistles.

A tape counter with a four-digit readout and ‘time remaining’ sits on the main display panel, together with a bright orange and red fluorescent record level indicator, a digital readout of peak music level and legends to show what type of tape has been inserted into the machine: ferric, chrome or metal.

To this fairly unremarkable collection of facilities has to be added a remote control unit with the transport functions on it, counter reset and display functions, music search and source/monitor button. There’s no control of output level and, therefore, volume. The TD-V1010 looks nice enough, with its discreet gunmetal grey finish. It’s certainly an improvement upon black. The orange and red display panel also adds both colour and visual verve to the package. I liked the back-fit cassette compartment too; it helps to reveal at a glance how much tape there is left.

The transport controls have a light action, but I didn’t find the white lettering on them especially legible against the light grey background. A solid base adds weight to the machine. Otherwise, the TD-V1010 was pretty normal in the way it behaved, being reasonably quiet and civilised. Like all expensive decks it is speedy in fast forward or reverse, which makes track finding less time consuming.

In many - but not all - areas, the measured performance of this machine was exceptional. It is quieter than any deck I have previously tested; the transport was remarkably speed stable and the head can get very high recording levels onto tape. I was disappointed to find that although the head had been factory set to be perfectly upright, high frequencies fell away.

Peak record level (0VU) on the record level indicators had been set very low too, which was misleading. Add these gripes to the lack of a calibration system and you can understand that in spite of its unrivalled strengths I have some small reservations about this machine.

A look inside showed circuit boards stacked over each other, obscuring various important adjustment potentiometers. This complicates recalibration, something that should be reasonably easy to carry out on an expensive deck like this one.

The small amount of upper treble loss, due not to head azimuth error but replay equalisation, made itself quite obvious with prerecorded tapes. Whilst most people won’t buy a £400 cassette deck for this purpose, it is nevertheless an important measure of general compatibility. The fact that the TD-V1010 made most prerecorded sound a little warm clearly showed how the equalisation error made itself known in practice.

A new Tina Turner tape, “Simply the Best,” well illustrated both the strengths and weaknesses of the machine in replay. The reference Nakamichi ZX-9 clearly sounded crisper with Dolby B engaged; it also had cleaner bass. These were quite immediately obvious strengths of the ZX-9. However, with River Deep, Mountain High the JVC clearly and smoothly analysed and revealed the individual components that go to make up the famous “wall of sound” orchestration that Phil Spector used.

Although warm in tonal balance, it was expansive in its presentation of the total performance, with backing singers, horns - and even Tina Turner struggling to stay heard - more clearly presented on a big sound stage. I suspect it is the special LC-OFc wiring of the JVC in particular that gives it this subtle but valuable extra clarity. I still wanted to hear the crispness of the ZX-9 in addition to this, however, and would have preferred it if the JVC had Play Trim (like NAD or Yamaha), or a replay response like the better TD-V541.

I was aware of well controlled tempo with the JVC, ably demonstrated by playing a Decca tape of Chopin Nocturnes. Even though prerecorded tapes have speed instability recorded in, a good transport can still give audibly better results by not adding to the problem.

Metal Matching

As measurement had indicated, TDK MA-XG metal tape didn’t really match this machine, no matter how much I twiddled bias and experimented. This is a matter of record equalisation being inappropriate. Maxell Vertex metal at -2 bias was fine however, giving a tonally exact replica of the original when recording. Vertex runs so well it sounds very clear and stable. Whilst I heard just a slight lessening of transient impact on closely miked drums, recordings were superbly smooth and clear across the mid-range and treble regions.

As I am commonly finding these days however, while current heads can, with high bias and premium grade metal tape, now get astonishingly high recording levels onto tape in the mid-band and at high frequencies, they overload and ‘wallow’ in the bass. The rather promi- nent bass on Stevie Winwood’s Roll With It sounded distinctly plump and out of time; it was rolling around doing its own thing on a recording I made something I noticed quickly and found a little disconcerting. Yet with Dolby B only engaged, tape hiss was all but inaudible even at high volume level, the JVC was so quiet. So the final result when recording onto good metal tape was impressive in most respects, but not perfect, even though I kept recording levels down just a wee bit (peaking at +B) to give the deck its best chance.

Chrome tape (Maxell XL-IIIS) proved even quieter; just the slightest hiss was audible with Dolby B, when recording to +4 or so and then replaying at a high volume level. This was impressive; Dolby C was hardly necessary. Recording quality was very good, but chromes and fencs do round off transients and with close miked drums, for example, there was some slight loss of transient speed and impact. It is only with certain demanding tracks that this happens, the synthesised percussion on Grace Jones’ ‘Slave to the Rhythm’ being one that lost...
some of its hard impact. This sort of material apart, the JVC sounded smooth, balanced and open. If there's one great benefit of low noise, it's the ability to stay with Dolby B, so avoiding the quality degradation introduced by C. I was impressed by the cleaner bass of TDK AR ferric tape. Ferrics need the lowest bias of all and can take the most stick at low frequencies. TDK AR was in the critical bass and lower mid-stick at low frequencies. TDK AR was in the range region, if a bit grainy as usual at the lowest bias of all and can take the most smooth, balanced and open. If there's some of its hard impact. This sort of those from a Nakamichi. With the quiet OdB flux). They are figures comparable to flat by adjusting the bias, the head could achieve the same dynamic range as a Nakamichi by being able to get equally high sonic filtering above 20kHz and, most importantly, a stable and quiet bias oscillator, super-amplifier hiss remains unresolved. The surprise of the TD-V1010 is that it significantly improves on all noise figures, breaking all the JVC have sacrificed nothing to get low noise, amplifier I found, another sign that JVC have on the quietness front. The other response anomaly this machine shares with some Nakamichis is a sub-sonic peak. JVC's lies at 17Hz and is +2.5dB - enough to add a bit of extra bass weight. The response trough lies in the replay amplifier I found, another sign that JVC have followed Nakamichi, who arrange things perfectly compatible recordings for transfer to a personal stereo or car. Finally, in the on-going and now worsening confusion over where to put OVU, this deck places it unusually low - no less than -4dB below Dolby flux - which is around 4dB lower than other decks, even budget models. This makes little sense. High performance decks commonly put it around 5dB higher. As a result music peaks can be taken right up to the upper limit of the display (+12) with metals. I admit to being baffled by the Japanese when they start replaying with top end product. This particular recorder has no auto-tune system, a manual cassette tray, a 0VU peak record level set too low and a smidgin of azimuth error, which although minuscule still prevented the review model from scaling Nakamichi heights. Yet it has obviously received very special attention: it's impossible to come up with such an extraordinary performance as 0.015% wow and flutter (almost as good as CDJ) and 87dB of dynamic range (more than DAT!) without somebody who knows a thing or three about cassette lurking in some back room somewhere. How they can produce such an advanced deck with minor but obvious peculiarities I can't understand. Still, the TD-V1010 is rather special all the same; the funny bits don't in the end detract much from the fact that it offers astounding performance from Cassette - better than that of any other deck I have tested to date - which is just about every one, I believe! NK

**Measured Performance**

I was impressed by JVC's TD-V541, tested in our December 1991 issue. It was a superb all-rounder, reasonably priced. The extra digit in this model's number said it should do better, yet experience shows Japanese manufacturers commonly make a dog's dinner of their top models these days; heaven knows why. JVC retained their grip - just - with the TD-V1010; in some areas it is unrivalled.

A big surprise were the hiss figures. Cassette decks always hit -56dB (bias noise, a result of recording, then replaying). That's without Dolby and using the quietest tapes available. TDK, SA-X or BASF Chrome Super II. Switching in Dolby B gives -10dB improvement and Dolby C -20dB, resulting in -66dB and -76dB hiss levels. These are the figures a Nakamichi turns out: they are never bettered. Some decks fail to reach this standard, usually because of noise in their replay amplifiers.

Because of the consistency of this result I usually say little about noise in cassette recorders: it is always the same. Also, the question of whether it is tape hiss or amplifier hiss remains unresolved. The surprise of the TD-V1010 is that it significantly improves on all noise figures, breaking all the shackles around 4dB lower). One of the curious but, I would imagine, incidental similarities to that of a Nakamichi is frequency response when recording blank tapes. The '1010 was less flat than many decks nowadays, and in the same way as the curious but, I would imagine, incidental similarities to that of a Nakamichi is frequency response when recording blank tapes. The '1010 was less flat than many decks nowadays, and in the same way as Nakamichi heights. Yet it has obviously received very special attention: it's impossible to come up with such an extraordinary performance as 0.015% wow and flutter (almost as good as CDJ) and 87dB of dynamic range (more than DAT!) without somebody who knows a thing or three about cassette lurking in some back room somewhere. How they can produce such an advanced deck with minor but obvious peculiarities I can't understand. Still, the TD-V1010 is rather special all the same; the funny bits don't in the end detract much from the fact that it offers astounding performance from Cassette - better than that of any other deck I have tested to date - which is just about every one, I believe! NK

### REPLAY (prerecorded tapes)

**Frequency response (IEC Primary Refs.)**

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<th>Material</th>
<th>20Hz</th>
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<tr>
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<td>20Hz</td>
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</tr>
<tr>
<td>chrome (IECII)</td>
<td>20Hz</td>
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</tr>
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**Distortion (1kHz)**

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**MOLUSAT (IEC Refs.)**

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**Frequency Response**

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**Speed Stability**

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<tr>
<td>10kHz</td>
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**Shelved upper treble**

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**Superb speed stability**

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<td>10kHz</td>
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<td>20kHz</td>
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**HI-FI WORLD SEPTEMBER 1992**

33
"Marvellous stuff!"*

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*Hi-Fi Choice No. 109

For information on the complete range of harman/kardon separates contact the Technology Centres above or Harman Audio, Mill St, Slough SL2 5DD; 0753 576911
Getting the Digits Taped

Noel Keywood grapples with an early production prototype DCC900 Digital Compact Cassette recorder, shipped in direct from Philips in Holland. The gremlins had a great time; Philips' phone bill will affect next years operating profits.

"NO TOC" it said. The complexities of a TOC is the sort of thing that could keep an army of journalists, engineers and handbook writers in work for a long period. It's also the sort of thing that will make Granny return to her crochet with renewed vigour. Philips' first full-feature Digital Compact Cassette recorder, the DCC900 priced at £499, is complex. Arcane messages like the No Table of Contents disclaimer I had flashed at me during my experiments are part of a new language that will face users. It also formed a greater part of the language on the 'phone lines between London and Eindhoven. But TOCs apart, I found DCC also possesses great flexibility and, better still, extremely good sound quality.

Philips have made the DCC900 a very comprehensive package. It has been conceived to be something of a showcase I suspect, so there's a lot to it. The size of a large cassette deck, it is built like the lighter ones. That's to say it's adequately strong and well finished, but it doesn't have the solidity of more expensive hi-fi components. Our sample had a creaky tape-loading drawer, but hopefully this will move more smoothly and feel firmer in units reaching the shops.

Designed to mimic a CD player, the drawer sits centrally over a large, blue fluorescent display panel. This conveys more information to users than that of any digital source to date. It has a ten-character, dot-matrix type readout that can write up the album title, track title, artist and such like. If the information is too long to fit, it will scroll through on command.

Alternatively, the display will switch to show track number, time, tape counter, side A or B of the cassette, the operational mode and, finally, record level. The time display will show absolute time from start, elapsed track time, total time remaining, or it will

WHAT IS DCC?

Short for Digital Compact Cassette, DCC is the successor to the conventional cassette. It cleverly puts a specially-processed digital signal onto inexpensive video tape, so both blank and prerecorded tapes will not be overly expensive. Expect a price of around £5 for a blank tape and around £10.99 for a prerecorded. Philips say prerecorded tapes will be available in the shops by the end of 1992.

The machines themselves will initially be priced at around £500 maximum for a domestic hi-fi recorder. Portables and car players are likely to be less expensive. Technics and Panasonic in Japan are gearing up to produce DCC, so some of the world's largest electronics companies are behind it.

A DCC recorder will make digital recordings rivalling the quality of Compact Disc, Philips say. The prerecorded tapes should sound as good as Compact Discs too. Even more information will be put of them than currently goes onto CD. Track numbers, playing times, titles, the artists and such like will be provided.

The tapes are the same size as a normal cassette, but a bit slimmer. They have sliding metal guards to keep out dirt and fluff, and hub locks to prevent the tape unwinding whilst the cassette is being carried. This makes them very durable - more so than a CD. They are immune to vibration too, which makes use on the move possible - in a car or jogging.

Finally, DCC recorders will play normal analogue tapes as well - but they will not record onto them. So tape collections will not become obsolete.

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AB DCC recorders auto-reverse. This shot shows the rotating head assembly beneath the cassette tray, which is part of the auto-reverse arrangements.

function as a normal tape counter. With symbols appearing as well, the matrix display of the DCC900 is pretty comprehensive, more so than CD or DAT in this area.

So DCC offers users more information than CD or DAT. Some of it is software information, but recording in particular also brings up mode messages that are unique to DCC. For example: Append, Lead-in, No TOC, Start Marker, and such like. Being part of a new and obtuse language, we’ve devoted a separate section to this, since descriptions are long winded and perhaps a little difficult to follow.

To possess the convenience of CD, in track finding, skipping and what have you, digital tape systems are a lot more demanding of their users than the conventional cassette. Users need to compile their tapes in the same way that recording engineers put together special master tapes for Compact Discs, which have a Table of Contents, PQ codes and suchlike, just so the search mechanisms can work properly.

Philips are aware that the operating logic of DAT can be difficult for consumers to cope with and they claim to be intent on making DCC easier to use. However, the easier any tape system like this becomes, the fewer tricks it can perform. Knock up a quick tape and you’ll lose conveniences like a time readout and track number search. Spend some time carefully compiling a tape and these conveniences should, in production samples, be available. This is the dilemma faced by those wanting to domesticate digital tape systems: should they be as complex as professional media, but slow and awkward to use, or should they be simple but quick, like cassette?

My answer is - both. The advanced functions can be separated from the simple ones, but on our DCC900 the delineation still wasn’t clear enough. However, Philips were frank in telling me that this aspect of DCC was still being debated and dealt with by the development engineers.

I was warned that the operating software of our prototype was not complete and that a few ‘peculiarities’ in the way early samples behaved in response to commands existed. After a long conversation with the senior project engineer, Gerry Wirtz, in Eindhoven, Holland (the home of Philips) it turned out that there are many unresolved difficulties. Half jokingly, he said they rather hoped that Britain’s more critical reviewers would discover every wrinkle and bug in time for them to be expunged from final production!
the DAT was started after the DCC. Otherwise, there was no incompatibility between these recorders; the DCC900 even recorded at 48kHz from a prererecorded DAT. The only thing it wouldn’t do is accept information like track numbers from DAT, something it will do when recording (digitally) from CD. DAT would not accept code from DCC900 even recorded at 48kHz from a CD. DAT would not accept code from DCC either, otherwise the two tape systems work together perfectly.

The remote control transmitter has a numerical keypad for direct track finding, plus a whole host of facilities. Philips brief for this recorder seems to have been “include everything!” It has DCC Open, remote control of volume, text reveal and even some of the marker functions needed when recording. The machine will playback or record by remote control.

Balancing the somewhat unpredictable behaviour of our review sample was a degree of fidelity higher than my expectations had allowed for; plus enough flexibility to interface with an ever growing array of external digital converters. And to cap it all, the DCC900 plays conventional analogue prerecorded tapes.

The DCC900 handled conventional (analog) prerecorded cassettes well. Like all future DCC recorders, it is an auto-reverse machine, a button selecting side A or B play. The repeat function offers continual play and track search plus a whole host of facilities. Philips assured us that the prerecordeds with the DCC900. Swapping around digital converters showed that their own character was quite clearly discernible and was affecting my judgement of sound quality, suggesting the PASC-encoded digital signal on tape was a subjectively close replication of the original.

Recording digitally from a Teac transport, DCC seemed a trifle more mellow than the original. However, it struck me that there was likely to be quite a difference in sound quality between source and tape, in some respects I would be happier with DCC on the evidence of the DCC900 than with at least one similarly-priced DAT recorder of my acquaintance. It would certainly be difficult to find an analog deck to beat it at anywhere near a similar price.

Neil reckoned that the sonic signature of the 7350 DAC would probably be more recognisable than that of PASC compression, and I agree. (Sister company Marantz will be using DAC7.) Using the machine’s own converters (AD and DIA), there was a noticeable difference between source and copy. Copy was marginally softer, with some evidence of dynamic restraint at the lower end, and a degree of throatiness on vocals. There was also a diffused air across the soundstage.

Recording and playing back using an external DAC, a Deltec Bigger Bit, brought out the DCC traits more clearly. Primarily of course, like DAT, DCC must be due to jitter from the DCC transport or clocking system, rather than any effect due to PASC. In the end, I felt satisfied that differences between the sound of DCC and that of digital sources may well exist, but they are very small and likely to be attributable to factors other than the one most potentially controversial part of this new tape format - PASC. I am not saying that DCC does not have some slight signature, but it is very small and the more tests I performed the less certain I became about its exact nature. If anything, I would say it slightly takes the sheen off treble and it also introduces a little coarseness, both effects being very minor. As a digital system it seems pretty benign in its errors.

On balance I ended up more impressed with the sound of DCC than I had dared hope. I’ve been reminded of a remark made by Tony Griffiths at Decca’s recording studios in Kilburn, London. He said that if and when DCC went eighteen-bit, he thought it likely that its sound would discernibly surpass that of CD. It was a remark that intrigued me. It does seem that the system is inherently good enough to achieve this.

I listened to the behaviour of DCC with Rock music; the demands of Classical are different. Eric Braithwaite analyses its sound quality mainly on Classical material.

Eric Braithwaite
(Music Editor) says-

I have previously been a little critical of Philips’ PASC digital compression system. The good news now is that PASC, as built into the Philips DCC900 recorder, does work well. While I heard audible differences between source and tape, in some respects I would be happier with DCC on the evidence of the DCC900 than with at least one similarly-priced DAT recorder of my acquaintance. It would certainly be difficult to find an analog deck to beat it at anywhere near a similar price.

Philips reckoned that the sonic signature of the 7350 DAC would probably be more recognisable than that of PASC compression, and I agree. (Sister company Marantz will be using DAC7.) Using the machine’s own converters (AD and DIA), there was a noticeable difference between source and copy. Copy was marginally softer, with some evidence of dynamic restraint at the lower end, and a degree of throatiness on vocals. There was also a diffused air across the soundstage.

Recording and playing back using an external DAC, a Deltec Bigger Bit, brought out the DCC traits more clearly. Primarily of course, like DAT, DCC must be due to jitter from the DCC transport or clocking system, rather than any effect due to PASC. In the end, I felt satisfied that differences between the sound of DCC and that of digital sources may well exist, but they are very small and likely to be attributable to factors other than the one most potentially controversial part of this new tape format - PASC. I am not saying that DCC does not have some slight signature, but it is very small and the more tests I performed the less certain I became about its exact nature. If anything, I would say it slightly takes the sheen off treble and it also introduces a little coarseness, both effects being very minor. As a digital system it seems pretty benign in its errors.

On balance I ended up more impressed with the sound of DCC than I had dared hope. I’ve been reminded of a remark made by Tony Griffiths at Decca’s recording studios in Kilburn, London. He said that if and when DCC went eighteen-bit, he thought it likely that its sound would discernibly surpass that of CD. It was a remark that intrigued me. It does seem that the system is inherently good enough to achieve this.

I listened to the behaviour of DCC with Rock music; the demands of Classical are different. Eric Braithwaite analyses its sound quality mainly on Classical material.

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THE LOGIC OF LOGIC

When Gerry Wirtz of Philips visited us with this DCC recorder he was at pains to point out that the Append facility is best used to start the recording process. This leads to a fair old song and dance whilst the recorder searches around to see what exists on a tape, before deciding upon where the new recording should begin. It's appears intelligent, but it is time consuming. Sometimes I found the recorder lining itself up on a small blank portion of tape it had found, ready to record over a following recording.

I'm afraid to say that Eric, Alan and myself on the magazine, being Nakamichi owners and users, found the time delay frustrating and, if you want to start recording quickly, it would be unacceptable. This is one drawback of an 'intelligent' digital tape system like DCC.

More or less instant recording is possible, providing you skip over the start of the cassette to avoid the lead-in writing process, which is also time consuming and of little value, as far as I can see. The recording will have a start flag inserted, but tracks will have to be numbered later, using the Renumber facility.

The reason for using either Append or Rec. Pause to start recording is that they enable a tape to be compiled with continuous time code and sequential track numbering. The process is a precise one requiring some commitment I found; this is the main difference between DCC and the old analogue cassette. Tracks are flagged at start and finish by dedicated markers that are inaudible. These are sensed by the forward and reverse track skip buttons (Prev./Next).

A skip flag can be inserted, allowing a track or section to be ignored without being erased. There are Mute, Next, and Reverse markers as well. All can be inserted manually and some automatically. They allow the machine to behave 'intelligently' when replaying, identifying track numbers, changing direction and what have you upon receiving the hidden commands. If you don't like a command, it can be erased. Software information like track title could not be entered on our DCC900 and track numbers are inserted by the machine; users cannot arbitrarily enter numbers from the remote control keypad.

This has its benefits and drawbacks. With commitment and care, professional tapes can be compiled. However, there are a host of obscure little traps awaiting anyone who hopes to bang away at the buttons willy-nilly. The handbook needs to contain a simply written overview on markers and compilation to help users avoid them in the first place, or correctly analyse problems so they can be rectified.

I discovered many problems with the operating logic of our machine, but when told of them Philips said they would cure the ones they hadn't yet detected (?) and that they were still discussing others, like the inability to find numbered tracks on a home recorded tape. Consequently, judgement on the operating logic of the DCC900 has to be suspended until final production versions overcome the problems I carried out.

DCC tapes are the size of a conventional cassette, but a bit slimmer. Additionally, they have sliding metal guards for protection.
DCC possesses a clever digital processing system called PASC. Based on two psycho-acoustic phenomena, it discards signals we supposedly cannot hear: those 'masked' (drowned out) by another loud sound and signals too weak to be heard. This reduces the amount of digital information so much, it can be squeezed onto ordinary chrome (video) tape.

This new form of processing by PASC poses measurement problems. By selectively allocating bits only to wanted signals, it will cope with simple conventional test tones very well. Music is more demanding to process, so meaningful tests likely to show up problems have to use signals more like music. Luckily, modern spectrum analysers work well with 'wideband' test signals that are music-like, but at present they take the form of pulses or 'white' noise, neither of which can be said to mimic music really closely.

A problem I ran into immediately with the DCC900 was that its digital section behaves peculiarly when tested for frequency response with either pulses or white noise, suggesting it may do so with music. The high frequency limit dropped from 21kHz to 14kHz or so at low recording levels. The question then became: would this result be repeated with music or was it due to the fact that the test signals were not sufficiently music-like, putting in too much high frequency energy and loading down PASC?

The answer could only come from Philips themselves and Gerry Wirtz, senior DCC engineer. He frankly admitted that PASC will start to chop out high frequency information when stressed with a full bandwidth signal. My task was then to ensure that the test signal should be very music-like, so that the outcome of tests would really represent real life behaviour and indicate how sound quality might be affected.

After experiment I settled on a special tailored noise signal that is meant to approximate music, known as IEC 268.1 Weighted Noise. It turned out that this gave the same results as other noise signals (i.e. pink and white). They all showed that DCC band limits to 14kHz or so: when fed a wide range of music energy, from low bass right up to high treble. The freedom of tests would truly represent real life behaviour and indicate how sound quality might be affected.

Frequency Response

Frequency response at high recording levels (0dB down to -10dB or so) with wideband music is flat with fractions of 0dB down from 2Hz up to 16kHz. Level at 20kHz is -1dB down.

Frequency Response

Frequency response at low-level recording levels (-30dB or lower) with wideband music reaches 14kHz; before ending, suddenly DCC relies on the fact that the ear is not sensitive to high frequencies at low levels. A small limitation in the PASC encoding system: it was to Philips' credit that they readily acknowledged this fact.

Over the rest of the audio band, frequency response remains ruler flat to within fractions of a dB, as the high resolution frequency response analysis shows. In this it is like most digital systems. Measured bandwidth (±1dB limits) is 2Hz-21kHz.

There's nothing too drastic about the upper treble loss. Listening tests on tuners show that their MPX filters, which cut out all treble above 15kHz, can just be heard to take the sonority away from metallic percussion instruments. Since PASC isn't as drastic in its action as an MPX filter, I would expect it to be even less obvious subjectively. The very slightest loss of sheen, tinkle or sonority is arguably just detectable at times, when the original is available for comparison.

Distortion levels from the DCC900 were low, much of what I measured being noise. Although the levels are similar in magnitude to those of modern Bitstream CD players, the harmonic structure is more benign, higher harmonics being absent. DCC recordings will not sound like early CD - gritty and harsh. I heard little sign of digital distortion in recordings I made, which seems to back this up.

Channel separation was adequate at 72dB. That's plenty enough to give good channel separation and full stage width on stage.

You don't hear tape hiss from DCC, unless you are playing analogue tapes of course. The DCC900 does have Dolby, but it is for replaying analogue prerecorded tapes only. Digital DCC tapes do not need noise reduction systems; that's one benefit of going digital. Hiss was very low at -93dB (IEC A weighted, true RMS).

So DCC measures well on its digital side, even though PASC will, with wideband signals, cause it to reduce bandwidth a bit at low levels. This takes advantage of the fact that the ear also loses its sensitivity at high frequencies on soft, low level signals, making the phenomenon very difficult to detect. I listened very carefully and could barely detect any change in treble character. The DCC900 does come over as slightly 'softer' in character than many CD players, but other factors, such as inherent DAC sound quality and jitter in the DCC transport, come into play when trying to make judgements about PASC alone, confusing the issue. The bottom line for me is that in spite of this small measured blemish, DCC does produce recordings of excellent quality - in this it will not disappoint future purchasers, even if on paper digital data reduction systems like PASC (Philips) and ATRAC (Sony) do seem destructive in the amount of music information they discard.

The analogue replay section was unusual and interesting. Nakamichi lift upper treble in their frequency response to ensure Dolby B tracks properly so tapes don't sound dull and muffled when Dolby B is engaged. Philips lift the upper mid-band by a few dB right up to 8kHz, but high treble falls away, possibly due to azimuth error. The overall effect is to greatly brighten and sharpen the sound from conventional cassette, something I found generally to be a worthwhile enhancement. The DCC900 sounded much 'glassier' than our reference Nakamichi ZX-9, just a bit too much so to be accurate, but it was far preferable to most cassette decks in its presentation; clean and precise I would say, rather than warm and woolly. That was the subjective benefit of the raised replay frequency response, which also improves Dolby B tracking of course, so two effects are operative.

Speed stability was good, total wow and flutter measuring 0.07%, but there were occasional speed 'jerks' up to 0.15%. The transport was a good one by normal cassette standards.

Replay noise proved unusually low at -65dB (Dolby out). There was little hum also. The replay amplifiers were quieter than most, meaning the deck will not contribute to tape hiss in any way.

Philips have paid quite a lot of attention to the replay abilities of the DCC900 with prerecorded tapes. It measured well and sounded good too.

**Measured Performance**

**DIGITAL**

**Frequency response**

- 20kHz
- -6dB 0.006 0.006
- -30dB 0.03 0.03
- -60dB 0.9 1
- -90 7 8

**Separation**

- left 1kHz 74 70
- right 74 70

**Noise (IEC A)**

- -93dB

**ANALOGUE**

**Frequency response**

- 30Hz-14kHz
- -65dB

**Speed accuracy**

- +0.7% fast

**Speed stability (W&F, wtd.)**

- 0.07%
One of London’s stranger museums is dedicated to radio. It’s not an annexe of the Science Museum, nor is it ‘sponsored by industry’, nor can you get in easily! In fact, this museum is a well kept secret, yet it has functioning radio and television transmitters, working exhibits and even the ability to remake early valves. In it we discovered the origins of hi-fi in Great Britain; we also met its sole owner, the effervescent and enthusiastic Gerald Wells.

**British Vintage Wireless Society**

**Radio Museum**

Report by Noel Keywood.

Picture captions narrated by Gerald Wells, keeper of the museum.

Strange? Well, as museums go, the British Vintage Wireless Society Radio Museum is all of that, but it is also fascinating and delightful. Gerald has turned over his entire house and life to preserving the past, quite obviously it is a monumental task, yet one he copes with ably every day, ferrying around a constant flow of visitors. Helped by members of the Society (from now on referred to as BVWS), Gerald has restored many of the exhibits to working condition, which adds life to the whole enterprise.

The latest outlook in museums is to offer the public displays that are in context and/or working or interactive, like the Museum of the Moving Image on London’s South Bank, or Bradford’s Photography, Film and Television museum. Gerald has neither the space nor the resources to match them, but he does a wonderful job in tirelessly demonstrating his main exhibits in good working order.

We slowly got drawn in as we were shown around. Perhaps lines of brown wooden-cabineted radios from the turn of the century on would, alone, not be enough to sustain people’s interest. The BVWS museum has progressed well past that stage, even though radios line the walls of every room in the house, including the halls and two large outbuildings. It has early televisions, tape recorders, a large collection of valves in glass-covered display cabinets and advertising display signs and part of a shop interior from the 1930s.

High Fidelity sprung from the radio industry. It was derived from the need for Public Address systems (Quad and Tannoy initially made PA equipment) and the transmission of entertainment programme via public broadcasting. We saw clearly how the various components needed for playing records, for listening to radio and for reproduction of sound in the home were developed separately, but came together to form hi-fi.

By the 1920s simple radios were available to the public. People commonly built and maintained their own, often from kits or plans published in magazines like Wireless World. Headphones were used for listening, or a small and crude horn amplified the sound from what was little more than a headphone earpiece. The BVWS museum has many of these early radios in working order. Apparently, in its early form it had to be driven by an amplifier, realised we were looking at the world’s first active loudspeaker!

Other firsts in hi-fi soon appeared. The R. I. Varley articulated pick-up arm and Varley moving iron hom. The R. I. Varley articulated pick-up arm and Varley moving iron hom. The BVWS museum has many of these early radios in working order.

One of London’s stranger museums is dedicated to radio. It’s not an annexe of the Science Museum, nor is it ‘sponsored by industry’, nor can you get in easily! In fact, this museum is a well kept secret, yet it has functioning radio and television transmitters, working exhibits and even the ability to remake early valves. In it we discovered the origins of hi-fi in Great Britain; we also met its sole owner, the effervescent and enthusiastic Gerald Wells.
A cabinet standing in Gerald's bedroom and I noticed it had a small monitor TV in it. The role of this enormous device became clear later, as we reached the early televisions. To be seen working, they needed 405 line TV signals. So when the BBC ceased transmitting 405 from Crystal Palace (just up the road) the BVWS museum gratefully took in their standards convertor unit. It derived the old 405 line standard from modern 625 line transmissions, in order to provide a service for those people using old sets in Britain.

The BVWS had to carry out some difficult repair work on this one-ton monster - and Gerald had to check that his bedroom floor would take the weight before it was shipped in! Now it feeds modern transmissions to the old sets; we saw a fine black and white picture of Wimbledon on a 1937 radiogram with a television in it. This impressive item was owned by the American multi-millionaire, John Paul Getty Senior. It fascinated us for many reasons. The BVWS have restored it to perfect working order, showing how good TV performance had become just five years after the first public television broadcasts were made in 1932 from Alexander Palace, North London.

Also, we learnt that his son, John Paul Getty Junior, who lives in Britain, and who donated the radiogram to the museum, also provides essential financial support. We knew of his love of cricket and his philanthropy - we didn't know that he had an interest in the history of broadcasting and was supporting this fascinating museum in South London.

This final twist to the tale seemed wonderfully appropriate. The British Vintage Wireless Society Radio museum may be unusual, even strange, in the way it is organised and run, yet it is also delightful and fascinating, a true labour of love on behalf of its keeper, Gerald Wells, the BVWS members who combine their talents and time to restore the exhibits and John Paul Getty Junior who supports the enterprise. To us, it was one of most interesting and informative collections of vintage radio and hi-fi we have ever seen.

"A Gecophone made in Sept 1922 in time for broadcasting by the BBC from November 1922. Every set had to have a BBC stamp on it to show that it was approved by the Postmaster General. It would drive a pair of earphones, but it also stood on a simple amplifier that drove a small horn loudspeaker. It was disguised in a smokers' cabinet because everybody smoked in those days."

"This is an early articulated tonearm from R & L Varley. It gives lovely lightweight, spring-loaded, parallel tracking; it only puts one-quarter pound (113 gms) on a record! With a sharp-ish needle they gave a cheerful sound."

"A 1934 radiogram from His Master's Voice. It was top-of-the-range in its time and had variable selectivity on long and medium wave. An automatic record changer would take 10 or 12 in records. There were about ten valves, and a push-pull amplifier delivering about 4 watts output. It had a 10in special HMV moving coil electrodynamic loudspeaker that looks like a development of the Rice Kellog loudspeaker. The cabinet was made from solid or good laminated woods, which made it really heavy. The lid was damped so it didn't close with a thud. Nearly sixty years later it still has its original valves and they work perfectly. Mind you we did have to change every condenser in the set because they didn't make those so well."

"This German Minifon wire tape recorder had three valves, an HT battery an LT battery and another battery in there for the motors. It gave about 10-15 minutes recording and you had a small microphone you could plug in. It was built about 1947-8 in Germany."
little over 100 years ago Gianni Bettini became the world's first audiophile. As an Italian cavalry officer visiting New York in the late 1880s, he was intrigued by the newly introduced Edison wax cylinder phonogram yet unsatisfied with its poor audio quality. Using his flair for things mechanical Lieutenant Bettini began to turn this business dictation machine into a device which would satisfy music lovers and to ensure the ultimate fidelity he opened his own recording studio on Fifth Avenue. There he made the first realistic recordings of famous contemporary opera singers and built up a fabulous collection of celebrity cylinders including his holiness Pope Leo XIII. His 'micro-reproducer' phonograph was first in a line of successful models and today A-T salutes him as a true pioneer of high fidelity.

At Audio Technica we strive toward the same goal, using unrivalled micro-transducer know how to reduce the weight of Bettini's original device to the mere few grams of our latest moving coil series. Below we proudly present our 'reference' specifications but add one small note of caution. At this level 'numbers' do not tell the whole story as component compatibility and musical taste come into play. We thus urge a personal audition at one of our hand selected A-T dealers to fully assess requirements.

Meanwhile, please contact the A-T sales office for a complete selection of press review copies.
“Early television tubes were very long, so they stood them upright in the cabinet and fitted a lid with a mirror in it. This one was made by the Radiogram Development Co. It came out of Sutton Place, the home of J. Paul Getty Senior. He got it when he bought the house from Lord Northcliffe, who owned many newspapers. His son, who supports this museum, gave it to us. By the way, if it were not for his support we probably couldn’t keep this museum going. A team of engineers took it to pieces, changed every bit of wiring and all the condensers, de-rusted it and got it going again, but all the valves are original. It had about 30 valves in it. There’s a radio, television, push-pull amplifier, twin speakers and auto-changer. It cost about £160 in its day. The average man was earning £2/week so that was an awful lot of money. You could buy a cottage and a small car for the same amount.”

“Here’s the Rice Kellog loudspeaker made by the British Thompson Houston Corporation in 1928. It has two triodes in parallel driving it (they were forerunners of the PX-4) driving the loudspeaker which was energised from the mains, because they couldn’t get a permanent magnet that was strong enough. You could put the output of your radio into it and get a very pleasant sound - probably about 1.5 watts of power.”

“It has an 8in unit in it with a reinforced paper cone diaphragm. There was an enormous mains transformer and pair of diode half-wave rectifiers delivering 900 volts to the anodes of the output valves. It was a killer; it has safety traps on the back so that if you pull the back off whilst it is switched on it will shut down. It would have to have been a rich man who had one of those in his house.”

“Here’s a Pye Black Box. The cases were made by Challin pianos, because they were one of the few companies that could make the raised chinoiserie patterning you see on the cabinet. It cost no less than £60 in its day, but for £30 you could get one with a plain brown cabinet. It has a four valve amplifier with ECL83s in push-pull driving Rola (Celestion) loudspeakers on either side. It had a BSR Monarch deck with 33, 45 and 78 rpm. It came out around 1960.”

Gerald Wells beside his 405 line TV Standards convertor. “The Standards Convertor was given to us by the BBC. They sent it down from Crystal Palace in 1985, the day after they closed down 405 line transmissions. It needed to be rebuilt and the job was carried out by Lucien, who was 14 at the time. He was designing valve amplifiers when he was nine and has an IQ of 170. He’s at Manchester University now studying electrical engineering and he still helps us out an enormous amount. He’s the only one who has enough knowledge to be able to fix the more complex things; he has an enormous knowledge of vintage equipment and loves it. He was also small enough at the time to be able to get into the case to replace the diodes in the carousel. It’s very complex, yet in a few days he had got it all stitched together and working.”

For further information about the British Vintage Wireless Museum telephone 081-670 3667.
The size of the LFD pre-amplifier results in a neat but sparse looking layout. It uses a low hum toroidal transformer seen at left.

The LFD range is made up of two Moving-Coil disc stages, the Phonostage MCI and MC2, two line-level pre-amplifiers, the Powerstage PA1 and PA2, and an integrated amplifier. If the outward design is understated to the point of elegant simplicity, with pure white fascias, discreet blue labelling and chunky white knobs so are the names: there is also an integrated amplifier fancifully titled the Integrated I.

We are looking at median high-end prices: we had the Phonostage MCI at £749, the Linestage LS1 at £799, the Linestage LS2 at £1230 and the powerstage PA1 at £799, coming in at nearly two and a half grand for the entry level set; for the really well-heeled, there are two disc pre-amplifiers, one costing a pound less than four grand and the other £4750. LFD provided their own cable: Spirolink II, at £74.95 for 1.25m, Trilink at £184.95 for the same length and Spiroflex II speaker cable at around £49.95 for three metres.

Operation and connection is straightforward: the Phonostage has a separate DC power supply and all signal connections are by standard phono sockets. Given the increasing proliferation of sources users are likely to acquire in these digital days, the number of inputs on the Linestage does look a trifle sparse. There is one pair of inputs for Tape, and room for four other sources labelled Video, Tuner, CD and Phono. Very usefully, signals are routed so that a recording can be made while listening to another source via identical 'Listen' and 'Record' controls on the.

**Measured Performance**

The LFD PA-1 Powerstage, as it is called, produces a modest output of 60 watts into normal eight ohm loudspeakers. Not enough to make reasonably sensitive loudspeakers (86dB SPL or more) go loud in most rooms, but it isn't enough to raise the roof. This is an amplifier for 'sensible' use, and it joins many others in being so. Modern amplifiers get no more powerful, mainly because quality is usually the prime concern. Output rises to 90 watts into four ohms - not an especially large increase but at least the LFD doesn't flinch at low loads - unlike the UK-designed Aura VA-100 and Alchemist amplifiers I have tested recently.

The CD input has a wide bandwidth but like so many modern amplifiers the LED reaches up further than is either necessary or wise with CD. Anything above 21 kHz is strictly unwanted and shouldn't be amplified. The LED's gain starts to roll off much higher than this frequency, at 64kHz in fact. It doesn't damn the amplifier by any means, but there has been speculation that this sort of thing could affect sound quality.

The low frequency limit via CD did match that of the medium itself: 4Hz. In this the LFD is better tailored to complement the medium than most of its rivals.
front panel. Two pairs of phono sockets provide output so bi-ampering is allowed for. On/Off switches are placed at the near, mains input is through IEC sockets.

After admiring the substantial and tidy build of the LFD components, the instruction manual came as a disappointment. It’s clear, and informative, but . . . It jars to read “The prime aim of the company is pride of ownership” on the first page of a series of A4 pages with only basic line drawings for illustration. This kind of thing - and I see it too often - simply doesn’t gel with the price. Nor does the polystyrene packaging, which proved extremely friable.

**Crystalline**

Beginning with the sharp end, the MCI disc stage into both LS1 and LS2 through the Powerstage PA1, was an extremely lucid, crystalline performer. Both instruments and vocals were diamond-edged, discs coming through with transparent clarity, every facet firmly in place. Recordings were extremely lifelike, perfectly proportioned and holographic. Ambience and depth were reproduced near-perfectly, with pinpoint imagery and extremely stable positioning.

Reverting briefly to feeding my Gyrodec/SMEIV/Morch da Capo into an Iso, there was a perceptible difference. Whereas the Iso expands the air and space around and between performers, and minutely displays tiny timbral nuances - especially in string instruments - with immense clarity and subtlety, the MCI produces a sharp clean holistic picture. Bass, though, is noticeably on the lean, dry side. Despite - or because of - a higher impedance than I would normally use, it fitted the da Capo like a glove. Gain is very high, however, which is liable to have a user leaping across the room to turn the volume down after using a line-level source.

Turning to a digital source, an Arcam Delta 170.3 with Sugden SDA-1 DAC, nearly comparable in price, elicited the same diamond-faceted sound through the Linestage LS1 and the Powerstage. Each element of a recording is held in its own space, sparkling clear, reaching high into the treble. My 20-bit jazz recording came through bright and fast, with the placement of each microphone vividly obvious. This was startling, more like the way I heard the band being recorded in the studio through enormous Genelec power amps and monitors than I would have believed my ESL 63’s could ever be capable of.

Absolutely no complaints about the tonal fidelity of the pre-power combination, here, apart from a slightly sour edge to the upper notes of first violins on a Classical recording. There was a hint here, unlike the relative smoothness of the disc stage, which couldn’t quite be tamed and suggests some caution is required with digital partnerships.

Swapping briefly to a Michell Argo with Hera power supply, not too distant in price, suggested that the LS1 was more dominant in the mid-band and treble. I had observed more apparent surface noise from LP through the disc stage, and checking through a number of CDs, it became noticeable that the LS1/PA1 produced a very sharply focussed soundstage with brilliant attack at the cost of a tiny degree of subtlety in timber. The Powerstage proved remarkably transparent, allowing the slight degree of additional air and space of the Argo through without hindrance and, it turned out, an impression of deeper, warmer bass.

The more expensive Linestage LS2 is outwardly exactly the same but for a green LED indicating power-on and a volume control that lacked the ‘click-stop’ action of the LS1. It brought an overall improvement commensurate with its higher price. While some upper violin notes still had a slight sharpness on CD, overall response was otherwise silksmooth and brilliantly clear. The degree of depth was also more marked and filtering on instruments attained that extra degree of subtlety. Both, however, tended to narrow the available width of the soundstage slightly, the LS2 less so than the LS1.

This was most noticeable on Miles Davis’ Dingo, where although every single player and instrument was clearly delineated, at one point the mix appeared to be less expansive and a little smaller in scale than I believe it really is.

**Clear Sightedness**

I’m not usually a fan of cables for the sake of it, but LFD’s own - though far from cheap - were certainly very successful in maintaining the combination’s remarkable clear-sightedness, though I discovered that Kimber cable also worked well as an interconnect.

LFD have engineered a pre-power combination of great lucidity and clarity, one that turns a domestic system into the nearest approximation to an idea recording studio control room I’ve ever heard. Nothing on a recording escapes it - every musical element is ruthlessly pinned down in time and space. It provides an unerringly truthful - and consequently occasionally painful - picture of both recording quality and the music. Incidentally, it also offers an equally analytical eye to its partnering equipment, requiring the very best of sources. It’s a diamond necklace in a world of plastic - but without a Tiffany price tag.

Generally, I find that good low frequency extension adds a subtle but tangible sense of openness and fluidity to the bass. Low noise and high sensitivity were both useful features of the CD input, but channel separation was disappointingly poor at high frequencies. I’ve noted a few times recently, when faced with this problem, that luckily for manufacturers, any value better than around 25dB appears good enough to convince listeners they are hearing full stage width. It should be possible to achieve 50-60dB right across the audio band, especially when there’s no balance control to adversely affect performance, as on the LFD.

Distortion was pretty low, I found. Even at high frequencies, and at high levels, an area where most amplifiers start to reveal weaknesses, the LFD hangs together pretty well, generating just 0.07% distortion. Second harmonic, the predominate artefact, was pinned down in time and space. It provided an unerringly truthful - and consequently occasionally painful - picture of both recording quality and the music. Incidentally, it also offers an equally analytical eye to its partnering equipment, requiring the very best of sources. It’s a diamond necklace in a world of plastic - but without a Tiffany price tag.

The MCI disc stage for moving coil cartridges has an input impedance of 150ohms; the MCI2 stage has 50kohms. I tested the former; the instructions say the MC2 is identical except for the input impedance value, so my results apply to both. Like the CD input, the disc stage has an extended low frequency response. Trouble is, it starts to roll off slowly in the lower mid-band and in practice such a long slow roll-off can invariably be heard as bass leanness I find. That LFD should extend low frequency output so far, yet let it sag, is curiously contradictory. High frequency extension was to 48kHz, a sensible feature.

At 40dB, channel separation was adequate for disc. The signal-to-noise ratio looks poor at 60dB, but this industry standard measurement doesn’t take gain into account. The LFD phono stage has enormous gain, giving it an extremely high input sensitivity of 0.7mV (70μV). The only useful measure of noise that does take gain into account is something known as ‘equivalent input noise’. The LFD was up with the best here, so in fact its MC input is very quiet. It has been designed to accept high quality, low output moving coil cartridges. It is best used with them, since high gain brings a commensurately lower overhead ceiling - in this case just 2mV against a common value of 10mV.

**Specifications**

<table>
<thead>
<tr>
<th><strong>Parameter</strong></th>
<th><strong>Value</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Power</strong></td>
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<tr>
<td><strong>CD/tuner/aux.</strong></td>
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<tr>
<td>Frequency response</td>
<td>45Hz-64kHz</td>
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<td>Separation</td>
<td>68dB</td>
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<td>Noise</td>
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<td>Distortion</td>
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<tr>
<td>Sensitivity</td>
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<tr>
<td>dc offset</td>
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<tr>
<td><strong>Disc (MCI)</strong></td>
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<td>Frequency response</td>
<td>53Hz-48kHz</td>
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<td>Separation</td>
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<tr>
<td>Sensitivity</td>
<td>0.007mV</td>
</tr>
<tr>
<td>Overload</td>
<td>2mV</td>
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A.R.T. PULS'EX BOX

One of the greatest joys of tweaking is when you play with things that are totally inexplicable. The nuttiest aspects of tweakery are so off-whack that they should be published in 'Fortean Times' or 'Old Moores Almanac' rather than in a hi-fi magazine. Attempts to rationalise such endeavours almost always end up at the point where physics meets parapsychology and look as if the author would be more comfortable writing an article on Astral Projection, or Knitting Your Own Aura.

One of the latest adventures in off-the-wall strangeness comes from A.R.T. Not to be confused with the UK manufacturer of valve amplifiers, Audio Reference Technology hails from Italy, where they produce a range of extremely high-end equipment and accessories. The man behind A.R.T. is none other than Bê Yamamura, he of the battery-powered, valve power amplifier that involved a floor full of car batteries. Bê used to reside in this country, but we British could not sustain such a high-end superhero, so he moved to the land of Ferrari and Armani.

The Italians evidently take their hi-fi very seriously and Bê's extreme ideas were accepted with both open arms and open cheques. Unlike many of the tweak gurus, whose claims are accepted with both open arms and open cheques. Unlike many of the tweak gurus, whose claims are taken very seriously and Bê's extreme ideas are based on an advanced knowledge of hi-fi. His theories sound totally inexplicable. The nuttiest aspect of tweakery is near impossible; it is a world of bits and pieces, starting with the magical Puls'Ex Box at £185, for connection between a Compact Disc player, or DAC, and amplifier.

A Small Device

The Puls'Ex Box is a small device that sits on four feet. It has two pairs of gold phono sockets fore and aft for connection between the CD and amplifier, with an earth binding post on the 'Out' side should any extra earthing be needed. As it is completely passive there is no battery box or mains lead.

Essentially, the Puls'Ex Box is a notch filter, using a handful of very carefully specified components designed to cut out a large amount of grunge at and around the notch frequency. Normally, a notch filter in a hi-fi system would, at best, be treated with scorn, except that this filter operates up in radio frequencies, somewhere between the top of the Short Wave band and the bottom of the Frequency Modulation dial (30MHz-80MHz). The precise frequency is where A.R.T. get secretive. CD should not produce anything above 2kHz and most people have no hearing abilities at this level, so therefore this box is essentially doing nothing to the sound, right?

If the Puls'Ex Box does nothing to the sound, then it does it in the most positive manner I've ever encountered. In the past, companies such as Deltec have used RF filters at the mains to help reduce some of the problems inherent in high-quality DACs. To my knowledge, this is the first time such a filter has been used in the signal path. When I first tested this little box, I felt that my judgements had to be clouded. It was only when I played a Pioneer PD-9700 to a number of people involved in the hi-fi industry that I accepted that I was not deceiving myself.

The person who summed up the changes the Puls'Ex Box made best was Zia of Tube Technology, who commented that it made the CD player sound more 'Analogue-y'. The changes were difficult to describe in conventional hi-fi terms, although I did notice a slight smoothing of the overall sound. It didn't appear to alter the balance of the Pioneer's sound at all.

I never glossed over the detail that the player produced; if anything the detailing was almost perceptibly heightened. What it did was remove the tiring nature of digital sound. I have been called a bit of a digiphobe, yet, in defiance, I find that it is difficult to listen to more than one track on an average CD player, with the Puls'Ex Box, my CD threshold expanded to about three or four tracks. I found the process of digital listening far more rewarding than before, although trying to equate these improvements to tangible ideas is near impossible: it was simply better.

The improvements made are so subtle, yet also so positive that it is a clear recommendation. £185 may seem a huge sum of money for a 'magic' box, but it represents a far greater improvement to CD sound than £185 normally brings. At the lower echelons, if you have the choice between buying a four hundred pound CD player, or a two hundred pound player with a Puls'Ex Box, my CD threshold expanded to about three or four tracks. I found the process of digital listening far more rewarding than before, although trying to equate these improvements to tangible ideas is near impossible: it was simply better.

At the next level, however, the choice between a six hundred pound player and a four hundred pound player plus the Puls'Ex Box becomes less clear. Indeed, I would plump for the latter, in most cases. The Puls'Ex Box presents a difficult case as I don't know why it works, but I simply have to accept that it does and works very well indeed. For the nearest A.R.T. dealer contact (081) 876 6976.
Far more explicable than any of the ART goodies, at £76.99, The Can Opener is a device that should be on the shopping list of every owner of a purist amplifier without a headphone socket.

 Normally, an internal headphone amplifier is a difficult stumbling block for a designer to produce without it interfering with the overall sound. Most designers of integrated amplifiers with audiophile pretensions produce some kind of direct output loudspeaker terminals that by-pass the headphone socket altogether. In more purist (or should that be 'Puritan'?) amplifiers, the headphone socket is removed altogether, leaving the cleanest path for the signal to travel.

**A Little Night Music**

This is very acceptable for those who have no intention of using a pair of headphones; but for those who have no choice it creates a serious problem. The headphone option does prove very useful at times; with a pair of closed 'cans', it is possible to listen to music, while another watches television, without extreme amounts of leakage. Also city-dwellers who have neighbours can listen to their favourite music at any time, without fear of offending. When, after a long period of work, I decided to listen to some music, I blessed the little Can Opener as it was about 1.30am and I felt that the neighbourhood would not like a rousing chorus of Hüsker Dü at full blast.

If you can wire together a pair of loudspeakers, you can operate The Can Opener. At its rear, it has left and right 4mm sockets like a power amplifier, and a stereo jack plug at the front for the headphones. As such, The Can Opener fits in the system in the place of loudspeakers. Switch the amplifier off, waiting for it to discharge if necessary, remove the loudspeaker cables and replace with cables attached to The Can Opener. You do have to provide your own lengths of cable 'twist amplifier and Can Opener, but this is not a major problem. I used a single piece of Linn's excellent K400, as it has four connectors in one cable. It is about ten inches long, but is a little inflexible.

This is where we encounter the biggest difficulty with The Can Opener. If your equipment is neatly stacked away, then using the headphone adaptor is a major hassle. In my system, where there is comparatively good rear access, fitting The Can Opener takes seconds, but in a system where access is severely limited, it could prove more trouble than it is worth. One could use the loudspeaker cables, by plugging The Can Opener in at the loudspeaker end, though if using bi- or tri-wired loudspeakers this could prove fatal to the amplifier if the loose 4mm plugs made a short circuit. In addition, having to trail the loudspeaker cables across the room is rather ungainly.

That aside, the main advantage of The Can Opener is its ability to make the headphones take on the sound of your beloved amplification. If you are a Naim fan, then your headphones display all the pace and musicality of a good Naim system; if an Audio Innovations lover, then the warmth, clarity and transparency shine through and so on. The sound quality is so much better than the normal headphone socket fitted on amplifiers, or within cassette recorders and some CD players, as to make its use well worth any inconvenience caused. It also, obviously, upgrades with your system; if you move from a Nait to a Naim 52/250, or from a Series 500 to an Ongaku, so the headphones upgrade with the system.

Normally, the tweaks pages consist of little goodies that allow a system to be slightly improved. The Can Opener is different. It adds nothing to the system except flexibility, yet this flexibility allows one to listen to music at times that were previously impossible. For that reason alone it is well worth the money. The fact that it sounds better than most built-in headphone systems is icing on the cake, but it's a very good icing.

Contact The Den on (0535) 606086.
KEF's old C-series range of loudspeakers has been replaced both by the KEF Q' range and the 'K' series, of which the £219 KI40 tested here lives in the middle. The Q range has already achieved some considerable acclaim, not least from this magazine, where we found the top of the range Q90 to be an excellent floorstanding design.

KEF's new KI40 loudspeakers are a high efficiency design.

Alan Sircom checks the sound levels.

Unlike the Uni-Q range, with their distinctive multi drivers, the 'K' series uses a more conventional approach. Instead of placing all the drive units in the same housing like the Uni-Q, the KI40 is a standard two-way loudspeaker with bass and treble units on a different axis. Intended to be wall or shelf-mounted, the sealed-box KI40 sports typical KEF plastics technologies for both bass driver and domed treble unit. This gives the KI40 a moderately high claimed efficiency of 89dB (1w/1m) and a nominal impedance of eight ohms. As such the KI40s are an easy load and will not trouble, or be troubled by, any amplifier in the 10-100 watt range. In addition, their claimed maximum sound pressure level of 109dB means that they are capable of going loud when it comes to playing the latest Extreme Noise Terror disc.

In a land where loudspeakers are becoming smaller and smaller, the 8.7kg KI40 are a healthy size, standing blind-effect front baffle distinguishes the KEF design from the others.

The K series manual supplied with the loudspeakers is simple, clear and bilingual, which is useful if you want to test your conversational French on a passing Gallic audiophile. There are a couple of minor mistakes, perhaps partly due to it serving the entire K series; it mentions magnetic catches to hold the grilles in place, while in fact conventional blind-effect front baffle distinguishes the KEF design from the others.

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Like most speakers with plastic drivers, the KEF K140s needed a healthy run-in period. The ones supplied for review, however, had a unique characteristic that I had not encountered before. At first, I felt despondent about them; they sounded dull and lifeless. Throughout the running-in period, there was little change. Suddenly, in the time it took for me to make a cup of tea, the loudspeakers warmed up fully. Then they had a typically KEF sound, one which was clean, clear and dynamic, but also slightly antiseptic. What really impressed me was their imaging abilities, especially when the price and their positioning are taken into account. While the soundstage lacks some front-to-back depth and does not 'breathe' in the way an Epos ES11 is capable of, the overall quality of the imagery is very good indeed. Regardless of the rear wall flattening depth perspectives, the 140s still managed to delineate images in a soundstage with ease; to date, I have only found one loudspeaker in this class that can better their abilities in this respect, the Rogers LS/2a2. For a comparitively low-cost loudspeaker, the K140s are superbly coherent; in some respects more so than their Uni-Q siblings. Although correctly aligned in the same axis, making for good imagery, the Uni-Q drivers can sacrifice the ability to define two similar sounding instruments when not partnered with the correct equipment. The 140s, with their more conventional drivers, are adept at expressing these differences. These two aspects, coherence and imagery, make the 140s appear highly transparent for the price. Next in the list of priorities comes their ability to resolve fine detail, which again approaches the class of those that excel in this respect, such as the Linn Index IIIs, although I prefer the KEFs' overall sense of balance. The 140s' biggest drawback, however, is that they rarely seem to get out of first gear; music played through them can seem superficially a little bland and unsatisfying, even though a lot of detail is conveyed. They can bring a refinement to music that may not be to everyone's taste. I experimented with a variety of sources and amplifiers, because of this unsatisfying aspect and came up with some conclusions. First, the 140s are superb with Compact Disc sources where they relax the 'digitalness' of the treble, but they can sound a little bland with a record deck. Secondly, they need an amplifier that is slightly bright and exciting sounding, otherwise I feel that boredom would quickly set in. My pet prediction for these loudspeakers is that we shall see them powered by Pioneer A400 amplifiers, as the two would appear natural partners. I am not normally inclined to make system recommendations in a review, but the K140s cry out so much for an A400, or amplifier with a similar sound, that it would seem churlish not to mention this fact. I have some reservations about the K140s but it is easy to find reservations about any loudspeaker at their price. They would not be first on my list; I would rate the Rogers LS/2a2 and possibly the JPW AP2 as better all-round loudspeakers. In certain circumstances, however, the KEF K140s could be a perfect system match.
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0773 762947
Wharfedale's latest 'Performance' loudspeakers, the 415 costing £149.90 and the 425 costing £199.90, have a distinctive family appearance. Finished in the current Wharfedale grey baffle/black vinyl wrap style, they are identically styled; only size sets them apart at first glance.

The smaller of the pair, the 415, is still larger than the average bookshelf speaker; it measures 351mm high, 240mm wide and 195mm deep. The 425 is scaled up a little to 400mm high, 265mm wide and 250mm deep. Both share the same Wharfedale-made 25mm metal dome tweeter and both have Wharfedale-built polypropylene mid/bass cones; 170mm diameter on the 415 and 200mm on the 425.

These speakers also understandably share the same basic construction. They vastly superior sonically. Where the two are similar is in their ability to project treble detail forward, giving an exciting 'up-front' sound. With the 425s, this creates the appearance of a vocalist only a few feet from the listening position; on the 415s, however, the same vocalist has taken several steps forward and is now perched, rather uncomfortably, inches from your head.

I find this 'impressive' sound rather tiring after a while and, with the 415s, it proved to be too taxing too quickly. Also, the treble of the 415s was often discomfiting, especially on any recording that suffered from an overbright mix. While with the 425s sins of brightness could be overlooked, there is a ragged nature to the 415s that is unforgiving. Playing early Cure, such as 'Boys Don't Cry', the spittiness and brightness of the recordings became over-prominent.

Partnered with certain budget equipment, such as the Harman-Kardon 6150 amplifier with its smooth sound and deep bass, or the warm-sounding NAD amplifiers, their bright nature may provide a satisfactory balance to some. With a bright or forward sounding Compact Disc player and amplifier though, the 415s will tip the balance too far, becoming over-bright and harsh.

The more expensive 425s fared rather better. Although their treble was still spiny and bright, this was not so noticeable that it dominated the performance of the loudspeaker. In fairness to the 415s, such balance was achieved using LFD's hybrid cable: solid-core to the treble, multi-strand to the bass. Using ART cable single-wired on both loudspeakers changed the overall balance of the 425s, bringing them more into line with measurement.

The 425s should - according to the measured performance - be the brighter speakers, and to an extent this was true. Between them, however, the 425s had a
Point 1. The AX-R742 (that’s the amplifier in the foreground if you’re not into serial numbers) has the kind of startling features to impress the most enthusiastic hi-fi enthusiast.

Six pre-programmed graphic equalisations plus six more you can create yourself. And for those even more in the know, it can handle both moving magnet and moving coil cartridges.

Point 2. The high-performance single cassette deck (TD-R452) has a new high-tech direct drive motor for purer sound. Designed to decrease vibration, the deck also includes CD direct, Dolby B/C NR and Dolby HX-Pro.

Point 3. The CD player (XL-Z452) has the unique JVC 1-bit PEM DD which delivers highly accurate sound. It’s less prone to mistracking and read-out error and includes an optical digital output.

Point 4. The receiver (RX-506) has a built-in graphic equaliser and Dolby Pro Logic Surround for cinema sound experience at home.

Point 5. Each unit has a COMPULINK control system so one remote can control all JVC compatible components.

Point 6. You don’t need to understand it all, you do need to listen to it all.
The size difference was reflected in the sound; the 415s produced a smaller sound than the 425s. The broader dynamic range of the 425s allowed the scale of powerful music to be displayed, if not in full colour, at least in 'enhanced' monochrome. They still have some fire in the treble, with a sting that can be hornet-like with the wrong amplifier.

The 425s will best suit softer sounding partnering equipment. A loudspeaker like this could work with valve amplifiers, especially as its sensitivity is comparatively high.

Unfortunately, current valve amplifiers loudspeaker like this could work with valve amplifiers, especially as its sensitivity is comparatively high. The Wharfedale 425’s measured performance looks pretty good; it made me sneak a quick listen before Alan took them away for a more thorough assessment. It was interesting to hear exactly what the measured performance suggested would confront me, at least in basic outline. I expected a neutral delivery, except for some possible brightness and possibly a spit in the treble. If that doesn’t sound very “neutral” to you, let me explain. Absence of broad dips, peaks or trends guarantees a certain basic honesty of presentation. Too often, response peculiarities, or the effects that cause them, inject a character that, even if it is liked, compromises the basic reproduction accuracy of a loudspeaker. Whether this matters or not is best decided by the individual. Personally, accuracy is a prerequisite for me; if the speaker still sounds bad then it is due to other problems.

The measurements here reveal fundamental characteristics - and those of the 425 look good. A third-octave frequency response (not shown here) and the impulse frequency response are both commendably flat as loudspeakers go. The two drive units have been matched together well, avoiding an upper mid-range dip. In fact, the tendency for output to rise in this region, instead of fall or dip, suggests the speaker will sound almost brashly forward in comparison to many others. There’s no doubt it will not sound bland, soft, warm or anything similar.

The lift upward above 5kHz in the tweeter’s output, culminating in a sharp peak at about 16kHz suggests the 425 will display a sharp sound; I found its treble “acidic”.

The low frequency response of the 425 peaks at 160Hz and tails away below this frequency, showing that the speaker is intended for use against, or close to a rear wall. The peak is to compensate for wall suckouts, the fall-away for reinforcement at lower frequencies. In its proper position, the resultant response will be flatter; for measurement the speaker has to be kept away from reflecting surfaces.

The 415 is a little less flat than the 425 and it has more energy across the lower mid-range. I would expect a slightly less bright presentation, but one that was fundamentally well balanced in tonal terms. On speech and vocals in particular it should sound a bit fuller and possibly a little more faithful than the 425, if less revealing. The tweeter peaks up like that of the 425, so the same treble sting will be apparent. An absence of deep suckouts means that no

**Measured Performance**

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After a very slow run-up, stereo sound for television finally reached us - or at least a fair proportion of us! - at the end of last year. As usual, the Brits, having developed the carrier, ended up pretty far back in the race to broadcast in stereo. But then, it seems that television viewers in this country are not exactly quick to buy new TV's either - it takes the impetus of a World Cup or the Olympics for us to chuck our steam-driven sets away and opt for something more modern. I'm no exception, I might say.

Motion Electronics, offering me their £211.50 Nicam Stereo TV Sound Decoder did, however, manage to spur me into movement. After a few weeks living with stereo TV sound now, I wonder why I've been so tardy about it. After all, I don't listen to my hi-fi mono recordings for anything like the ridiculous proportion of time I've been listening to my mono telly. Mind you, I was a bit slow off the mark getting round to watching in colour as well.

**Mixing It**

Stereo sound certainly adds a great deal to the visuals, though for someone who listens mostly to hi-fi it can be a somewhat disconcerting experience at first. One of the saddest realisations is that even after a few months, the proportion of stereo broadcasts is still relatively small. Worse, it's hard to accept that so many game shows and late-night interview programmes need to be in stereo at all. It's obviously much cheaper to turn out a stereo mix in a studio from half-a-dozen lapel microphones than it is to record in stereo on location, but the balance is out of proportion.

For an analytical listener, one of the delights of the Motion tuner is that you hear the quality - or restricted response - of those throat mics with almost

"Motion's tuner is exemplary at conveying detail with great clarity, and with startling background silence"
irritating clarity. One of its problems - which is why stereo television listening can be disconcerting - is that the stereo balance is very different to what listeners to radio documentaries or drama are used to. Focus - particularly on speakers - is much narrower; dialogue is placed in a relatively small area centrally. This is particularly disconcerting with chat shows when you hear some bores pontificating Centre-Left, but you see him centrally in Close-Up; inevitably, this has to be done or the sound would be at odds with the image, which for those of us without TV projectors and twenty-foot wide screens is a necessary compromise.

Depth and Detail
All the same, it takes a period of adjustment. Watching Casualty - or even East Enders - it is a little while before one comes to terms with sound effects flung wide and dialogue less spread. That said, Nicam stereo charms instantly with its portrayal of depth and detail which is associated more with film soundtracks than TV sound.

Motion's tuner is exemplary at conveying detail with great clarity, and with startling background silence. It is also high on the achievement scale - close to a really good FM tuner - in portraying depth, perspective and ambience. TV sound engineers are admirably skillful in balancing dialogue, music and effects, and the Motion tuner showed up their skill with crystal clarity. Musically speaking - that is, attempting to listen to programmes with a musical content untrammelled by visual distractions - the tuner would be characterised as having a very clean, somewhat bass-lean sound and a dry but extremely detailed mid-range. If it consistently appeared to lack some of the full dynamics of the best radio broadcasts, it became evident after a day or so that this was not the fault of the tuner; it is, if anything, too transparent to the original sound quality.

Watching - or rather listening - to Fifties films took me straight back to the plush-chair dusted fug of small-town cinemas and hissy and sparking soundtracks.

Installation is simplicity itself; in fact it was its ease of use which commended the Motion Electronics tuner to the BBC Engineering Department for sound quality checks in their mobile Range Rover fleet. Through an aperture in a hinged front perspex panel is a small switch which turns from Nicam stereo to ordinary VHF mono sound. As with VHF stereo radio, a stronger signal is needed from your aerial for stereo than mono; if you are in one of those areas like Humberside where you can (just) pick up Tyne Tees and Anglia as well as Yorkshire, one may turn out to be a little too distant for best reception and a listener may need to revert to mono. In West London, not too far from the Crystal Palace transmitter, I was startled to find Motion's tuner sensitive enough to pick up a clean sound transmission simply from ten feet of co-ax cable - it was lying on the floor; I disconnected it during a vicious thunderstorm and forgotten to plug it in again!

Tuner-Amp
One of the - sadly - so far unused abilities of Nicam stereo broadcasts is to transmit in two languages; one channel is used for the original soundtrack, the second for the dub. Ideal in some circumstances - I hate subtitles - I couldn't test this for lack of transmissions. Should it become more common in the future, the Motion tuner won't be redundant on that account.

So far, the Motion has been treated as though it were equivalent to a hi-fi tuner. (After all, if you don't have a hi-fi system, why are you reading this magazine?) But it's more universal than that. You don't need a hi-fi, only a television and a pair of loudspeakers, because this tuner has an integral amplifier built-in. Under that hinged perspex flap on the right are three small knobs mounted on the PCB for volume, balance and tone. Output to speakers is (again!) through the now uncommon two-pin DIN sockets instead of binding posts; it's unfortunate, this, as they are going to look unfamiliar to a lot of purchasers.

Surprisingly, the internal low-powered amplifier is better than basic, though somewhat limited in dynamic range and full-blown clarity. For most of my listening I used the 'Tan Out' to feed my preamp, which is intended to feed either a stereo hi-fi recorder or VCR. Used thus, sound quality was more dynamic, though obviously volume level cannot then be controlled via the Up/Down buttons on the fascia. A useful remote-control is provided, which duplicates all the fascia control functions and adds a Mute switch. This operates over a narrower angle than most comparable remotes these days, so the tuner does need to be more in line-of-sight than with others that are liable to have fallen down the back of the sofa.

"No criticisms, then, of the performance of the Motion Electronics Mk 3 Nicam TV Sound Tuner, nor of its facilities, which are as comprehensive as is conceivable"
Rather than hedging their bets with someone else's technology, Yamaha are now paddling feverishly up their very own tributary of the Bit Stream. And the CDX-860 is just one of a number of second-generation 1-bit ships, a sturdy if not entirely water-tight vessel built onto a substantial mineral-loaded 'ART-base'.

In fact, the overall appearance of this £300 unit, is distinctly bolder and more imposing than the £250 CDX-750 they supercede. So where else did you think the extra £50 was spent? After all, according to Yamaha's informative balance that captures the rhythm of a piece without lingering over-long on the power or impact of individual bass notes.

Tracy Chapman's 'Matters of the Heart' demonstrates this quality to a 'T'. Instead of pivoting the music about Chapman's unashamedly full bass it makes greater play of her voice, the methodical strumming of lead guitar and steady pattering of percussion. All these elements are presented in a fluid and articulate fashion, all very neat and tidy and with no malicious nasties lurking beneath the surface.

In many respects it's the epitome of a well-judged and up-to-date mid-priced player, offering a sound that's detailed and refined yet not so civilised that it could be construed as downright boring. Inevitably there's a flipside. Push the player a little harder 'Diva', for example, and an element of downturn. There's no malicious nasties lurking beneath the surface. The haunting tones of Maire Brennan's 'Land of Youth' also fall squarely within the compass of Yamaha's CDX-860. The haunting tones of Maire Brennan's 'Land of Youth' also fall squarely within the compass of Yamaha's CDX-860.

A concealed panel flips open to reveal the secondary controls.
the epitome of a well-judged and up-to-date mid-priced player, offering a sound that's detailed and refined burst of acoustic I've come to expect. A pity this, because the CDX-860 will develop a thoroughly uncompressed and sparkling acoustic given a sympathetic CD. The player is not overly fussy I should add, but the engaging poise of simple jazz, Pop or Classical recordings is tricky to sustain once the soundstage becomes cluttered with instruments. And it's this ability to sustain a very consistent and confident performance that separates the very good from the one or two truly magnificent machines currently available.

Keep padding, Yamaha, for the Bitstream current will eventually lead to the tranquil waters presently sailed by the likes of Rotel, Marantz and Pioneer. And when they do reach the blue lagoon, I for one will be more than delighted to raise the flag! •

Measured Performance

The story so far... The CDX-750 saw the introduction of Yamaha's proprietary PDM DAC (the YM7141), a natty little number that combined 2nd-order noise-shaping with a composite of 384x oversampling. In this respect it was closer to Pioneer's DACs than any from Philips. Anyway, its performance was hampered by Yamaha's first-stage 8x oversampling filter which offered a very limited 20dB stopband rejection while causing a peculiar 'bump' in the treble response.

One range later and we find the new YAC507 PDM DAC with an altogether revitalised 8x oversampling filter (the YDC101B/F). The composite oversampling rate is still 384x, naturally, but the HF bump has been reduced to a mere +0.07dB while its rejection of unwanted stopband products has improved to 72.6dB.

Meanwhile distortion has also been squashed to near-record levels, -103.3dB at 0dB and just -102.3dB at -10dB where the 'distortion' is almost entirely accounted for by noise! Even at -30dB the plot betrays just the merest hint of distortion. A fabulous result.

However, the seemingly vast 118dB S/N ratio is a product of digital trickery, disabling the noise-shapers when it detects a stream of digital zero's. In reality it's closer to 108dB (still an improvement on the older CDX-750) thanks to a spurious drone that breaks through the noise at 827Hz. On a more positive note do look at the evenly-matched L/R stereo separation - testament to the symmetry of Yamaha's circuit layout. PM
"If cassette decks had all reached this standard more often in the last decade, digital recording systems might well have been received with wide yawns."

That was the conclusion Eric Braithwaite reached about Nakamichi's £1,500 CR-7 cassette deck in our August review.

Following our policy of offering our readers the best, Nakamichi's top-ranking CR-7 will go to one Hi-Fi World reader this month.

Packed with features, not a single one superfluous, the CR-7 offers the ability to make first-rate analogue recordings of unsurpassed quality. In our test, independent listeners preferred it to DAT. Fully automatic tape tuning takes only seconds; just press the 'Auto Calibration' button. Almost before you realise it, the correct bias and level are computed, the 'Ready' flag on the display lights and the tape rewinds to the beginning, ready to record immediately. An 'Auto-Fade' switch will automatically fade out a recording just before the leader is reached - no more sudden abrupt halts as the tape runs out.

Not only is it easy to record, it's easy to find tracks on a tape, too. Nakamichi have built in a tape sensing system that can be switched to give a four-figure numerical count or, like a CD player, will indicate 'Time Elapsed' or 'Time Remaining'.

One of the most unusual features of the CR-7 is its ability to align the head azimuth for any tape. If the angle at which the playback head meets the surface of the tape is even minutely different to that on the machine that recorded or duplicated it, the music will sound dull or muffled. The CR-7's playback head is motorised: either turn the 'Azimuth' control on the front panel or use the Up or Down buttons on the remote control, and the head will move by fractions of a degree. 'Normal' azimuth is indicated by a red arrow as the top Recording Level indicator lights up. All you have to do is listen for the moment when a pre-recorded tape suddenly sounds most clear and snaps into focus and note the position for the next time it's played. It's extraordinary how much better many cassettes are than we believe after listening to them properly. Part of Nakamichi's own no-compromise approach to cassette is to use three discrete heads, one for Erase, and one each for Record and Playback. Peer into the illuminated cassette compartment and they look small enough to belong in the works of a Swiss watch.

Nakamichi ignore Dolby Labs' newer innovations. With heads of this quality, it's arguable that Dolby HX-Pro has no additional benefits to offer, and dynamic range is high enough without resort to Dolby S. Tape-type sensing is automatic for Ferric, Chrome and Metal, as is the equalisation setting, though this can be manually overridden.
What else is there to say? As befits a company which has its own private concert-hall in its factory in Japan and which is distributed in the UK by B&W whose monitor loudspeakers are to be seen in recording studios around the world, Nakamichi's CR-7 makes a lot of music.

Completed entries (on the form provided - photocopies cannot be accepted) should be sent to the following address to arrive by 30th September 1992.

Nakamichi Competition,
Hi-Fi World Magazine,
64 Castellain Road,
Maida Vale,
London W9 1EX.

We will endeavour to publish the results in the December issue. Audio Publishing Ltd. reserve the right to publish such entries or parts of entries as the company sees fit. No correspondence may be entered into as regards this competition and the Editor's decision is final. Employees of B&W Nakamichi Ltd., their dealers and of Audio Publishing Ltd., may not enter.

Please tick the box next to the answer you think is correct.

1 Nakamichi are one of the few companies to have, in their factory...
[ ] An anechoic chamber
[ ] A concert hall
[ ] A dedicated listening room
[ ] A theatre

2 The Nakamichi CR-7 has a unique feature to ensure perfect playback of recorded tapes. What is it?
[ ] Assymetric three-head design
[ ] Automatic azimuth alignment
[ ] Automatic Bias and Level calibration
[ ] Automatic tape-type sensing

3 Which of the following do Nakamichi not offer on the CR-7?
[ ] Dolby B
[ ] Dolby C
[ ] Dolby S

4 Nakamichi are associated in the UK with which company?
[ ] BMW
[ ] BMG
[ ] B&W
[ ] B&O

5 Name two other Nakamichi products which are not cassette decks.
A ___________________________ B ___________________________

Tiebreaker (obligatory). In not more than twenty words, suggest why you think the Nakamichi CR-7 is one of the world's best domestic recorders.

Name ___________________________
Address ___________________________
_______________________________
_______________________________
_______________________________
Post Code _________________________
Daytime Tel. No: _____________

Please send your entry form, completed in block capitals, by 30th September 1992 to: Nakamichi Competition, Hi-Fi World Magazine, 64 Castellain Road, Maida Vale, London W9 1EX.
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Hear the rewards of thirty years of loudspeaker development. See the stunning marbled finish of the new ‘classic’ range.

U.K.D. Products - English electronics with Italian flair
Caruso and Super Pavarotti - solid walnut speakers. Venetian glass hi-fi furniture. Solid brass accessories - up-grade your feet!

See us at the Penta Show - Rooms 2119, 2120 also 1060 (Jordan Watts with Magnum)
Denon's DL-1000 moving coil cartridge was a rare classic in the annals of hi-fi. It had a delicacy that was a delight to listen to. Its successor, the £199 DL-304, also a moving-coil, is both less expensive and less fragile. It is cooler, and it is still rare, however, but for a different reason: the few that are imported into this country are rapidly snapped up.

With its gold-coloured metal body, the '304 stands out - visually and in other respects. At 0.18mV it is a very low output device which is difficult to use without a moving coil step-up transformer. Amplifier moving coil stages commonly do not have enough gain to cope with it. Combining the cartridge with a transformer makes it less of a bargain, since a quality one like EAR's The Head would raise the price substantially.

Apart from the problem of level, there is a mismatch in compliance between the DL-304 and most current pick-up arms. Compliant cartridges of this type went out of vogue a few years ago, to be replaced with higher mass, lower compliance types. Pick-up arms soon followed, manufacturers producing heavier, more rigid designs.

Installed in a modern arm like my own rigid, magnesium SME V, the arm waggled around on outer grooves. I noticed that these low frequency excursions were producing cone flap in my reflex loaded ProAc Response 1s - a classic sign of excessive arm mass for the high compliance of the cartridge.

Denon have traditionally been the cartridge suppliers to the Japanese broadcasting industry and the rigorous discipline and experience learned here is evident in the '304. Their DL-103, introduced back in 1963, is one of the longest running audio products around and their turntables have always been well engineered.

Denon like to be known as a 'quality' company. A flagship cartridge within the reach of mere mortals can set them apart from the other Japanese multinationals in the public eye. The DL-304 looks set to become a cult among cartridges.

Why is it so good? First, it is a superb tracker. As with the Shure VST-V tested last month, it confidently tracks at 1.0g - 1.4g without panic or problems. My sample fell in the middle of this tracking range, at 1.2g, which is exactly as the specification suggests. This, combined with an elliptical stylus profile, makes the '304 unlikely to recut your precious records for you. As record preservation has become a major concern with many LP owners, it is a property that alone recommends the '304.

Those who love to hear a mid-band displaying superb lucidity and transparency will find that the '304 is one of the finest cartridges available under about £600. This is definitely Pink Triangle territory, where such virtues shine through.

There is a group of listeners who enjoy cartridges of this kind: they are unsympathetic to the warmth of a Koetsu Black S, the life of a Lyra Odin or the speed of an Audio Technica ART-1. Their preference is for a cartridge that will add or subtract as little as possible to the music in the groove, the final choice commonly being a Dynavector XX-IL or Ortofon MC-3000. The DL-304 is firmly aimed at this band of neutrality lovers.

Subjectively, it doesn't quite match their sheer quality, yet it is very close - far closer than a £200 cartridge should ever sound.

What sets the DL-304 apart from its peers is its low colouration. Though at this price something might be expected to go missing, nothing does: but, uniquely little else is added to the music. In the wrong system, the uncoloured Denon could sound thin and uninteresting, in the same price league, other cartridges available under about £600. This is definitely Pink Triangle territory, where such virtues shine through.

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How digital is a digital recording? Many apparently all-digital recordings have in fact sneaked in and out of the digital domain and nestled in analogue for a while. Eric Braithwaite outlines the way a recording is made in order to dispel a delusion or two.

Those letters, 'DDD', 'ADD' or 'AAD' were invented by The Society of Professional Audio Recording Services in the mid-Eighties to help the consumer identify which parts of the process were analogue and which digital. However, they admitted earlier this year that “Just to label a step in the process as 'D' for digital and 'A' for analogue is no longer an indication of much of anything... The code has been in danger of degenerating to simply a marketing device rather than a useful piece of information to the reader.”

The chief delusion seems to be that if a Compact Disc cover claims to be entirely digital - and has the 'DDD' code - then it is digital from beginning to end, from microphone to jewel box. So, people ask, how come it doesn’t sound perfect, happily equating (thanks, no doubt to subconscious memories of Philips’ original slogan ‘Perfect Sound Forever’) digital with perfect sound quality?

1) Recording: The first letter of the code identifies the storage medium used in the initial recording process. Usually, it’s a multi-track machine having sixteen or thirty two tracks, onto which the singers and instruments are individually consigned. This captures the basic performance. It then has to be processed. Hence ‘DDD’ - a recording made using a Digital recorder (a DAT machine, for example) at the beginning; a Digital editing desk for turning what may be several hundred separately recorded snippets of a performance into a cohesive whole which lasts an hour; and the final product which would generally be recorded digitally onto U-Matic tape for the pressing plant to make the Master for the production process.

2) Editing & Mixing: The second letter of the code identifies the nature of the stereo master tape onto which the multiple tracks are finally mixed. In this process instruments are positioned on the sound stage and artistic mistakes are removed, or other instruments, voices or effects are added to the original. 

Now, ‘twixt cup and lip... or in this case ‘twixt a performer in front of a microphone and a neatly printed CD in its jewel case there is more than one way to skin the digital cat. The first commercially-issued digital recording in fact came out in analogue format - on cassette and LP; it was 1979, and Compact Disc hadn’t been invented. It was Decca’s recording of the Vienna New Year’s concert.

3) Mastering: The third letter identifies the type of ‘travelling master’ tape used. This may be equalised to compensate for tracking loss in LPs and azimuth error loss in cassette, both problems demanding a measure of treble boost be applied. Masters sent for CD transcription are usually unequalised though.

An ABC of AAD, ADD & DDD

Even with all-digital recordings (DDD) the front of the signal chain is analogue. Nowadays, valve amplification for the mics is not uncommon. The signal may be converted into digital form either before or after the level/EQ console. Since digital consoles are still not predominant, the signal commonly remains in analogue form through many processing stages, before going digital in a converter placed between console output and multi-track recorder.

First of all, we’ll get one problem out of the way. The first stage of any recording process is analogue. The digital microphone hasn’t yet been invented. Its job is to turn sound vibrations in the air into electrical energy, and that is an analogue process.

However this is not what the first letter of the three letter code on a CD refers to. These divide the process into three stages.
album. At the time, only the classical companies had got to grips with digital recording, and the hardware was mostly custom-built or very expensive, so a digital recorder was borrowed.

Now, if a drummer catches a hi-hat with his elbow in the middle of recording a song and says, loudly, "Oh dearie me" (polite people, drummers, not at all profane) that has to be removed. With analogue recording onto reel-to-reel tape, it's simple. You simply cut out the length of tape which holds that mistake, and literally stick another piece in instead where it's perfect.

On a digital recording it can't be done like that. You have to change the coding itself - the order in which the 'I's' and 'O's' are on the tape. Cutting up the tape destroys it - you might as well cut all the pages of this magazine into eight pieces each, throw them up in the air and expect them to come down and reform themselves neatly beginning at Page 1.

Said pop-star and her studio discovered this rather late, and struggled with the editing for six months. It's said that the studio and record company spent hundreds of thousands, and ended up simply copying the digital tape back to an analogue reel-to-reel and sharpened up the razor blades. Rumour had it that though the album was proudly advertised as 'Digitally Recorded' - it had been - it was the analogue copy that was used. To be fair, another rumour had it that later issues did use a digital copy of the original tape, digitally edited by a Classical engineer, who sorted out hundreds of hours of by then random bits and pieces in about six weeks.

This still happens, particularly in the Pop field, but the listener might never know - the coding doesn't tell you how many times a tape has dodged in and out of the system as an analogue copy as the hours and costs mount and a tricky bit has to be tidied up quickly. Unfortunately, when it's done, studios keep quiet about it; the music biz - and a lot of buyers - generally believe that the word 'Analogue' anywhere near a CD is the equivalent of Leon Trotsky announcing that he's a great admirer of Adolf Eichmann.

**DDD**

This is the code many buyers look for; sometimes in the mistaken belief it represents perfection. Only a tiny proportion of recordings ever could, or can be perfect.

The three letters mean that the recording was, first of all, made in the first instance on a digital recorder. This may be a two track Digital Audio Tape (DAT) recorder, but it is more commonly a multi-track, reel-to-reel digital recorder using one-inch wide tape and anything up to forty-eight separate tracks. The danger within the first D of the code concerns the poor quality of some early digital recordings. Made using early and crude analogue-to-digital convertors, sometimes by engineers who didn't understand the danger of letting record level sink down low, these can suffer appalling quantisation distortion. It is most noticeable on violins, which become bizarrely shaky and rough sounding, seeming to swim in a sea of distortion. As a general rule, beware of early digital digital recordings - anything made in the 1970s. Often you'll find that they are offered cheap - and for good reason.

The next stage is correcting any performers' mistakes and changing the balance in the sound: making the side-drums louder compared to the lead guitar, or moving the apparent position of a sax player from one place to another. Done through a digital mixing desk, which allows the producer to change volume, position, even the frequency of instruments, the result is 'mixed down' to two stereo channels again and digitally recorded once more.

That's the second 'D'.

Finally, the resulting two-track stereo tape is encoded so that the information on track times, total length, and the instructions which are required to stop the laser trying to fall off the edge are all present. This is the last of the three 'D's. In the CD factory, the 'glass master' forms the base for a production run which is what you see when you open the jewel box.

**DAD**

An odd one, this. However, it happens. Studios fully equipped for digital recording and mastering right the way through are pricey to use because the equipment itself is extremely expensive. The first 'D' is as for DDD: the recording is made on a digital recorder.

What happens next is that the original digital recording is played through a Digital-to-Analogue converter, fed through an analogue mixing desk in the editing process, mixed down to stereo and the result re-converted to digital.

The editing might be done several times until the producer feels it's right. It's not unknown for some Rock producers to even copy a digital tape to analogue and back again because they prefer the sound of a small degree of analogue distortion. Analogue time is much cheaper than digital time in an editing suite. A group might therefore be able to spend a longer time playing about to get the results they want. There are circumstances, even, when through lack of money, lack of expertise, or lack of time, a digital recording might be copied onto an analogue machine and edited the old-fashioned way by cutting the tape, throwing away the unwanted lengths and sticking it back together again.

The final stage, of course, is back to a digital transcription master for the CD factory.

The second letter of the SPARS code refers to the nature of the stereo mix-down master recorder. However, the mixing and equalisation process feeding it may be either analogue or digital.
It should be becoming obvious by now, that if the first letter of the code is 'A' then the original recording has to be analogue. Once again, it can be a very simple two-track recording or a sophisticated multi-track one. Recordings were made in the Sixties using a perfectly ordinary domestic Revox A77 half-track reel-to-reel. More usually it would be a professional Studer machine from the same company.

However, analogue recording goes back much further than the invention of tape. Edison's first cylinders had a stylus cutting a wavy groove on foil, later on wax. The same principle applied to 78's, and well into the LP era.

Editing would also be analogue; either processed through a non-digital mixing desk - and there are valve ones in use! - or purely mechanically using the old razor-blade and sticky tape system. As before, the final stage is inescapably digital to result in a silver disc in the jewel box.

A word of warning, here: it is not unknown, especially with obscure names on the CD, or pirated, for the only digital part of the disc to be the disc itself. Unscrupulous people after a quick buck have been known simply to copy an old LP, an ancient mono home recording made by sticking a microphone in front of a wireless or even a cassette through a DAC onto a DAT machine. It would still be "AAD" or, at a pinch, "ADD" - it'll also be naff.

ADD
A refinement of the above, with added optional complications. The first stage, obviously, is analogue. In historical order: cylinder, shellac 78, metal 78 or LP master, reel-to-reel tape. This is the code often seen on re-issues, though it doesn't necessarily follow. There are still musicians, engineers and producers around who prefer to start with an analogue recording and digitise it later.

In the latter case, the processing is done through a digital mixer and stored either on digital tape or, something we haven't mentioned yet, on a computer hard disk.

The reason this is a common coding for re-releases is that digital processing at the second, editing, stage allows a wide range of opportunities for tidying up an original that had faults or failings either through uncorrected mistakes or because the technology has simply improved since.

One of the experts at resurrecting historical recordings - until his recent retirement - was Keith Hardwick at EMI. He was responsible for re-building the sound of historical recordings in EMI's archives for a quality of reproduction commonly available now that wasn't dreamed of thirty years ago, let alone when some of the great opera singers were bellowing into great horns at the turn of the century. It's amusing to consider that in the recording industry, a record made only twenty years, let alone a hundred, ago can become a 'historical document'.

Many are marred by wear and tear, deterioration, scratches and dust on the last usable master, sometimes even by flood and fire. By and large, people like Hardwick at EMI and the engineers at Decca adopt a minimalist approach, using computer, hard disk and digital processing only to filter out hiss, particularly irritating cracks and bangs or incorrect pitch because the original recording ran slightly fast or slow. The results can be astounding, with a quality of sound and tone emerging from the accumulated hash of years that only long-dead engineers heard on the day.

Decca's typically idiosyncratic nomenclature for this is "ADRM", which is probably more descriptive: 'Analogue to Digital Re-Master.'

CONCLUSION
So how digital is digital? Quite often, not very. A sizeable proportion of a recording at the first stage can avoid any contamination by digits. Some companies prefer it that way. Philips Classics argue that their analogue mixing desk is quieter and sounds better than any digital one. Erdo Groot, one of their balance engineers, has even used Dutch designer Jaap de Jong's valve desk on the CD booklet. It's trial and error - and often it isn't half a trial. Learn from experience. Most CD inserts now list the names of the engineers and producers along with the date and place of the recording. When you hear one which impresses you by its fidelity, look out for the same names again.

Collectors of vinyl will know the trick. The highly respected Decca 'SXL's' and RCA 'Shaded Dogs' are associated with names like Kenneth Wilkinson and John Culshaw. It's less easy with Pop, Rock, and to a certain extent Jazz. It's common for non-classical recordings to meander through several studios, many different systems and dozens of engineer's hands before they emerge at the other end. Still, the various studios, engineers and producers are now commonly credited on these sleeves too. And, of course, there's a very helpful publication called Record Collector to help guide you through the maze.
This month, the first of two systems with many common traits. Both live in idyllic listed buildings around the US air bases in the Norfolk/ Cambridgeshire countryside; both feature Epos ES 11 loudspeakers, albeit in very different systems.

The first belongs to Judy Head, who is a trade consultant in the City of London. Judy has that canny knack of discovering things by chance, as proven by her house and her hi-fi. She stumbled upon her new home by accident, when a secretary talked of her holidays in the Norfolk Broads. By chance, a newspaper fell open at the house pages and there was her cottage! A few months and some fierce negotiations later and the cottage was in her hands.

Having moved in, Judy decided to renovate it completely. Once more, the chance aspect appears. Judy was arranging a photographic shoot at a studio which was just putting the finishing touches on their previous job: photographs of Pink Triangle turntables. The style of the Pink appealed.

Around the same time she listened to a number of friends' hi-fi systems and began to compare the sounds that made to the noise that came from her own mid-box. As Judy is very involved with her music, from here it was clear that hi-fi would be the first priority after her move.

Hearing the Pink

Having moved into her new house, she approached her nearest dealers, Basically Sound, who are situated in Bracon, just outside of Norwich. Having arranged a demonstration, she explained that she knew little about hi-fi, but she wanted a turntable-based system and she had heard of Pink Triangle. Graham, the salesman at Basically Sound, expertly described the pros and cons of buying a turntable today, although he also admitted his own preference for LP.

Basically Sound provided Judy with a system that fitted her budget without compromising her purser or the system. Although the cost was slightly more than she had hoped to pay, she felt that the sound more than justified itself. What particularly impressed her was the way that Graham never tried to force her into buying.

Once again, luck played a part in choosing the set up. It was the first played to her during the demonstration and although she could hear the changes and improvements made later it was the original system that she settled on. It consists of a Pink Triangle Little Pink Thing turntable, with a Rega RB-300 arm and Linn K9 cartridge. This was partnered with a Naim Nait 2 amplifier and the aforementioned pair of Epos ES 11 speakers and stands, with bi-wired QED 79 strand cable.

No tables or wall shelves were supplied, because Judy is in the process of rebuilding her house. In fact, the day before we arrived, the builders had knocked down one of the walls in the living room, so a thin patina of dust covered everything. During such times, both system and record collection are removed to the upper floor and covered in dust sheets. When all the building work is finished, Basically Sound have offered to set her system up properly later as part of the service.

Even operating in such a ramshackle manner, being plugged into a temporary 13A mains socket from the ceiling, it still outperforms her previous system, a nondescript Japanese mid-size. As it stands, the system is a happy compromise of Pink neutrality, Naim strength and Epos smoothness.

Although the little Nait is not the most powerful amplifier in the world, it still has the power to make the Epos sing at moderately high levels.

Disappearing Art Form

Although Judy admits that she will need a Compact Disc player, tape deck and tuner, in the future, such components will naturally take a back seat to her turntable. "I already have a large record collection and I don't have any need of a CD player yet." She has also discovered a number of superb second-hand record shops which cater for her very catholic tastes, although she swore me to secrecy about their locations. She also has a unique view of the relative merits of the two formats. "With the reduction in cover size, there is a whole art form in album sleeves that is rapidly disappearing," although she admits that CD has its uses; "It's good for listening in the bath on Sunday mornings."

People new to the joys of hi-fi often have to serve an apprenticeship with poorer equipment, largely because the salesman cannot accept that people can have a starter system that is of high quality. Judy's first 'real' hi-fi system is an exception to this rule. All the components meld together beautifully. It can easily be improved, with the loudspeaker cable being changed from QED to Naim NAC A5 or Linn K400 - the most obvious area for improvement after the system is correctly and finally installed.

Amid the rubble of a rapidly developing house, it all provides a solid musical foundation on which Judy can expand her record collection. She is more than happy with her first real system, and with the excellent and professional service from Basically Sound. Around the office, it was felt that Judy had got her priorities absolutely correct - buy the house, buy the hi-fi system and worry about the other problems later. The house may be in disarray, but at least the music takes her mind off the mess.
INNOVATIVE CHANGES

I have never written to a hi-fi magazine before, but having read so many, I feel it’s about time.

My system consists of an old version Audio Innovations 5300 amplifier, a Philips CD 850 CD player and a pair of B&W DM600 speakers with Linn K20 speaker cable. I am satisfied with my amplifier but I found the bass of the DM600 is not well controlled and is too boomy. Is there any way to improve its sound quality? I prefer detailed mid/treble and well controlled sound quality one. But the S300 is quite system dependent and the output is not high (only 10 watts), so would you please recommend some speakers to me which would be suitable for my S300? My planned budget is about £700–£800.

By the way, do you know what the valves inside the 5300 are, except the 3 ECC83s, as I want to change them.

Dennis K. M. Wong, University of Bradford.

The 5300 amplifier is well suited to the Snell or Audio Note loudspeakers. My recommendation would be the Audio Note K on heavyweight Hugyens stands. I would also recommend changing the cables over to Audio Note AN-B cable. Alternatively, try Definitive Audio’s modified JPW AP2 loudspeakers, again with Hugyens stands and Audio Note cable, although this time, you could afford to splash out on silver cable, remembering to brand it first.

The valves in the S300 are, as you suggest, three ECC83s in the preamplifier stage and four ECL86 valves in the power amp. The ECC83s are not a problem, as they are very common. The ECL86, however, is not as standard; it was used in player and preamplifiers like the Rogers Cadet, P.M. Components (0474) 560521 to make a Golden Dragon version, however, and if there is any further difficulty, contact Audio Components (0305) 761017, who will be able to supply the valves ex-stock, as well as offer any further information on the Series 300 amplifier. AS

BRIGHT CD FROM LIND

I wonder if you would be so kind as to offer me some advice on my system, I’m a devoted fan of the original Quad ESL, so much so that my main concern when recently moving house was to have a large enough room for

the speakers! The rest of the system consists of an LP12/Eros/Toika/Lingo on a Mana table, a Linn Kari/Numerik, Exposure VII/ VII/ VIII amps and a Nakamichi cassette deck. While everything is wonderful using the record deck, sound quality is still often uncomfortably bright and lacking in bass extension.

Two dealers both recommended I upgrade to the Linn Kairn, but after extensive blind listening, comparing my amps to a Linn combination that was nearly twice as much money, I really could hear no difference between the two. All the equipment is on dedicated tables, the Quads have been modified to prevent damage caused by excessive amp output, and are placed close to side walls and about a third of the way down a large room measuring 28ft x 16ft. I upgraded to the Linn from the Mendian 200/203, although the differences were relatively subtle. Is there anything you can suggest, short of waiting for CD technology to catch up?

One final word to doubtful purchasers - the Mana table has, in my system, made a large difference to the sound quality than either the Lingo or the upgrade from an Ittoku. Hesitate no longer.

S. M. Herber, Grimsby, Yorks.

Your description of your misgivings toward the Linn Karik/Numerik CD player focuses on its main drawback. Even Stereophile’s very positive review of the Linn player drew attention to the ‘thinness’ of the treble. This ‘thinness’ could produce a lean or even bright sound in the wrong system or the wrong room. Ultimately, this could be due to the medium itself, but I believe that the player is responsible.

Check out the benefits of the Mana table on the CD player, DAC, and amplification. It appears to work in the same fundamental manner (no pun intended) as the Reference table for the turntable.

If this does not work then I believe that the curvature such brightness lies with the Naim CDS, or possibly the new sync. locked Arcam Black Box 5 (£449.95) with 170.3 low-jitter transport (£649.90). We haven’t heard it yet, but Arcam consistently produce fine CD equipment and their ‘house’ sound leans toward a new presentation that’s easy on the ear, but of a high standard all the same. Similarly, the Audiolab 8000DAC has a refined presentation that you may well find suits your tastes and your system. We suggest you audition them.

Alternatively, try the American high-end; CD players and DACs from Thetos, Pioneer’s P.S. An CD is still often uncomfortably bright and lacking in bass extension.

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As long as you do not crank up the hi-fi, using a pair of loudspeakers with an amplifier outside their capacity is not a recipe for disaster - it just needs rather more restraint. What is more problematic is the use of a pair of speakers between the two loudspeakers.

Loudspeaker magnets will pull the picture and blur the colour of a TV if brought very close. Just keep the speakers away from the TV. I would suggest trying the Rogers LS2a/2s, and if you do ‘pull’ out the use of the TV, then speak to Wilsom Audio (0565) 650605 about providing some screening material. Harbeth P3 loudspeakers are screened, so this could be a good option for you.

There is some confusion over NICAM, ‘surround sound’ and Dolby Pro-Logic. An increasing number of terrestrial broadcasts (BBC1, BBC2, ITV and C4/S4C) are now NICAM encoded. This gives a stereo signal, with the correct NICAM decoder. As with conventional hi-fi stereo, there are only left and right channels, with no information in this signal specifically for centre or rear channels.

A select few made-for-TV programmes, together with some, usually big budget, movies are Dolby Pro-Logic or Dolby Surround encoded. Contrary to opinions held by some, NICAM is transparent to both these Dolby signals and the full coding can be broadcast by the terrestrial channels. Pro-Logic uses conventional left and right loudspeakers, together with a couple of rear channel loudspeakers, to create a wide-screen cinema sound.

Pro-Logic usually needs a separate decoder from the NICAM device, although many VCRs have both shoe-horned into their output sections. Please note however, that there is a world of difference between a ‘stereo’ VCR and a ‘NICAM stereo’ VCR; both can play stereo video cassettes, but the former cannot receive NICAM encoded stereo broadcasts. The situation is made even more complex when satellite is involved, as they have their own form of stereo encode/decode system, although some cable viewers have the ability to receive
The Toshiba 2505 has the ability to run both NICAM broadcasts and Dolby Surround features, complete with internal amplifiers, cables and rear loudspeakers. The Panasonic could be upgraded to play Dolby Surround, or Pro-Logic as you have suggested. Cost could be kept low, making it similar in price to the 2505. Ultimately, if you intend to upgrade your home cinema, then the Panasonic would be the better bet, as it gives you slightly greater future flexibility, while the Toshiba TV is a more complete, and final, package.

AIRFIX HI-FI - JUST ADD GLUE!
I am writing, in desperation, in the hope that you can help resolve a problem I have with my hi-fi equipment. My system comprises; Naim NAC 325 + SNAPs + NAP 160 (all modified to latest spec, Arcam Alpha CD, Thorens TD 160 Mk4 with its own arm and a Goldring 1012 cartridge, all going through a pair of Rega Bias. Speaker cable is NAC, the amplifier interconnects are SNAICs, and the CD to amplifier interconnect is van den Hul.

My room is approximately 14 x 12 feet, with a solid concrete floor and the speakers situated almost 'in' a bay window - i.e. the wall is at a 45 deg. angle (approx.) behind each speaker, the wall being between 3 and 5 inches behind each speaker, incidentally. My musical tastes encompass almost everything except for opera and disco 'music'.

The problem I have is a lack of deep bass notes, which makes bass lines sound rather disjointed and robs the sound of some of its body. The problem mainly affects CD reproduction, although my Thorens is in need of a service, and is difficult to use for evaluation purposes (more of this later). I use the Phono 2 input of the 325 - yes it is rather old! - via the CD direct boards (the variable ones sounded awful). I do realise the Alpha isn't quite good enough for the Naims, but as it stands, it sounds as though the frequency response is being cut at the bottom end. I know that Arcam slope off the high frequency end of the spectrum, but hadn't realised that they do the same at the other end!

If you could in some way verify my feelings on this matter and also suggest a plan of action I would be most grateful. Would an off-board DAC improve matters? (i.e. add a Meridian 203 DAC7 and the transport at a later date), or should I be aiming for a CDI or something similar? Would a change of interconnects help? (I think not however).

Also, could you recommend some wall shelves - I need two; one for the turntable and one for the CD player. The ones I use at present are OK, but are made from chipboard and tend to flex a bit. I cannot realistically use anything else as I have three cats! I can't really stretch to Mana tables (especially if I invest in a CDJ), but I will if necessary.

The turntable could also do with upgrading; do you suggest just a change of arm/wheels and a suspension overhaul, or would a complete replacement be advisable? I do have nearly 400 LP's, so something decent is required - an LP12 has been suggested (several times), but what others would suffice? - nothing outrageous here please!

Any advice you can give, to prevent terminal madness would be greatly appreciated. I realise I've gone about my upgrades in a roundabout sort of way, but I do like my Bias and am growing to like my Naim; what I don't want to do is waste any more money!

On a different note, when I had my Marantz PM145, CD75 + Tannoy Mercury Mk1's, the bass was, at times, a bit too much; am I right in assuming that the amp and speakers were adding something in the way of colorations/resonations, that boosted bass performance? A friend has the Tannoy's now, and I find them rather offensive to listen to; funny old game innit! Nigel Smith, Bedfont, Middx.

I am at a bit of a loss as to why the CD should sound so bass shy. It may be due to the poor equipment support, or it may be that the ELA's transmission line is not interacting with the room properly, possibly due to the bay window in the rear wall, the small size of the room or the dry sound of the concrete floor.

I would expect such a system to sound warm and woolly, but still forceful and dynamic, with a deep bass - the opposite of the sound that you are getting.

In equipment terms, there are a few things that you can do. First, check that everything is working properly, including the removal of carriage bolts and such like. Second, check out good tables and wall shelves for all the hi-fi components - not just the CD and turntable. These do not have to be in the Mana or Seismic Sink class; two Target wall shelves and a matching table for the amplifiers beneath them would do fine. Ensure that all is tight, rigid and level.

Finally, put the same amount of care and attention into the positioning of the loudspeakers. Try to get them six to eight feet apart, and equal distances from the side and rear walls, preferably at least two feet from the side wall. When all this is done, get the loudspeakers level and ensure that they do not rock at all.

If after all that the system still has bass problems, then try to borrow a DAC like an Audio Alchemy or the Micromega Micromod, to see if that improves things. As a last ditch effort, you could try changing the v/dH interconnects over to Sonic Link Violet, which is well suited to the Naim amplifiers, but I would doubt that was the root cause of the problem.

AS
**TOP TURNTABLE TIPS**

Can you throw some light on what choices I should make in developing my existing system?

This consists of an Elite Rock turntable/Alphason Delta arm/Decca London (Blue), Musical Fidelity A100 (recently changed from a 5 year old Incatech Clammore) and fifteen year old Rogers LS3/5A's on heavy stands. My CD player is a Marantz CD 656, with Arcam A Link Box II. I have well over 17,000 LPs, almost entirely Classical (orchestrals, choral and chamber music).

The turntable combination is almost six years old now and while very acceptable may not be quite up with the very best available. In addition, the Decca does not sound as good through the MF's phono stage as it did through the Clammore. For this reason I would like to change and upgrade it to a top flight source before the end of the analogue era arrives.

However, I am in two minds as to which course to take.

One option would be to keep the existing deck and upgrade the arm to an Excilbur coupled with a high-grade cartridge from Dynavector or Shure VST-V. The alternative (and more costly option) would be to ditch the Rock completely and go for a Pink Triangle Anniversary/SME Series IV/Shure VST-V (or similar).

As you can see from my choices I want as accurate a source as possible (given a maximum budget of £2,400). I have heard both Linn and Roksan systems in the past and came away unperturbed. Also, much as I would like to go for the Rock Reference/Excilbur my girlfriend is likely to object to the cost very strongly.

In the long term I shall upgrade the amplification and speakers but at the moment my priority is to get as good an LP source as possible to carry me through the twilight of analogue.

**Roy Boakes, Baillieston, Glasgow.**

The Excilbur tonearm is ideally matched for the Elite Rock turntable and takes the Townshend principle to its extreme, short of the Rock Reference design. It you like the sound of the original Rock, then adding the Excilbur, a Dynavector arm, or a Michell Iso moving coil phono stage with Hera power supply will take the turntable into the top league. If you have any money left after such an upgrade, go for a Townshend Seismic Sink, together with the high quality interconnect, of a relatively low capacitance, such as Cogan-Hall Intermezzo Reference, Audiopian Super X-Wire or, if strapped for cash, DM interconnect.

The logical alternative to this is the Pink Triangle route. The system that you described (Anniversary, SME IV, Shure VST-V) is a very successful combination, in a similar class to the Rock. This system would also benefit from an added disc stage, this time from Moth.

Although both turntables are highly neutral, they have slightly different priorities; the Rock's centre of excellence is its bass performance and its almost total absence of surface rumble, while the Pink favours a highly transparent mid-band. In a system using LS3/5A's, you may find the Pink's balance of virtues difficult to better, yet if you had full-range loudspeakers like the Glastonbury's, the Rock may be more suitable.

**UPGRADE OPTIONS 3**

I am looking for some advice on upgrading my system by changing my current amp to a pre-power combination.

My current system comprises: Arcam Delta 170C/D, Audio Alchemy DDE, Rega Planar 8 with Linn K9, Marantz PM-75 amp and bi-wired Musical Fidelity MC-2 speakers.

Pre-power combinations I was thinking of are: Audiolab 8000 C/P, Musical Fidelity P180 and Linn LK/LK 280.

Which of these combinations would work best in my current set-up, or can you suggest any alternatives?

My budget is between £1000 and £1500 and I listen to rock music from Abba to ZZ Top and everything in between.

**Liz Laird, Penarth, S. Glamorgan.**

The MC-2's are good rock loudspeaker that need some power to drive them properly. As such, the Audiolab 8000C/P combination's normally clean presentation might sound a little lightweight through them.

Switching over to the Linn LK1/LK280 set-up, this is in the process of fading from view. There should still be stocks of the LK1 at present, but it has been largely superseded by the more expensive Karakoram and the Pretek. Likewise the LK280 is being replaced by the cheaper LK100 and the expensive Klout. A Pretek/Powertek from the Linn range would fit your bill well.

My own favourite combination would be a Croft Micro or Super Micro valve preamplifier with a Musical Fidelity P180 power amplifier. These two combine together well and would suit your system perfectly.

This would slowly show up some of the compromises that the Rega makes, so it may be time to look at Townshend damping troughs and Seismic Sinks, or Mara tables. These are capable of transforming the performance of the Rega.

If you are still in a spending mood - or want to put it on hold for later - I would also recommend Arcam's £150 factory upgrade of the Delta 170 to 170.3 specification and also consider partnering it with the Sugden SD-1 Digital-to- Analogue convertor, a combination I have lately been very pleased with.

**SHORT AND CURLIES**

I have just decided on a new system which will comprise: Deltec DSP505/DSA 505 pre/power amps, Deltec PDM 2 DAC, Wadia WT 3200 or Teac P10 transport, Nakamichi Cassette Deck 2, Deltec Black Slink interconnects.

Although I am more than overwhelmed by what I am about to purchase, I am having great difficulty in choosing a pair of speakers. I have already auditioned: Kef Q90, Kef 103/4, Rogers LS3/5A, Acoustic Energy AE2 and Epos ES I I, but so far nothing has grabbed me by the short and curlies. I listen mainly to the likes of Frank Zappa, Steve Vai, John McLaughlin etc. If I knew what was wrong to the likes of Frank Zappa, Steve Vai, John McLaughlin etc. If I knew what was wrong

**P. Sayers, Joie De Vivre, Penarth, S. Glamorgan.**

It largely depends on what you want from a system. You have listened to a varied range of loudspeakers, many of which have long been considered to be a good match for the Deltec system. The only loudspeaker that suits the Deltec better is the Quad Electrostatic, yet Quad Electrostatic fans are generally not the sort that use phrases like 'grabbing you by the short and curlies' and listen to the league of guitar heroes that you mention.

You could try Pro Ac Tower or Response Two loudspeakers, together with DynAudio Contour 1.8's or Craftsman although I believe that these loudspeakers need far more 'grunt' than the fifty watt Deltec can deliver.

If I knew what was wrong with the systems that you have heard in the past then I may be able to help slightly more. If you are looking for a loud, powerful and dynamic sound that is similar to the recording studio, then skip the power amplifier and go for a pair of active ATC SCM 50's. Alternatively, skip the Deltec equipment altogether and plump for a full Linn or Naim CD system, with either SBLs, Kabers or Isobariks.

All these systems have the ability to pin you against the rear wall with intense, yet controlled, music. If this doesn't work, then the answer that you seek may lie in the high-end. Have a listen to Martin-Logan Quests, Audioelements, or Magnepan designs through Krell, YBA. Mark Levinson or Conrad-Johnson amplification.

**JOIE DE VIVRE**

Hello again, and thank you for the advice about room acoustics in the April issue, but it only solved part of the problem. So here I am again asking you about the matching of my system, which comprises a Meridian CD2068, Audiolab 8000/C/D 1991 revamped amp and preamp plus Quad ESL 63. How does this combination sound to you?

I also have a Pioneer CD player CD 4100 that I first bought years ago as an introduction to CD players and, comparing this budget CD player to the Meridian, I find the latter does not justify the extra spending as the sound is not so much better, and not much more musical - or as you describe in your World Favourites, it is lacking in joie de vivre. And I am a French speaker so I know exactly what joie de vivre means; so please help me find the real thing with your advice.

I am ready to spend an extra £200 or sell part of my equipment or all of it and add the extra £200 to £300.

To be more precise I will ask you a few questions.

1. Do I have to change my Meridian CD2068 or just add a...
to go for an easier match and to go to the very high end like Accuphase DP70 (I want your separate DAC to really feel and slick styling to match! Do I have 2. Or is it the Audiolab with its opinion) or Naim CD player? I want to hear the difference or do I have the solution, if not which speaker you say maybe it is better to amplifiers are considered very expensive. Are they worth the money?

Gradient sub-woofers will ease choice or maybe buying a pair of way of testing the Quad ESLs to working condition? Nobody to talk to about my problems.

Although I admit that their wedge-shaped Luxman, CD players and amplifiers, in fairness, I have not spent respect worldwide. Of the big technology has been suspended in concrete terms than those which surround this end of the hi-fi market, such as 'warm', 'lovely' etc. I assume that this kind of technology has been suspended in the 'lab' situation, but the healthy levels of interest in it suggests that it has something more to offer than simply (very tiring) aesthetics.

What exactly? Yours grasping at straws. Miles Hubbard, Loughborough, Leics.

The obvious partner to the Quad II power amplifier is the original Quad Electrostatic, which can be got for around £200-£400, depending on condition. Otherwise, old KEF's, Leak and Wharfedale loudspeakers would all suit, but would radically alter the sound of the system.

With a pair of Quads, and a well cared-for Garrard 301, preferably in a SME pinlift, with an old SME arm and something like a Shure cartridge, the overall sound quality can be surprisingly good, coming very close to the sound of current products. I must stress that this is largely dependent on the state of repair of the equipment concerned; you would not easily restore and maintain and you have the basis of a system which could provide a match for all bar the finest of hi-fi.

Just to stick my ha'porth in, a 301 or a 401, being more likely to hold its value. Beware, however, since both were prone to rumble. It is possible to find ones that don't. Listen carefully. If you spot a Thorens TD124, which is of similar vintage, in good condition, this is also a strong contender.

You do have to be careful about piecing together a vintage system. Although the best from the past can be spectacularly good, a lot of it is old tat! Even good products in poor condition will sound pretty dire. I'll go over the problems in detail.

Firstly, the original Quad Electrostatic remains one of the best loudspeakers ever made, being preferred to its later replacement, the ESL-63, by many. Unmodified, the '63 sounds warmer and a bit 'smothered' in comparison. I bumped into two buffs the other day who had just heard, for the first time, a pair of stacked originals: they were almost in shock over the sound. These speakers offer a purity and openness unrivalled by box loudspeakers - even the most modern.

However, the original electrostatic was easily damaged by being overdriven, whereupon the internal Mylar film panels arced and holes were burnt into them. Quad (they're in Huntingdon) can repair the speakers easily (and add a protection circuit), but it will cost a few hundred at least. Then there's the lack of bass. Against a side wall or stacked, however, this is not so much of a problem. Alternatively, a REL subwoofer like the Stadium or Stentor will match in very well I have found. They are now my preferred solution to the Quad lack-of-bass problem.

Forget other vintage loudspeakers. I have heard most of them and found little of merit. Even the original Leak Sandwich really wasn't very good by modern standards. And whilst old horns might be efficient and easy to listen to, they are often highly coloured.

The Quad II power amps are sweet and liquid sounding when restored, but they have little power at around 100 watts. Other valve power amps like the Radford STA25 or 50 are interesting, but expensive. And remember that with old amps many of the components are well past their sell by date, including capacitors and many resistors. Even output tranny's deteriorate apparently. Your Quad 303 would do as a drive amp, although it was never the most lucid sounding design. A Quad 306 is satisfactory, or an Audiolab 8000 integrated or Audiolab 8000C & P pre/powers would match.

Even though a valve amp feeding electrostatics seems like a good idea, in practice I've encountered some terrible mismatches between them (due to transformers feeding transformers I suspect), so I don't feel free to make recommendations here. You have to try and see.

The Garrard 301 is more highly regarded than the 401, but bad 'uns can rumble. Nottingham Analogue can restore them and fit new parts to cure the rumble. A good condition 301 on a really good, solid stand, and all we are told will match any modern turntable.

Forget about old arms too - and especially old cartridges. I can assure you that there is no equal to today's highly rigid, one-piece cast arms from Rega (RB250/300) or SME, And whilst some old cartridges were good, they weren't that good.

With a 301 I would run a Rega or SME (according to budget) with a Goldring 1000 Series cartridge or, even better, a good moving coil like the Denon DL10 or even some thing more expensive, shook your budget stretch to it.

Sound quality? Well, it depends upon the exact item we are talking about, but the best vintage items were pretty neutral, which is why they are now highly regarded. Transparencies were the norm, and tuners too, probably because the dreaded integrated circuit with its myriads of non-linear, high feedback amplifying devices did not exist.

I suspect that many people are quick to turn to some older items because they offer an unprepossessing sound at a bargain basement price, together with the attraction of proven longevity and stable price.

STAR LETTER
One of your contributors, Malcolm Steward, once wrote an article about 'Star Earthing' and how this improved his system.
This article may not have been in your magazine but I would be pleased if he could do another (?) and describe how to implement ‘Star Earthing’. Any other information on improving my present system (Linn LP12/Lingo on Tripod stand, Naim Aro, Linn Kama, Naim 625/624 on kee Tables and Naim SBL speakers) would be of great help.

P. Marsh, Ramsbottom, Lancs.

Traditionally Naim amplifiers prefer star-earthing of mains cables. This involves wiring more than one cable into the same plug. In your case, this only involves wiring the cables connecting the SNAPS and the NAP 140 into the same plug, but imagine the difficulty when wiring up a four or six-pack active system, where up to eight cables have to fit into the same plug. Obviously such a situation is impossible without soldering all eight together onto a single mains lead. Such star-earthing situations are best left to the experts.

The second half of the question is far less complex. Put simply, Mana tables! Put the LP12 on a Mana Reference table, with a Mana power supply table underneath for the Lingo, followed by a custom-made two tier table for the amplification; this will produce a massive change in the system. John Watson of Mana suggests that using his special amplifier tables means that the 62 and Snapcs could sit side by side, on separate bits of glass, without inducing any hum in the preamplifier.

Following Mana-isation of your system, I would suggest upgrading the SNAPS to a HI-CAP power supply, upgrading the NAP 140 to a NAP 180 or NAP 250 power amplifier and changing the cables to the latest NAC AS speaker cables, if this has not already been done. From here, only the cartridge and preamplifier are suitable for upgrading, unless you want to go into the realms of silly money. The Troika is slowly being phased out, but it represents one of the finest matches to the Aro. As yet, I do not know whether the new Arkive will fit into Aro arms successfully, although I do know that the Lyra Lydian, Clavis and Pannarssus and the Audio Technica ART-I suit the system with the AR-D or Maxell XL-1 or XL-1S. You should find that AR has a very dynamic range, AD is bright and clean, while the Maxell tapes are nice and smooth. I feel that these tapes will not prove too taxing for the Sony’s recording capacity; although there are usually bias settings for chrome and metal tapes, twin decks are often more at home with ferrics, due to head limitations.

If possible, however, I strongly suggest you look at a good single cassette recorder, like the Sony TC-K470, Technics RS-BX404, NAD 6325 or Yamaha KX-530 models. The last two companies have models with ‘play trim’ that can adjust the tonal balance of pre-recorded cassette, and all offer good recording quality. Although twin players (i.e. dubbing decks) offer convenience and space saving, I have yet to find a model that can compete with a good single cassette recorder and generally, both recording and playback quality on twin players is not as good as a similarly priced single player.

With regard to amplification, set your sights slightly lower than the Audiolab 8000A, especially if you follow the guidelines I have suggested. I would look at amplifiers such as the Harman-Kardon 6150, NAD 3020i, or Denon PMA-350. At a slightly higher price point (around £200), the Mission Cyrus I or Arcam Alpha 3 would also suit. As long as you do not try to overdrive the loudspeakers, by turning the volume up too high, the Bose speakers will cope with these amplifiers.

The hiss that you are getting on FM broadcasts comes from lack of an adequate aerial, I am afraid. If the noises are more like high-pitched whistles and bird calls, then this can be reduced by pressing the ‘MPX’ (Multiplex) filter button on the cassette recorder or the mono button on the tuner.

Sony’s ICF world radios are very competent, but are designed for picking up every station known to man and not for high-quality FM listening. I would not suggest getting rid of the world radio, as they can be terrific fun, but I would recommend reconfiguring it to portable status and using a good tuner, like the superb Denon TU-260L in the hi-fi system, together with an indoor Maxview Omnivision aerial. There will still be some background hiss (only a good outdoor aerial can reduce this to an inaudible level) but it will be lessened.

Finally, a system such as Denon tuner, H-K amp and Yamaha cassette, would come to about £400. It would be worthwhile with such a system getting a decent three-tier stand, like Target, Soudt Organisation or Alphaeon New Concept, and cables, such as QED Incon, Tandy patch cords or low cost AudioQuest, Kimber or Sonic Link for the next purchase. Eventually, you may find that the Bose loudspeakers could be replaced with a pair of Mission 760’s or Goodmans Maxim 3’s, with good stands depending on your tastes.

THE CASE OF THE DISAPPEARING RADIO STATION

From my bungalow perched on the west side of the North Downs near Maidstone in Kent, I have a magnificent view across the Medway Valley. On a clear day I can see, shimmering in the sunshine, the Wrotham Hill transmitter tower a mere 6 or 7 miles away. Bearing in mind my close proximity to one of the most powerful transmitters in England, my query is - WHY can’t I receive Radio 3?

Current equipment is: Naim NAC52 preamp, NAP250 power amp, Musical Fidelity T1 Mk2 tuner, Naim SBL speakers (passive), Linn Sondek/Lingo/Troika/Ekos. On my roof at the end of a big pole, I have a Ron Smith ‘Galaxy S’ aerial, pointed directly at Wrotham. I have changed the co-ax cable, changed tuner (previously a Yamaha), tried a simple dipole, checked all connections up and down, all to no avail. By switching the tuner to mono, I can then hear Radio 3, but it’s very faint and fades in and out. I have spoken to the BBC technical department, and the chap there was singularly unhelpful. He didn’t really have an answer, but conceded this was under a welter of technical waffle.

I find all this doubly frustrating, since my wife’s Sony portable stereo radio/cassette picks up Radio 3 in glorious stereo, no problem. Incidentally, I can receive Radios 1 and 2 in stereo, even with the aerial completely unplugged! Please help.

Anthony Miller, Aylesford, Kent.

Ah yes, we’ve crossed the North Downs many times and the view on a sunny day is wonderful. Mind you, last time across the cloud base was so low that we drove up into a torrential thunderstorm; you
forgot to mention the bad bits! Wrotham is a familiar landmark to us, since even from this distant site it serves the whole of London and the South East.

I spoke to the BBC about your problem with Wrotham and they, like us, were baffled. There are very few possible options. As you note, Wrotham is one of Britain’s most powerful transmitters, turning out one megawatt (one million watts). Being just 6-7 miles on line of sight means you should be able to run light bulbs from your aerial (well, almost). The fact that your wife gets Radio 3 suggests you are not in a dead spot. The only two options left are cancellation in the downlead due to standing waves or the possibility that the tuner is not set to 91.3MHz, the frequency of Radio 3 from Wrotham, but to another frequency, possibly Talcolneston north of you in East Anglia which transmits Radio 3 on 91.9MHz. Your Galaxy 5 on a hill could pick up a transmitter like this with ease I should imagine.

Try the simplest remedy first: re-tune! If this is not the problem, then as the BBC suggested, try another aerial and, in particular, downhill. In your location a simple dipole with a short lead should give plenty of signal; just make sure it’s positioned well away from the Galaxy 5 and move it around. Even a wire dipole of the sort supplied with most tuners will do for the purposes of experiment. Radio 3 should come through with no problem at all. This will prove that the problem is in the downlead or aerial and we suggest you contact Ron Smith about this. He should be able to sort it out.

It strikes me that, just possibly, some very peculiar cancellation effect (ground wave versus sky wave, or similar) might just be causing Radio 3 cancellation at the specific position of the aerial, in which case lowering or raising it by a few feet will clear the problem, a job that must be a pleasure in your location, on a sunny day at least. I’m sure that one of these actions will provide a complete solution.

AROMATIC PROBLEMS

My present system consists of Linn Sondek (Valhalla), Naim Aro, Linn K9, (on Target TT2 support), Naim Nait 2, Spendor LS3/5A speakers on Linn Kan 2 stands. I use Audioquest F18 flat cables as I require an under-carpet run.

I am rather unhappy about my cartridge alignment. Without the use of a stylus protractor, it is possible to see that the centre line of the cartridge points to the left of the line of the record groove. This is the case across the entire record side, and confirmed by use of a stylus protractor. The stylus on the K9 appears to be too far forward of the mounting bolts for use in this arm, and there is no overhang adjustment available, as there are holes - not slots - drilled in the headshell.

Local dealers inform me that the Aro is only suitable for use with Linn moving coil models. Apparently the position of the headshell mounting holes has been optimised for Linn Asak and Troika cartridge geometry. Unfortunately, no dealer - or Naim Audio for that matter - can advise me on other cartridges that are suitable for the Aro in terms of geometry. Can you help? I was hoping to spend less than £200.

I would like to use a moving coil model. Are step-up devices for use with the Nait worthwhile?

I have also noticed that the quality of fit between the cartridge body and stylus assembly on the K9 leaves a lot to be desired. Could it be worthwhile to superglue a styli assembly onto an mm cartridge, bearing in mind the cartridge is useless once the tip wears out. Any advice on future upgrades warmly received.

Jim Mansfield, Newmarket, Suffolk.

There are two schools of thought with regard to cartridge alignment on the Aro; Naim's - and everybody else's! According to Naim Audio, the structural integrity of the arm itself is more important than problems caused by incorrect cartridge alignment. They maintain that the Aro/K9 combination will sound good even if it is misaligned. Others - especially in the States - feel that tracking distortion is clearly audible. While structural rigidity of the tonearm is more important than cartridge alignment, the two are not mutually exclusive. A properly aligned cartridge in the Aro will be better than one improperly aligned in our view, irrespective of the structural properties of the Aro, which we wouldn't criticise.

The crucial distance is from the mounting hole centre to the stylus tip (D in diagram). This distance is seldom specified, but manufacturers work to an agreed standard figure of around 10mm. When we asked various manufacturers and distributors to confirm the dimensions of their products it involved them in physically measuring it with their Garfield and Bart Simpson unbreakable rulers.

The Linn moving coils have an unusually short mounting-to-stylus distance of 7mm and it is for these cartridges that your Aro has been aligned. Most other cartridges (e.g. Audio Technica, Goldring and Dynavector), including your K9, have a 10mm mounting-to-stylus distance, the extra 3mm in your case putting the cartridge obviously out of alignment.

There are cartridges that come close to the 7mm figure however - they are the Ortofon 500 and 'OM' series, that range from £10 to £100. These have a stylus to mounting distance of 8mm; not 100% correct, but still far better. We suggest they offer the simplest solution to your problem, assuming you like their sound in the first place.

It should be possible to move the mounting position of the Aro back a couple of mm to suit the K9, but this would involve re-drilling the armboard, which could prove difficult. Alternatively, you could get a new arm board for the Aro, with the pillar mounting hole further back so that normal cartridges are correctly aligned.

There was a superglue frenzy among moving magnet cartridge owners in the Eighties, but fortunately it was short lived. It can be done, using a very small dab of glue, but I do not encourage it, on the grounds that any mistakes can be very expensive. Best to let this Eighties trend disappear, just like New Romantics, Snape Ranger, Filipaxes and - less fortunately - money.

Finally, you speak of future upgrades to your system. My feelings are that you should buy a Mana Sub Frame to fit on top of the TT2 shelf. Put the remainder of the £200 in the kitty and save for a Linn Lingo/Naim Armageddon/Pink Link (or similar) power supply for the LP12, adding separate Mana tables for the rest of the equipment as and when it becomes financially acceptable to do so.

From here, the small Naim pre power, such as a 62 or 72 preamplifier with a 90 or 140 power amplifier, beacons. Cutting costs further, one can even have the NA2 modified by Naim to act as a pre-amplifier, but I have not heard this modification as yet. Once you get to this level of amplification, it would then be the best time to approach the thorny subject of cartridges, as it is easy to change the input cards from moving magnet to moving coil on a Naim preamplifier. AS
Over the years, I have updated WAXING LYRICAL obvious. Over the years the wax syringed. revelation? Easy, have your ears experienced. More transparency, discovered the biggest improve- process the sound.

builds up and leaves only a small area, making the focus much clearer; a bit like taking the Dolby away from a tape without the hiss.

Also the stereo field is much wider, the whole effect 20% up on the untreated CD. My Celestion 700SE speakers are very revealing, and I was very pleased with the difference. Anyone who has doubts should come to me with an untreated CD; I will be happy to put them straight.

I must point out that Gold coated CDs do not sound very much different; normal CDs come up to Gold CDs' par once treated.

Also I have taken your advice with my speakers (April '92, Page 80). I found the Musical Fidelity P180 too harsh, so I went for the Audiolab, but couldn't afford the monoblocks. I've got another 8000P, which really has made such a difference.

W. Jason Davis
Bristol, Avon.

P.S. Laserguide has helped me with a few CDs. I had about 10 that wouldn't fast forward. They all do now - good stuff.

Please, please, no more about Greening CDs. My pen has run out. AS

CD codes were so misleading they have been dropped, as we explain in this issue. Our general feeling is that Green Pens work, giving much the same benefit you identify and describe. It's sort of subtle, but it is worthwhile. NK

THE SHAPE OF THINGS TO COME

Since I live in Jerusalem, I will make some prophecies: I predict that the course of DCC and Minidisc will follow that of DAT. Why?

First of all we are told that this will be a better or equal medium to CD. Then that it is cheaper; then that neither of them is true. You will have 27% of the data in DCC, and each prerecorded cassette will cost £1.2, or £3-4 for blank cassettes.

Second, cassette is not a hi-fi medium, unless you are ready to invest in metal tapes and £1000 decks. Its popularity comes from the fact that it is cheap. I personally use it only to record CDs I don't like so much before I change them (to other CDs), or to make cassettes for the car. And for these purposes I'm completely happy. I get 80% data, or maybe 60% - but not 27%. When I want to listen to music, I put a CD or an LP on in my home.

The price problem is not of the hardware, but of software. That is very much (or was) the problem with CDs. You can buy a player for £150, the price of 10 CDs. Then the problem is who will buy a DCC: neither the hi-fi enthusiast who will find it lacking compared to CDs (and of course LPs), nor the common man, who gives not a damn about sound, he just likes his £29 Aiwa personal or JVC £299 stereo; he is just not looking for more.

Who needs DCC, when a good blank cassette costs £1? O.K. do I just sit and wait? By the time anyone decides himself between DCC, DAT and Minidiscs some ten years from now, I think Music-card will take them all.

Moshe Benarroch,
Jerusalem, Israel.

You are probably right. I have doubts about any of the new formats being the 'shot in the arm' the industry needs. Perhaps the future lies with implanted D/A converters working on the synaptic level directly. Or, even further into the future, genetically engineered radio receivers at the brain stem itself. 'Gypsy Rose Sircom'

Seriously, the price of the software is going to be a real stumbling block for DCC. According to BASF, the tape manufacturers, blank DCC tapes will cost around £5, certainly for the first year. As they must be a particular formulation, recently they were being very firm about there being no prospect of a DCC equivalent to a 99p cheap ferric. They admitted that metal tapes, of roughly equivalent cost to DCC, account for an almost infinitesimal percentage of the market (less than 1%). A marketing anomaly suddenly became obvious, with a tape manufacturer promoting the tape itself as though it were a 'high-end' product, yet the trend in promoting the hardware emphasising the middle, and soon budget market.

Polygram, too, have announced that retailers will be charged the same price for DCC pre-recorded tapes as for CDs; this doesn't necessarily mean they must retail for the same price, but I don't see many retailers accepting lower margins to popularise the new medium. The first samples of pre-recorded DCC tapes we've had, I'm sorry to say, were not encouraging, sounding noticeably less dynamic than tapes recorded on the machine from digital sources. Analogue cassette replay on our sample DCC900 machine we all thought was preferable: surely shame mistake, here, shomewhore? EB

Shurrup Eric. Nobody's meant to say that analogue prerecorded cassettes sound better on a DCC recorder than digital prerecorded cassettes. You might find yourself on a non-return trip to Eindhoven. NK

DE RIGEUR FOR QUADS

In your feature on Mr. Jolly's system (July, p45) you mention Tandy patch cords 'which are proving to be de rigueur for all Quad amplifier owners'. This is interesting as the Tandy cords are very much cheaper than other interconnect cables touted in the market. As cheapness is presumably not the main consideration, what precisely are the superior sonic benefits of the Tandy patch cords? J. Hall,
Tunbridge Wells.

It's all a matter of capacitance, resistance, and impedance. Tandy's patchcords are advertised as being designed for home-studio set-ups and have low capacitance, which generally - though it depends on the amplifier - is associated with relatively high transparency. It's not always that simple,
through old valve stuff. Rebuilt Leak Stereo 20 and a Grail; in equipment terms Chesterfield Show and more. Her live) and Mary Black (seen
Technics CD player and Sony Audio Innovations 300 amplifier, switched on to Rory Block (seen cassette deck for some time and consisted of a TD 124 as a toy to keep me too!
was nice to find a magazine World (with free Compact CD. This was just the begin-
ing. I thought at the time, that it was nice to find a magazine written by seemingly kind spirits. The free disc was good tool.
I also bought a Thorens TD 124 as a toy to keep me occupied (a remarkable turntable for little money). Until then, my equipment had remained settled for some time and consisted of a Logic 101/Helius arm/AT F5, Audio Innovations 300 amplifier, Decca London (from the Deccaphilia period) and Technics CD player and Sony cassette deck.
Since then I have bought every issue of Hi-Fi World, many of the reviewed albums, got switched on to Rory Block (seen her live), and Bob Black (seen her live), developed a taste for African music, been to the Chesterfield Show and more. Worse still, I have got switched on to the quest for the Holy Grail, in equipment terms through old valve stuff.
So out has gone the Audio Innovations and in has come a rebuilt Leak Stereo 20 and a Luxman LV82 preamp. (Thanks Haden Boardman - really nice guy.) The improvement is dramatic, but on the other hand, the car is knackered, the house needs decorating, my student
son has an overdraft problem and my wife is threatening to leave (and I'm not a good cook)! Worse still, bearing these points in mind, how the hell can I get my hands on a Leak Troughline in pristine condition? Paul Topping Manchester.
Easy! See our list last month - to which we should add Station Sounds on the down platform of Worthing Station, though it's a bit of a Lenny train (free) from Manchester. Otherwise, there's always our new classified section! EB

You've, you've 'caught it', whatever it is (medical science hasn't got around to dissecting this problem yet). Advanced symptoms are excessively early awakening on Sunday mornings to get to car boot, radio rally and what have you sales before even the cockerels have had their cornflakes. Hyper-optica eyesight develops in order to differentiate a Troughline and an old tin of biscuits at 50yards; bunched muscle syndrome projects the body over said distance in response to competitive signs from half a dozen old gaffers also knowing ominously in the same direction. There's no known cure. NK

In studio recording there's a bewildering choice of technology available just as there is in hi-fi; only the problems of interface are multiplied. Choose some cable, choose some plugs, mixing desk, tape recorder (digital/anologue) tape, amp, speakers, an engineer with different ideas to the last and bongo, or its binga. What if the echo correction system is rubbish and smooths out the signal so it sounds so-so-so...er, smooth. I don't know, but I have a theory most of us are suffering with a bad case of further audio rectal tremors, yes it is all a lot of hot air. As to the BS CD, it's not sparrowing twittering in the tower it's proof of the success of CD. It was bats in the belfry. Yes, CD really is that good.

Eric Bradtwaite pondered the origin of 'fisc' in his review of the Michell Iso turntable. May I suggest he need look no further than Finland! Iso in Finnish means Great as in Iso Britannia - Great Britain. Great would seem to apply describe the much admired head amp.

Great Heavens! Strikes me as a bit tenuous, but why not? EB

In earlier times and southern climes, it meant 'equal' - hence Isobar, meaning line of equal pressure. Just add 'ik' as a suffix and it then becomes Scots for something entirely different. Funny how these words get around! NK

The Australian Story, Part II. I wrote to you several months ago about the high prices of British equipment in Australia forcing me to buy Japanese. Well, the reasonably priced Pioneer PD75 I had on order then duly arrived and proved to be a very classy machine, it will be staying. I also tried a Rotel 965, which was returned. Compared to the Pioneer it made a Steinway sound more like a Fortepiano. I also briefly tried a friend's Kenwood 9010 transport and Meridian 203, I didn't like this combo at all in my system: much too bright and lightweight.

After some experimentation, the Pioneer, sited on its own table and connected to my Naim preamp by Monster Interlink 400 (very important, makes a world of difference), makes some very nice noises via the Isobars and some magical ones via the headphones (I bought the Naim and Linn equipment a long time ago when such things were affordable to me). I suppose this means I've joined the infidels. Oh well, what odds, the convenience is nice.

Barry Smith, Wellington, NSW, Australia.

I have just received a subwoofer from R.E.L. It is their least expensive model and it certainly adds bass to my system. (Inappropriate use of the controls can give one that fully authentic 'head in a bass-bin' club mix, but most of the time it is controlled and subtle: as you said in your review.) I believe the Stigian subwoofer improves the stage depth of my system. This started me thinking about the reason why stereo speakers can provide longitudinal information. I have not heard a reason why stereo speakers should give depth, but my argument rests on the assumption that instruments produce frequencies both above and below their fundamental note'. Different frequencies of sound travel at different velocities in air. The differences are tiny but the ear is very sensitive to shifts in phase which means differences under a wavelength can be detected. If this is the case, it is not possible that we can detect different frequencies arriving at different times and connect them all with the same instrument? I don't think that such a "fast Fourier transform" is beyond the capabilities of the brain, as it seems to do many other amazing things.

If we can detect such subtle differences, then the calculation to work out relative position of a wall is not too hard. It's a bit like echo location in bats but without emitting a squeak first. Once you have the relative position of a wall, it is possible to tell which instrument is nearer the wall or further from it.

My subjective observations are as follows: • Adding a subwoofer improves imaging by adding bass under-
tones which remain alive longer in halls than high frequencies:  
- Multi-track rock recordings often sound “flatter” than live 
in halls than high frequencies:  
- I and most people I have asked have great difficulty in determin-
ing the distance to an electronically produced pure tone (a 
digital watch alarm for example). These tones are usually pure so 
the argument without serious 

On a separate note, I see that 
Linn Sondeks have slipped from 
the fore and many of your 
reviewers (Malcolm Steward 
excepted) now use alternatives. 
However, switching from one 
amp to another is an unaffordable 
extra for most of your readers, 
and I would hazard a guess that there 
are vastly more owners of LP I 2s 
amongst your readership than of 
Pink Triangles, Rotkans etc. It 
would be helpful if, when 
reviewing equipment, you 
remembered that there are quite 
several companies making high 
quality pre-amp and power 
amp units. 

Finally, when are you going to 
give us a review of the Naim 470 
which seems to fill the bill 
especially with the Sondeks. 

R. D. Bishop,  
New Malden, Surrey.

Noel’s Sextets are still in 
constant use, with both the SA-
470 and more prosaic 
amplication. They are revealing 
of source, but work well with a 
variety of equipment, such as 
Audiolab monoblocks. My own 
favourite partner is a Naim 72/ 
Hi-CAP/250, which seems to fill 
the Sextets nicely, although 
there have been a number of 
seemingly successful 

On the subject of reviewers 
using the Linn LP12, although 
many of us, myself included, 
have abandoned the LP12 in 
favour of other turntables, 
those who have done so usually 
herited the well-worn Linn’s 
and paid for their new 
amplication. Switching from one 
expensive turntable to another 
is just as much a hardship 
from 

A LONG MONTH  
I was most interested in Peter 
Wood’s “Letter of the Month” 
and NK’s response in the June 
issue, with particular reference to 
Philips’ view that “cassette has 
suddenly and inexplicably gone 
into rapid sales decline”. (This 
sounds like wishful thinking, with 

LEAK LOVE  
In your January 1992 issue I read 
with great interest your article 
about the work of Peter Lindley 
and his restored Quad II valve 
power amplifiers. I decided to do 
a similar job of restoration on 
my own Leak Stereo 20 power 
ampittance. Firstly, I stripped down 
the amplifier and reimpedance 
and repainted the chassis and 
transformer covers. I then 
rewired the whole amplifier with 
Kimber TC internal wiring cable, 
including the hardwiring on the 
underside of the tag board and the 
input/output wiring in the 
transformers. I also replaced the 
valve bases with new high quality 
ceramic types, new polypropylene twin 32UF 
reservoir capacitors replaced the 
old electrolytic types. I then 
replaced the original phono 
connectors with new high quality 
gold plated types and I did away 
with the eight pin powersignal 
connector for use with the Leak 
Point One stereo preamplifier. 

On connecting my now 
completely restored ampliﬁer to 
the rest of my system, I found a 
huge improvement in sound 
quality even compared with the 
original restoration. The rest of 
the system is as follows: Source 
turntable with 3D power supply 
and Odyssey tonearm with 
Audio Technica OCS cartridge, 
connected to a Beard P500 
preamplifier with the restored 
Leak Stereo 20 amplifier driving 
a pair of DCM Time Window 
1A transmission line loudspeakers. 
The latter are very under-
rate speakers which I have 
ever seen reviewed in any hi-fi 
magazine in this country. 

Patrick Smith,  
Glasgow.
The design specifications for DCC call for a number of technical requirements: data compression, thin film recording heads, auto-reverse mechanism, nine tracks to follow accurately, etc., etc., that tend to put up question marks, in my mind at least, with regard to long-term reliability.

But let us assume that none of these technical hurdles give any trouble and the sound quality of production units turns out to be immaculate, at least to the ear of Joe Public. If a new product is to penetrate a market it is self-evident that the product has to have something new to offer - if you like, an incentive to buy. Past history comes down very heavily with firm confirmation of this view.

1) Analogue Cassette, of which NK has been known to remark that "the TD-V541 returned a stunningly good performance when recording and when replaying pre-recorded tapes" (p.19, December '91). We have to bear in mind that where Nakamichi, JVC and Technics lead today the rest of the herd will follow tomorrow (or go bust) - analogue cassette is still getting better. This choice would fully integrate with existing software to allow the filling of those blank tans on home recorded cassettes, and allow tapes to be made for the car and personal replay. O.K., so it ain't digital and DCC may give marginally better sound when reviewed by NK and others partnered with high-end amplifiers and speakers in order to allow the best of the review machines to shine. The margin between the best of the review group and the 'also-ran' competent machines may be a lot less obvious when partnered with decent home equipment in their own price field.

2) DCC may deliver CD quality sound, or better, but will not fill the tails of existing cassettes or record tapes for the car or personal use - and has unknown long-term durability of the hardware (reviewers commonly advise against auto-reverse mechanisms in price-for-price comparisons) and a software durability that cannot hope to compete with CD, and more than twice the price of the Compact Cassette! In Analogue Cassette technology's position my decision clearly has to be for choice No.1.

No high-volume manufacturer is going to make a fortune selling hardware at the £300+ price level - the volume just is not there and at the lower price levels the situation becomes worse for DCC as its potential for super quality sound becomes drowned by the mediocrity of amplifiers, graphic equalisers (YUK), etc., that are the sad components of the world of the mid system. And it is just this market in which analogue cassette has been such a success - with its shortcomings masked - long enough for manufacturers to improve machines and tapes to the current high standard.

I feel that DCC has much in common with Philips' now defunct video cassette format, V2000, in that an over-long R&D period has allowed the competition to improve to the point where the market no longer waits.

I hope for Philips' sake that I'm wrong but I can't help wondering how atypical my view may be.

Red Smyth, Porthmadog, Gwynedd.

P.S.

There was a young man from La Paz
Who soaked his CDs in warm Daz
They came out so clean
Like none you have seen
And made Beethoven's 9th sound like jazz!
Why do we win these awards?

Because they are voted by the public! Satisfied customers are so impressed by the service, advice and ultimate quality of the hi-fi we supply, that not only do they recommend their friends but also take the trouble to nominate Grahams for these honours. Five air-conditioned dem rooms, probably the finest hi-fi facilities in Europe (most people are amazed when they visit us for the first time), lots of FREE parking, helpful, trained staff, 60 years trading, systems from £400 upwards. Ring for a chat, an appointment and a map!

Come and see why!

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Canonbury Yard
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SUGDEN AUDIO PRODUCTS

Distinctive Hand Crafted British Products For The Discerning Music Lover

A48B

Analogue Integrated Amps
Pre/Power Amp Combi
Digital Precision
Digital Signal Processors

For information on our product range write to:
J.E.Sugden & Co. Ltd.,
Valley Works, Station Lane,
Heckmondwike, West Yorkshire
WF16 0NF
or telephone: 0924 404089
FREE TICKETS TO IN-CAR '92 - AND TWO POPULAR TDK TAPES - FOR SPEEDY HI-FI WORLD READERS!

In-Car '92, staged this year at Hall 3 in London's Wembley Exhibition Centre on 5th and 6th September 1992, is every driver's chance to see and hear the very latest in-car entertainment equipment - and to listen to live music staged by London's favourite dance station, Kiss FM.

Hi-Fi World readers have the chance to visit the show absolutely free of charge. We have fifteen pairs of admission tickets to give away, along with two TDK AR-90 blank audio tapes, for the first fifteen names drawn out of the bag. Simply write your name and address on a postcard and send it to:

In-Car '92 Ticket Offer, Hi-Fi World, 64 Castellain Road, Maida Vale, London W9 1EX

The first fifteen readers drawn out of the bag will receive a pair of tickets and two TDK AR-90 blank audio tapes.

WINNERS!

MICHELL GYRODEC WINNER

When we asked for imaginative non-hi-fi uses for a Michell Gyrodec, we hadn't realised how many of our readers had been invited to the Royal Enclosure at Ascot and wanted one as a hat, were in dire need of a Kebab rotator, or had a problem with flabby rodents. We were delighted by some of the accompanying illustrations, especially a working Zoetrope band.

Finally, swayed by the sheer number of hamster-multi-gyms, we decided on Mr. Lee Wilkinson of Brockley's timely Olympic cartoon. He will shortly be receiving his rodent-exercising turntable, and we hope he will put it to its proper use as soon as the Olympic flame has been extinguished!

Thanks to all the other entrants for their inventive and imaginative replies. Sadly, there is not enough space to print all of them, but we particularly enjoyed the entry from Mr. Griffin of Manchester, who read "For use as a rotating display of Noel Keywood's head in the foyer of a Japanese cassette deck manufacturer." Strangely, Noel didn't find this entry especially amusing - we can't think why! Congratulations to Mr. Griffin - a special prize of a free T-shirt is on its way to you.

PENTAX CAMERA WINNERS

Everyone who heard the message on the April Black Competition has now received their Pentax WeatherZoom camera. Pentax Managing Director, Gerry Dingley, recorded a message to all the lucky winners, but we thought we'd print it instead of putting it on another CD:
Pentax would like to congratulate all nine winners from Hi-Fi World's Mary Black Competition in April.

All of us at Hi-Fi World hope the winners are happy with their holiday snaps. We weren't allowed to win a Pentax, but not wanting to be left behind we've upgraded the editorial pin-hole camera to a Box Brownie!

The lucky nine were:
Mr. R. S. Bull of Egham, Ms P. Chown of Huntingdon, Mrs J. Davenport of Watford, Mr. A. Hillard of Yeovil, Mr R. S. Bull of Egham, Mr D. Holbert of Southampton, Ms I. Matthews of Lancaster, Mr R. S. Bull of Egham, Mr. C. Wishes of Middlesborough.

Security challenge, the first ever in the UK. See some of the most advanced security devices being tested for effectiveness.

If you're looking for quality sound, a security device to protect your car or a means to communicate whilst on the move, don't miss In-Car '92. The Show is open between 10am and 6pm Saturday 5th and Sunday 6th September. Admission, except for the lucky fifteen, is £5 for adults and £2.50 for children.

NAIM CDI COMPETITION

Following his successful entry in our Naim audio competition, Chris Bennett's Naim CD1 Compact Disc player was installed by Gary of Stereo Stereo in Glasgow. Gary travelled the round trip of over one hundred miles, leaving him delighted at its performance.

Our thanks to Naim Audio and Stereo Stereo, who literally went out of their way to help Mr. Bennett with his new CD player.
ANTI-STATIC RECORD SLEEVES
Translucent antistatic record sleeves from Nagaoka, according to availability. A surface treatment makes them anti-static, lessening dust attraction. This helps keep records pristine. They are supplied in packs of fifty. We suggest you regularly change sleeves in order to prevent trapped dirt contaminating records, especially after cleaning. The record label is clearly visible through these sleeves, an aid to easy identification.

LP SLEEVES (50) .... PRICE £7.50

NAGAOKA CD CLEANING KIT
As with cassette deck cleaning kits, we don't recommend the 'cogs and wheels' cleaners and choose not to sell any of them. Tests we have carried out with a Cambridge CD-I CD Quality Control Unit clearly show that careful manual cleaning is the most effective way of removing all types of surface contaminants without causing damage to the disc. Remember that CDs must not be scratched - even finely. Tests showed that the Nagaoka kit was the best all round cleaner. It has a solvent and a chamois leather pad which, together, bring the CD surface back to almost as-new condition.

NAGAOKA CD CLEANING KIT ..........£10.50

NAGAOKA ROLLING RECORD CLEANER
The big drawback with most record cleaners is that they fail to remove all types of dirt. Brushes pick up fluff, but they redistribute fine dust around the grooves, causing noise build up. Nagaoka's rolling record cleaner actually lifts dirt from the bottom of the groove - even fine dust. It uses a peculiar form of sticky coating on a soft foam backing. Dirt of all types - especially fine dust of the sort left by brushes - is removed completely. It is lifted from the record's surface, and no deposits are left behind. This is an effective way to dry clean a record.

ROLLING RECORD CLEANER ............ PRICE £10.20

AUDIO TECHNICA GREEN CD RING STABILIZER
These are detachable green rings which are fitted round the circumference of the Compact Disc. The non-slip material allows the disc to be picked up without touching the playing side and leaving fingerprints. It also raises the disc slightly from any surface it's placed on, avoiding scratches if you don't replace it directly in the jewel box, as you should! It also adds a tiny but significant degree of mass to the outer edge of the disc, improving its stability and reducing vibration when it rotates at high speed inside the CD player. Green absorbing stray red laser light, so reducing random reflections within the disc, much like a green pen. So the rings perform many useful functions - and they are removeable too! Improvements to the sound include better focused and firmer images, plus a generally denser and richer sound.

GREEN RING STABILIZER (5) .............£6.50

AUDIO TECHNICA RECORD CLEANING SYSTEM
The Audio Technica Record Cleaning System removes both dirt and static. When you lift the pad from the record, dirt comes off with it. A tiny amount of cleaning agent inside the handle provides just enough humidity to dissolve fingerprints, oils, and film. A bottle of special fluid and pad brush are included.

AUDIO TECHNICA RECORD CLEANING SYSTEM .......... £10.50

AUDIO TECHNICA CD LENS CLEANER
Here's a product for smokers in particular. However, seeing the peculiar haze that can coat windows even when there are no smokers about suggests this clever little gadget is a necessity for one and all. It is a laser lens cleaner for your CD player, beautifully made by Audio Technica. Contained in the pack is a disc with fine brushes on it. Each brush takes one drop of cleaning fluid, then it is inserted on it. The brushes gently clean the laser lens, removing oil, grime, dust and other airborne deposits like nicotine (ugh!). Audio Technica recommend use once a month.

CD LENS CLEANER ............. £16.25

CD JEWEL CASE
To house and protect your CD.

CD JEWEL CASE .......... £1.00

ELECTRONIC STYLUS CLEANER
A little gadget is a necessity for one smoker about suggests this clever little gadget is a necessity for one and all. It is a laser lens cleaner for your CD player, beautifully made by Audio Technica. Contained in the pack is a disc with fine brushes on it. Each brush takes one drop of cleaning fluid, then it is inserted on it. The brushes gently clean the laser lens, removing oil, grime, dust and other airborne deposits like nicotine (ugh!). Audio Technica recommend use once a month.

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CD LENS CLEANER ............. £16.25

LASERGUIDE
There are many factors that can undermine the process of converting the pits on a Compact Disc into a digital signal to feed your CD player’s D/A converter. How efficiently your player’s transport can send laser light into a CD and then accurately read the reflections is crucial. The surface of the CD itself is often a problem. The clear polycarbonate may look smooth to the naked eye but viewed under a microscope it is quite rough. This leads to unwanted random refraction and reflection of the laser light, causing additional jitter on the recovered digital signal.

Laserguide is a carefully engineered silicone based treatment which has a reflective index close to that of the CD’s polycarbonate surface. It helps.
A method of keeping your stylus sharp and bright for perfect tracking without using fluid. We’re offering a whole sheet of card with an aluminium oxide micro-abrasive coating. Cut a strip off, about the size of the sticker on the side of a matchbox, and draw it gently under the stylus from the back to the front. It removes the gunk that builds up. One sheet should be more than enough to clean your stylus at least forty times.

**HI-FI WORLD DRY STYLUS CLEANER**

**PIXALL MK II RECORD CLEANER**

Simple in both function and design, and made in the UK, this uses a roll of sticky tape which lifts the dust out of the record groove. Three or four passes will clean the record very effectively, and can reduce static at the same time. After each pass, the dirty length of tape can be peeled off and thrown away, reducing the risk of any gritty particles picked up being ground back into the vinyl. When the tape roller runs out, a replacement is simply clipped in. This is one of the most effective ways of cleaning an LP.

**ON STYLUS CLEANER**

Here’s another simple but effective cleaning tool. It consists of a stylus brush and cleaning solution. Use carefully to keep your pickup cartridge stylus and cantilever clean.

**STYLUS CLEANING KIT**

.. £2.50

**TDK KITS**

A comprehensive range from TDK for cassette decks, Compact Discs and even connectors. The CK-A1, head cleaning kit includes two bottles of fluid for heads and rubber pinch wheel, and cotton buds for applying it. The CK-TB pack has a single bottle of dual-purpose liquid.

TDK offer three cleaning pens. Each with a soft double-ended replaceable shaped tip. The Audio Head Cleaning Pen for cleaning cassette heads, the CD Cleaning Pen for removing finger marks from CDs, and the A/V Connector Cleaning Pen for polishing up audio plugs and sockets. The CD cleaning kit contains a bottle of fluid and a cloth which can be used for removing grime and stains. Finally, a dandy CD cleaning tool for applying the cleaning fluid and drying the CD off afterwards.

**TDK HEAD CLEANING KIT**

CK-A1 .. £5.50

**TDK HEAD CLEANING KIT**

CK-TB .. £4.65

**TDK AUDIO HEAD CLEANING PEN CP-AHI** .. £5.00

**TDK CD CLEANING PEN CP-CDI** .. £5.00

**TDK A/V CONNECTOR CLEANING PEN CP-CRI** .. £5.00

**TDK CD CLOTH CLEANING KIT CD-CZTP** .. £6.50

**TDK WET AND DRY CD CLEANER CD-CITB** .. £8.75

**RECORD STORAGE CUBE**

JUST PAY FOR FIVE .. (£2.10)

JUST PAY FOR SEVEN .. (£2.94)

**GOLD PLATED SPADE CONNECTOR**

For amplifiers with loudspeaker screw terminals, here is a heavy, duty gold plated spade connector. It has the same unique axial clamp connector as the 4mm plugs described above.

**SPADE CONNECTOR**

GOLD PLATED (4) £10.00

**CUBE PRICE**

£42.00 EACH

**FOR 6 CUBES,**

JUST PAY FOR FIVE .. (£2.10)

**FOR 8 CUBES,**

JUST PAY FOR SEVEN .. (£2.94)

**FREE!**

20 RECORD SLEEVES WITH 2 CUBES

50 RECORD SLEEVES WITH 4 CUBES

**RECORD ATTACHMENT PRICE**

£1.00 EACH

**STYLUS ATTACHMENT PRICE**

£2.00 EACH

**CUBES**

20 RECORD SLEEVES WITH 2 CUBES

50 RECORD SLEEVES WITH 4 CUBES

**RECORD STORAGE CUBE**

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**PIXALL MARK II .. PRICE £10.75**

**REFILL ROLLER .. PRICE £2.75**

**LASAWAY GREEN PEN**

When red laser light hits the silvered reflective surface of a disc, some of it scatters and is later reflected back off the disc edges, causing optical interference. Because green is far removed in the light spectrum from red, an opaque green coating effectively absorbs this scattered light, reducing interference signals reaching the laser and improving sound quality. The green coating is applied to outer and inner edges. It absorbs this scattered light, smoothing out that surface resulting in a claimed 50% reduction in refracted stray light. It is suggested that this improves stereo depth and openness. Video Discs also benefit with a sharper picture and less noise.

**DRY STYLUS CLEANER**

HI-FI WORLD SEPTEMBER 1992

[Image and text related to audio accessories and cleaning tools]

**HI-FI WORLD**

**SEPTEMBER 1992**
SPECIAL MAIL ORDER

SORBOTHANE CD FEET

With "Hi-Fi World" and our sweatshirts deep. Made from a soft, slightly sticky feeling form of artificial rubber known as Sorbothane, these feet have the peculiar ability to soak up vibrational energy, due to their high internal kinetic losses. Some people go nuts with them, swearing they improve everything, from the TV to the frigde! We sell them for use (as intended) with CD players, turntables and various other hi-fi components that might be sensitive to vibration. They improve sound quality by providing a more stable platform. Well-nutty and a lot of fun.

AUDIOPHILE MUSICAL CABLES

Audioplan Musicables are rapidly gaining a reputation for high quality, hi-tech construction, using space-age materials for inspiring sound quality. The loudspeaker cables, supplied terminated with Audioplan Musicables' unique silver plated copper 4mm plugs, are carefully braided to avoid RF interference. The three cables, LS3.5, LS6 and LS12 are designed for mid-price and high-end and reference systems respectively, though since some amplifiers are used for low level sources, such as with turntable to amplifier or when using a passive preamplifier. The latest cable, Digitenna, is designed to be a reference co-axial lead for aerial downleads or digital interconnect. It can be supplied unterminated, or with phono or BNC plugs. Finally, the knowledge acquired in signal cable design has recently been adopted in power cable design, with microphonically damped mains cables of very high quality. While the Audioplan Musicable range is not the cheapest on the market, they are some of the finest sounding around.

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**HI-FI WORLD SPECIAL AUDIO ACCESSORIES ORDER FORM**

Please send me:

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record storage cube (XL, L, M)</td>
<td>£42.00</td>
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<tr>
<td>Sweatshirt (state size and colour)</td>
<td>£12.00</td>
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<tr>
<td>Hooded track-top (one-size)</td>
<td>£7.99</td>
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<tr>
<td>T-Shirt (state size and colour)</td>
<td>£7.99</td>
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<tr>
<td>Pixall Mill Record Cleaner</td>
<td>£10.75</td>
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<tr>
<td>Pixall refil roller</td>
<td>£2.75</td>
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<td>Hi-Fi World Dry Stylus Cleaner</td>
<td>£1.95</td>
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<tr>
<td>Kontak cleaning fluid</td>
<td>£21.20</td>
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<tr>
<td>CD Jewel Case</td>
<td>£1.00</td>
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<tr>
<td>Nagaoka Anti-static record sleeves</td>
<td>£7.50</td>
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<td>Nagaoka rolling record cleaner</td>
<td>£10.20</td>
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<td>Nagaoka CD cleaning kit</td>
<td>£15.50</td>
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<td>ON Stylus Cleaning Kit</td>
<td>£2.50</td>
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<tr>
<td>Laserguide</td>
<td>£14.95</td>
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<td>Audio Technica CD Lens cleaner</td>
<td>£16.25</td>
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<tr>
<td>Audio Technica Record Cleaning System</td>
<td>£10.50</td>
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<tr>
<td>Audio Technica Green CD Ring Stabilizers (Pack of 5)</td>
<td>£6.50</td>
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<tr>
<td>Audio Technica electronica stylus cleaner</td>
<td>£19.95</td>
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<td>Audioquest Sorbothane feet</td>
<td>£27.95</td>
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<td>Audioquest Optical link Z</td>
<td>£69.00</td>
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<tr>
<td>Audioquest Quartz cable (pair)</td>
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<td>TDK Head Cleaning Kit CK-A1 (double bottle)</td>
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<tr>
<td>TDK Head Cleaning Kit CK-TB (single bottle)</td>
<td>£3.65</td>
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<td>TDK Audio Head Cleaning Pen CP-AH1</td>
<td>£5.00</td>
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<tr>
<td>TDK CD Cleaning Pen CP-CDI</td>
<td>£5.00</td>
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<tr>
<td>TDK AV Connector Cleaning Pen CP-CR1</td>
<td>£5.00</td>
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<tr>
<td>TDK CD Cloth Cleaning Kit CD-C2TP</td>
<td>£6.50</td>
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<tr>
<td>TDK Weld bond CD Cleaner CD C1TB</td>
<td>£8.50</td>
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<tr>
<td>Audioplan Musicable LS 3.5 per mln mtr.</td>
<td>£1.10</td>
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<td>Audioplan Musicable L6/S per mln mtr.</td>
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<td>Audioplan Musicable LS12 per mln mtr.</td>
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<td>Audioplan Musicable AF MKV 0.5 mln mtr.</td>
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<td>Audioplan Musicable MKV 1.0 mln mtr.</td>
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<td>Audioplan Musicable SUPER AF per mln mtr.</td>
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<td>Audioplan Musicable SUPER AF 0.5 mln mtr.</td>
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<td>Audioplan Musicable SUPER AF 1.0 mln mtr.</td>
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<tr>
<td>Audioplan Musicable SUPER X-WIRE 0.5 mln mtr.</td>
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<td>Audioplan Musicable SUPER X-WIRE 1.0 mln mtr.</td>
<td>£168.50</td>
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<tr>
<td>Audioplan Musicable DIGITENNA per mln mtr.</td>
<td>£27.50</td>
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<tr>
<td>Audioplan Musicable DIGITENNA per mln mtr terminated</td>
<td>£42.50</td>
</tr>
<tr>
<td>Gold plated spade connectors</td>
<td>£10.00 (4)</td>
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<tr>
<td>Arcam RCA phono plug</td>
<td>£15.50 (4)</td>
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<tr>
<td>Mitchell Engineering Gold-Plated Side Entry Banana Plugs (4)</td>
<td>£10.00</td>
</tr>
<tr>
<td>Mitchell Engineering Gold-Plated Sure-Loc Banana Plugs (4)</td>
<td>£10.00</td>
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<tr>
<td>Mitchell Engineering Rhodium-Plated Sure-Loc Banana Plugs (4)</td>
<td>£18.95</td>
</tr>
<tr>
<td>Mitchell Engineering Gold-Plated Speaker Cable Connectors</td>
<td>£10.00</td>
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</table>

All prices include postage & packing in the UK only.

I enclose cheque/PO for £________ made payable to Audio Publishing Ltd.

I wish to pay by Visa/Access, please debit my account no:

Name__________________________

delivery Address__________________________

Tel:__________________________

We are now offering back issues of Hi-Fi World. Unfortunately, all issues prior to September 1991 are completely sold out, but subsequent issues are available for £2.00 including postage and packaging. Issues with Compact Discs (Oct.’91, Nov.’91, Apr.’92) are available for £2.80.

**HI-FI WORLD BACK ISSUES ORDER FORM**

Please tick the box next to the issue(s) you wish to order:

- September 1991
- October 1991 (incl. CD)
- November 1991 (incl. CD)
- December 1991
- January 1992
- February 1992
- March 1992
- April 1992
- May 1992
- June 1992
- July 1992
- August 1992

Total no of issues ordered__________________________

Total price__________________________

I enclose cheque/PO for £________ made payable to Audio Publishing Ltd.

I wish to pay by Visa/Access, please debit my account no:

Name__________________________

delivery Address__________________________

Tel:__________________________

Please send completed order form together with your cheque/PO to:

**HI-FI WORLD, 64 Castellain Road, Maida Vale, London W9 1EX.**
World favourites

**COMPACT DISC PLAYERS**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SONY CDP-497</td>
<td>Superb starter CD. Packaged with facilities.</td>
<td>£160</td>
</tr>
<tr>
<td>DENON DCD-580</td>
<td>Advanced Interactive 20-bit based player. Rather 'grumpy' and rough-edged, but with a good sense of rhythm and texture.</td>
<td>£180</td>
</tr>
<tr>
<td>TECHNICS SD-7000</td>
<td>Technics Cartridge, Simply one of the finest CD players on the market.</td>
<td>£200</td>
</tr>
<tr>
<td>MISSION DADS</td>
<td>Hitstream based. Very even, with forceful bass. Some lack of spaciousness.</td>
<td>£300</td>
</tr>
<tr>
<td>PIONEER PD-8700</td>
<td>Single-bit player, with 'stable-base' CD turntable. Fast and pacey, with good dynamic range.</td>
<td>£350</td>
</tr>
</tbody>
</table>

**COMPACT DISC TRANSPORTS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCAM DELTA 170.3</td>
<td>Smooth. Draws the listener into the performance. Improves on all the strengths of the 170.</td>
<td>£650</td>
</tr>
<tr>
<td>TEAC P-100</td>
<td>Slightly under-rewarded for some, but subtle and highly detailed.</td>
<td>£150</td>
</tr>
<tr>
<td>MERIDIAN 602</td>
<td>Well built, nearly silent in operation. Strong sound, but tends to blandness with the DAC.</td>
<td>£650</td>
</tr>
<tr>
<td>MICRODIO DUO</td>
<td>CD-ROM based transport. Defines refinement and air, but without sacrificing impact.</td>
<td>£1750</td>
</tr>
</tbody>
</table>

**DIGITAL TO ANALOGUE CONVERTERS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>ODE DIGIT</td>
<td>£355 Based on Philips Bitstream. Excellent value, with no rough edges. Co-axial input for CD only.</td>
<td>£125</td>
</tr>
<tr>
<td>MICROGAMF MADRAC</td>
<td>Philips Bitstream-based. Typical Micromega sound, very musical and refined, lacking the cutting edge of detail.</td>
<td>£399</td>
</tr>
<tr>
<td>MISSION DAC.1</td>
<td>£351/2 DAC based class A, mid-range, capable of decent output. Beautifully detailed.</td>
<td>£410</td>
</tr>
<tr>
<td>ARCAM S BLACK BOX 3</td>
<td>£250 Fine sounding D/A, but not a looker.</td>
<td>£450</td>
</tr>
<tr>
<td>AUDIO ALCHEMY DIGITAL</td>
<td>£150 Tiny Philips Bitstream-based DAC. Very smooth presentation.</td>
<td>£397</td>
</tr>
<tr>
<td>SUGDEN SDAI</td>
<td>£350 Philips Bitstream-based DAC. Very good smooth presentation.</td>
<td>£250</td>
</tr>
<tr>
<td>AUDIOLAB 8000DAC</td>
<td>£150 Arcam's CD Transport. Clean, forward mid-range, capable of portraying real subtleties.</td>
<td>£250</td>
</tr>
<tr>
<td>MERIDIAN 606</td>
<td>£150 New DAC/CD version. Rather laid back, but also easy going and possessed of a very natural sound.</td>
<td>£150</td>
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**TURNABLES**

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<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>SYSTEMDEX I-990</td>
<td>£254 Suspended-chassis turntable, easy to set up. Surprisingly natural sound, if not as detailed as some. Suits Rega M9 and Helium arms.</td>
<td>£190</td>
</tr>
<tr>
<td>NO ARM</td>
<td>₹294 Creek built turntable with much to offer. Similar to the Systemdeks and Regas. Very coherent.</td>
<td>£245</td>
</tr>
<tr>
<td>REGA PLANAR 3</td>
<td>₹256 Built to last. Transparent and lucid, although can sound bass light. Sets the standard to beat.</td>
<td>£245</td>
</tr>
<tr>
<td>THORENS TD 166/WRK</td>
<td>₹220 Zero phase shift, with arrow arm. Good basic deck, but with both sound and performance potential.</td>
<td>£250</td>
</tr>
<tr>
<td>MCHIELI HTYING</td>
<td>₹220 Armless turntable. Consistent Phono stage, with a smooth and musical presentation.</td>
<td>£250</td>
</tr>
<tr>
<td>PINK TRIANGLE</td>
<td>₹210 Superb turntable that gets very close to the Linn LP12. Easy to use but built to last.</td>
<td>£250</td>
</tr>
<tr>
<td>LITTLE RONALD</td>
<td>₹210 Based on Philips Bitstream. Excellent value, with no rough edges. Simply one of the finest CD players on the market.</td>
<td>£250</td>
</tr>
<tr>
<td>ROKSAN RADUS</td>
<td>₹210 Excellent sound quality and overall presentation.</td>
<td>£250</td>
</tr>
<tr>
<td>THORENS TD 300/BC</td>
<td>₹210 Arm-less, good match for Rega RB 30 arm. ARCM.</td>
<td>£250</td>
</tr>
<tr>
<td>CAD CARTRIDGE SINGLE EXPORT</td>
<td>₹210 Arm-less, good match for Rega RB 30 arm. ARCM.</td>
<td>£250</td>
</tr>
<tr>
<td>VOLO VALDI</td>
<td>₹210 Arm-less, good match for Rega RB 30 arm. ARCM.</td>
<td>£250</td>
</tr>
<tr>
<td>ROYAL DECK</td>
<td>₹210 Arm-less, good match for Rega RB 30 arm. ARCM.</td>
<td>£250</td>
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**TONEARMS**

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<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>MARSH DP-6</td>
<td>£355 ‘Unipivot plus’ tonearm. Plays music with a silken and rich quality, Perfect match for the Da Capo cartridge.</td>
<td>£665</td>
</tr>
<tr>
<td>SME SERIES V</td>
<td>₹205 Low output cartridge, with high silver content. Needs step-up transformer.</td>
<td>₹220</td>
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</tbody>
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**CASSETTE DECKS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>GOLDEN RING 1012</td>
<td>₹205 Excellent value. Well balanced performer, rich and full without warmth. Very spacious and clear.</td>
<td>₹450</td>
</tr>
<tr>
<td>ORTOFON M5I</td>
<td>₹250 Four head deck. Superb sound, but lacks the necessary depth on deep bass.</td>
<td>₹300</td>
</tr>
<tr>
<td>ROYAL CARRIUS BLACK</td>
<td>₹350 Dolby B, C, E, F and DD. Excellent value.</td>
<td>₹300</td>
</tr>
<tr>
<td>SHURE V-T</td>
<td>₹350 Standard 3 head deck. Superb value, capable of capturing deep bass.</td>
<td>₹300</td>
</tr>
<tr>
<td>GOLDMASTER 3.5</td>
<td>₹350 Standard 3 head deck. Superb value, capable of capturing deep bass.</td>
<td>₹300</td>
</tr>
<tr>
<td>GOLDMASTER 5.5</td>
<td>₹350 Five head deck. Superb value, capable of capturing deep bass.</td>
<td>₹300</td>
</tr>
<tr>
<td>LYRA LYDIAN 555</td>
<td>₹350 Five head deck. Superb value, capable of capturing deep bass.</td>
<td>₹300</td>
</tr>
<tr>
<td>MALCOM CAPO</td>
<td>₹350 Five head deck. Superb value, capable of capturing deep bass.</td>
<td>₹300</td>
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</tbody>
</table>

**CASSETTE RECORDERS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>TECHNICS RS-5204</td>
<td>£130 Terrific value for the money.</td>
<td>£130</td>
</tr>
<tr>
<td>TECHNICS TS-58X6</td>
<td>£150 Three head deck. Difficult to tune tapes, but pre-recorded tapes reproduce with clarity, excels with premium tapes.</td>
<td>£150</td>
</tr>
<tr>
<td>SONY TC-K150</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>SONY TC-K755</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>JVC TD-V514</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>DENON DRS-810</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>NAKAMICHI CASSETTE DECK 2</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>CASSETTE DECK 1.5</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>CASSETTE DECK 1</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>PROJECT P85000</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>TEAC V8000S</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>ARCAM DELTA 100</td>
<td>£200 Three head deck.</td>
<td>£200</td>
</tr>
<tr>
<td>NAKAMICHI-CJ-7</td>
<td>£200 Three head deck.</td>
<td>£200</td>
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**TUNERS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENON TU-260L</td>
<td>£110 Excellent AM/FM tuner. Easy to operate, good all-rounder with a fine sound.</td>
<td>£110</td>
</tr>
<tr>
<td>NAD 4225</td>
<td>£160 Warm sounding, but detailed budget AM/FM tuner. APF, poor, looks dated.</td>
<td>£160</td>
</tr>
<tr>
<td>ALP TA-150</td>
<td>£320 Superb FM-only tuner. Produces a delightful, three-dimensional sound. A cracker</td>
<td>£320</td>
</tr>
<tr>
<td>YAMAHA TX-950</td>
<td>£270 Silky smooth sound, but very insensitive and needs a good aerial.</td>
<td>£270</td>
</tr>
<tr>
<td>KENWOOD KT-730</td>
<td>£248 Superb FM-only tuner. Produces a delightful, three-dimensional sound. A cracker</td>
<td>£248</td>
</tr>
<tr>
<td>MUSICAL FIDELITY T1 Mk II</td>
<td>£250 Five head deck.</td>
<td>£250</td>
</tr>
<tr>
<td>ARCAM DELTA 80</td>
<td>£250 Dolby ‘S’ deck. Easy to use. Very stable sound, with instrumental textures close to perfect.</td>
<td>£250</td>
</tr>
<tr>
<td>NAKAMICHI NAT-01</td>
<td>£290 Dolby ‘S’ deck. Excellent sound quality, close to the original source. The best Dolby ‘S’ deck around.</td>
<td>£290</td>
</tr>
</tbody>
</table>

**INTEGRATED AMPLIFIERS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAD 3206</td>
<td>£150 Budget classic, although its crown has slipped a bit of late. Typical warm NAD sound.</td>
<td>£150</td>
</tr>
<tr>
<td>HARMAN-KARDON HK-6150</td>
<td>£150 Good sounding starter amplifier. Great dynamic range. Excellent bass.</td>
<td>£150</td>
</tr>
<tr>
<td>DENON PMA-350</td>
<td>£190 Loads of punch for the money. Phono stage lags behind the line inputs.</td>
<td>£190</td>
</tr>
<tr>
<td>PIONEER A300</td>
<td>£180 Slimmed down A-400. Poor phono stage, bit brash, but exciting and glossy.</td>
<td>£180</td>
</tr>
<tr>
<td>SUGDEN AS288</td>
<td>£203 Surprisingly warm and well rounded for the price. Worth seeking out.</td>
<td>£203</td>
</tr>
<tr>
<td>AMPLICA ALPHA 3</td>
<td>£200 Lean and lively, with an astonishing amount of detail. Excellent line stages.</td>
<td>£200</td>
</tr>
</tbody>
</table>
MISSION CYRUS ONE £20 An all-round excellent performer. Equally good on disc or line stages.
CREEK CASA 4140 S £230 Bit soft and rounded, but with a pleasant character. Easy on the ear.
PIONER A-400 £240 The amplifier that shook up the UK hi-fi industry. Very hi-fidelity, but can sound good with high-end equipment.
AURAL EVOLUTION VA-100 £270 Full of tone, although not the best measuring amplifier around.
ION OBELISK 100 £299 Plenty of detail and ambience. Good imagery but not the warmest sound.
MISSION CYRUS 5 £380 Bass is precise with good dynamics and power balanced almost as any of its price rivals.
AUDIO LAB 8000A £450 Very nearly superb and balanced. Good bass, great imagery, but can be sterile.
SOUND PERFORMER £560 Never misses the music with warmth. Tonal really even.
SUONO £570 Hybrid amplifier. Has valve and transistor virtues in a reasonably priced package.
AUDIO INNOVS SERIES 200 £649 Superb sounding design. Look for a little better detail, but very good.
"AURICULAR" More dynamic range...
TUBE TECHNOLOGY UNISYS COPLAND CTA-401 £792 Superbly built valve amplifier. Pace and musical.

Refined 2020.

POWER AMPLIFIERS

NAD 1100 £1199

Krell K-300 £1795

Audio Innovus Series 500 £1499

Audionote OTO £1589

Sony ICF-5W760 £150

Celestion 600 £349

Audioplan Musicable [Various £32]

Audioplan Digitenna £55

EAP £10

Power amplifiers. Slick design, but can lack bass and transparency.

Loudspeakers

Goodmans MAXIM 3 £110 Excellent budget small box. Forward sound, without undue box coloration.
Mission 76ii £169 Not a perfect loudspeaker, but is full of bass and a lot of fun and entertainment for the money.
Mission 780 £180 Not without flaws, but the accent is on the music. Good small design.
B&W 800 Series £205 Very competent and musical. Loads of life and energy.
Furukawa LS52 £229 So far the most correct loudspeaker we have discovered at the price. Sweet and even-natured. A bargain.
Heybrook 105 KEF Mk III £250 Expensive loudspeakers. Loads of lovely, lively bass, but smoothes out eventually.
Tannoy 509 £280 Cheap Double Concentric loudspeaker. In the range and fun, but occasionally a bit unfocused.
NAD 8100 £309 Floor standing loudspeaker with great depth and loud. Terrific sense of tune.
Quad ESL 63 £349 (original) £336 (silver) £350 (British) £339 (low bass). Typical British loudspeaker. Smooth and fast, but can lack mid-range.
EPO £359 'Special' Quad loudspeaker with a superb mid-bass. Great for small amplifiers.
Tri centre COMETE £430 £375 £390 £375 £350 £330 £315 £305 £295 £290 £255 £200 £200 £180 £170 £150 £120 £110 £100 £80 £60 £40 £20 £10

MUSICAL FIDELITY SA-470 £6000 £4000 £3000 £2000 £1000 £400 £300 £200 £100 £60 £50 £40 £30 £20 £10 £8 £6 £5 £4 £3 £2 £1 £0.5 £0.2 £0.1 £0.01

MISCELLANEOUS

Audioplan Digitenna £55 High-tech coaxial cable, for CD to DAC connection. Highly focussed sound.
Audioplan Magicable [Various £50] High-quality cables that represent the finest in electrical cable.
Bette DT-1 £64 Excellent ‘studio quality’ headphones. Deep bass, powerful sound, if a bit splashy at times.
Celestion TLP 600 £65 Digital signal processor for the Celestion 600 series loudspeakers, sounds like a £400 upgrade.
Francisca £80 Bass response, whilst sound-crashtastic to make feel more ‘alive’.
Furukawa FD-11 Cable £85 Coaxial cable, for use between CD and amplifier. Good quality, utilitarian sound. Easy choice. Safe sound.
Kontak £90 Small box, Carmack from Aerocorp. Excellent imaging, transparency and detail. Needs power and careful positioning.
Laserguide £99 £200 £175 £160 £150 £125 £110 £90 £80 £70 £60 £50 £40 £30 £20 £10 £8 £6 £5 £4 £3 £2 £1 £0.5 £0.2 £0.1 £0.01

Many thanks to John Shearn, Phase One Audio, for much of the above.

Mar 91

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Mar 05
Did intelligent pop slip into a coma when XTC stopped making plans for Nigel?

Will burning books see it reawakened? Read on to find the answers . . .

Malcolm Steward

JOAN ARMATRADING
Square The Circle
A&M 395 388-2

It's hard to believe that Joan Armatrading's Glyn Johns-produced eponymous debut album, the one that made her the darling of sensitive hi-fi demonstrators everywhere, was released in 1976. Subsequent albums saw her moving away from the acoustic troubadour image of the first album towards a less spartan, rockier style incorporating elements of reggae, soul and mainstream rock.

Square the Circle is her slickest, most contemporary-sounding release to date and demonstrates an interesting synthesis of her intimate, personal vocal manner with the ephemera of pop music. In plain English that means the ubiquitous "keyboards" get - I think - too much of a look-in at times. I find her voice most effective placed against a simple, uncluttered backdrop. At times the washes of synthetic sound tend to distract from and dilute the power of her singing.

I wasn't especially concerned by the fact that she was singing in front of a backing band or with back-up singers. In fact, former Japan bass player Mick Kam's insistent, pungent bass lines - well to the fore throughout - provide a fascinating counterpoint to Armatrading's distinctive voice. But I'll admit to being prejudiced: in general I hate, loathe and detest synths and I think that Armatrading's is one voice that works most effectively with minimal accompaniment.

Nonetheless, I enjoyed this album, even if it is a little too smooth and easy-going in places. Check out the CD's ninth track 'If Women Ruled The World' to hear Armatrading (and Kam) hitting a persuasive peak. This particular track made me wonder what an album of Armatrading and Kam duets would sound like. If you've ever heard Mary Coughlan's 'Seduced' you'll know what a powerful combination a female voice and bass can be.

MELISSA ETHERIDGE
Never Enough
ISLAND CID 9990

Ignoring the risk of attracting violent letters from outraged feminist readers, I've got to admit that my usual reaction to the fairer sex singing hard-hitting rock songs is to fall about in paroxysms of rib-rupturing laughter, OK Janis Joplin was an exception. An unfair reaction in socio-political terms, maybe, but have you ever heard Bonnie Tyler trying to out-Percy Robert Plant? Can you honestly tell me that you kept a straight face?

Melissa Etheridge, however, manages to sound convincing without, I might add, sacrificing one iota of her femininity. My only qualms about this latest album concern the way she looks now; on previous albums she's looked natural and funky, now she's gone for the peroxide Toyah Wilcox image. It doesn't fit.
Her music, however, continues to grow more powerful with each album. This disc has displaced Brave and Crazy, an extraordinarily good album, as my favourite for introducing friends to her music.

There's a good mix of material here, all intelligent and engaging, even when the subject matter isn't going to win any prizes for profundity. Examples feature the might of the full band or just Etheridge and sparse - one or two - acoustic instrument accompaniment, like 'Place Your Hand' and 'The Letting Go'. Tempos vary as well, from the urgency of rockers like 'Ain't it Heavy' and the industrial grind of '2001' to the gentle lift of 'Place Your Hand' and 'The Letting Go'.

The album's title track has had a fair bit of airplay on MTV but don't take that as an anti-recommendation. I might think that Melissa Etheridge's image is awry but she's no air-head. She writes good songs and performs them with unseemly aplomb and gusto. Pass the smelling salts, Jeeves, this unladylike behaviour's got me all hot and bothered.

**CHRIS DANIELS AND THE KINGS**

**In Your Face**

**PROVOGUE PRD 70342 (CD & MC ONLY) DISTRIBUTED BY PINNACLE**

- I'd no idea who Chris Daniels was until this CD landed on my doormat the other morning. I was in no doubt who had provided its cover artwork, however. Those duck mouths (beaks?) were unmistakably the work of Neon Park, the pen responsible for all those wonderful Little Feat sleeves.

- The press release that accompanied the disc informed me that Daniels hails from Denver, Colorado and that he and The Kings have been touring the States and mainland Europe since the mid-Eighties. They have supported acts like BB King, Jeff Healey, Little Feat, Bruce Hornsby and Bonnie Raitt, who apparently is such a big fan that she lurves to sit in with the band when she can.

- I've got a feeling that the band's horn-section will come across even better live. On disc they sound a little too polished, but I suspect this will change in front of an appreciative audience. They will be touring the UK for the first time in the late summer and early autumn, so if you enjoy the disc, look out for dates where you can catch them live.

This is the kind of music that any red-blooded rock fan's going to feel at home with: a powerful rhythm section, getevers various and a-plenty, and a horn section that kicks. They work their way through R'n'B based material that weaves in and out of Blues, Soul, Metal and all points of the American rock compass, lifting a riff here, a chord progression there, fuelled by an obvious zeal for laying down a groove. As Daniels says in the sleeve notes "To all those who love rock'n' horn band music like Tower of Power and Blood, Sweat and Tears... this record is for you."

Blood, Sweat and Tears, eh? And I thought that nobody else remembered them. Good to know I'm not the only dinosaur on the planet!
SONNY LANDRETH
Outward Bound
ZOO (THROUGH BMG) 72445-11032-2

- Regular readers of this column will know that I'm a sucker for tasty guitarists. I don't even care if they play with lack-lustre bands or try to sing when they really oughta be gagged, if they can manipulate six strings in a fashion that makes me - as a failed plucker - sickeningly envious, I'm happy.

Enter Sonny Landreth, whose band is fine and whose singing voice is passable if undistinguished, a guitarist who has both technical skill and, more importantly, wicked feel. One track from this album, 'Back to Bayou Teche', was all it took to make my eyes turn a noxious shade of green. His playing here isn't techno-flashy, superfast or particularly demanding, it just grooves effortlessly and he drops all the right notes at all the right moments. There's a David Lindley-esque swing to his slide playing on this song. It's not squeaky clean, nor is it swimming in distortion (a sure way of covering up dodgy intonation); instead he strikes just the right balance. Throughout the album his playing is equally measured and understated, whether he's working out on electric, slide, dobro or acoustic.

I was surprised when I reached tracks five and nine and heard John Hiatt's distinctive voice back in the mix. It later transpired that Landreth and his band, under the name of The Goners, had worked with Hiatt on the latter's Slow Turning album and tour. He has also worked with Zydeco and Cajun musicians of the calibre of Clifton Chenier and Beausoleil. With this kind of experience under his belt it would have been hard to produce a duff album as his debut.

If I were in super-critical mode I might say that Outward Bound would benefit from one or two songs with a bit more impact but I'm not complaining. It's satisfying enough to hear a guitarist with Landreth's sensitivity and flair.

DAVE HOLE
Short Fuse Blues
PROVOCURE PRD70162
(LP & MC ALSO)

- If you thought that Australia's only exports were remarkably drinkable Chardonnay, equally horrible lager and emetic soap operas, it's time to reconsider. Dave Hole is Australian and he's none of these: he's a blues guitarist.

Influenced by Elmore James, Albert King and Hendrix, Hole plays a mean slide. USA magazine Guitar Player described him as 'magnificent, staggering, almost beyond belief', and he has been favourably compared - though by whom I know not - to Steve Ray Vaughan. I smell a bit of hype here. I wouldn't argue about Hole's credentials as a fine technician but SRV's playing - and singing - had rather more soul.

The trio come together more effectively on the subsequent track, penned by Hole, 'Night Cat', where their funky approach is more appropriate. They should, however, have left 'Purple Haze' to rest in peace: it's not a song that lends itself to being covered and it would have been better had they resuscitated the ubiquitous 'Little Wing' instead.

Hole and his boys have more success with another cover: Robert Johnson's 'Travelling Riverside Blues', but if we're in superlative shedding gear you should hear Jimmy Page's version before passing comment. Hole really comes into his own playing solo, as on Willie Johnson's 'Dark Was The Night (Cold Was The Ground)'.

As you've gathered, I found Short Fuse Blues to be a mixed bag. I'm sure that's less a reflection upon the artist and more a reaction to the ticker-tape welcome extended to everybody who picks up a guitar and plays the Blues these days. Do we honestly need replacements for players like Hendrix and Stevie Ray Vaughan? I'd sooner hear players with something of their own to say.

THE SUPERSUCKERS
The Songs All Sound The Same
EMPTY RECORDS EFA-11351-25

- People keep telling me that we live in a global village, that the world is - metaphorically - getting smaller. Here's your chance to prove or disprove this theory. I couldn't find any records by The Supersuckers in my local record stores in London so I bought this album in Tower Records when I was in Chicago, earlier this year. If you can't get a copy from your local stockist tell them to order it from the US: after all, are we
in a global village situation or what?

The Supersuckers are part of the Seattle SubPop scene that introduced the ever-shrinking world to bands like Nirvana and Pearl Jam. If the fact that even your grandmother has heard of Kurt Cobain means that you need another new band to restore your credibility, look no further than The Supersuckers. Edward Carlyle Daly III, Daniel Scott Siegel, Ronald Neal Heathman, and Dan 'The Steak' Bolton are so unspeakably hip that they’re not ashamed to cover a Madonna song on this album. Only their version of ‘Bustin’ Up’ really does live up to its title.

If you think that the aforementioned Nirvana and Pearl Jam are pretty noisy then your senses will get severely disturbed by The Supersuckers who make Sonic Youth sound like a school choir. Their version of Bators and Chrome’s ‘What Love is’ (there are three covers on the eleven-track disc, the third being Nazareth’s ‘Razzmanazz’) is a particularly fine example of this. Ever heard a thrash guitar wah-wah lead break? Interesting.

‘A perverse but fascinating element on the album - one among many - is the chainsaw-chord outro to the last track ‘Razzmanazz’, which lasts a sanity-threatening thirty-three minutes and fifty-four seconds by my reckoning. Is it possible for a CD player to get stuck in the groove, I wondered, or was it a sub-code trick? Or did they really extend that outro to over half an hour just when I was ready to kick seven shades out of my CD player the drummer changed pattern and the song stopped. Massive amounts of musicological brownie points will be awarded to anyone who listens to it enough times to tell me if it is non-stop chording or if it’s faked.

RECORD OF THE MONTH

XTC
Nonsuch
VIRGIN CDV 2699

I lost touch with XTC many albums ago despite counting myself as an earnest fan of this quintessentially British, intelligent pop band. I saw them play a particularly exciting set at the Lyceum, probably more than ten years ago, and revelled in their skilful mixing of punk angst, articulacy and lyricism, and musical dexterity. I bought the albums that were then available - and despite enjoying them and playing them regularly throughout subsequent years - I’ve still found few songs that match angular pop classics like ‘This is Pop’, ‘Statue of Liberty’ and ‘Making plans for Nigel’ - I never investigated more recent releases.

Nonsuch is anything by which to judge I’ve made a big mistake. On the evidence of this disc XTC should be accorded the acclaim that has been wrongly and regularly foisted upon a thousand- and-one far less deserving talents.

XTC have virtually everything you could ask for in a pop band. Their off-beat musical sensibility approaches paradigm status and Andy Partridge’s masterly and inventive use of language is probably peerless in contemporary songwriting. His outwardly straightforward music is approachable and effective but is also wryly humorous and delightfully condemnatory.

It seems that during their exile from the limelight XTC have been stockpiling songs. Nonsuch runs to seventeen tracks and there’s not one among them that is redundant or makeweight. Nonetheless, several stand out as particularly distinguished specimens: I’d choose ‘The Smartest Monkeys’ and ‘Then She Appeared’ as personal favourites, partly because of their morphology but also because of their melodic charm. However, if I were asked to select just one song to accompany me to a desert island it would be the track that closes the album, ‘Books are Burning’.

Why? Because it’s one of the loftiest, most poignant songs that has been written in the past decade, or more likely, one of the peaks of creative writing in the history of pop music. Period.

The album has been thoughtfully arranged and recorded but not so well that you can hear former New Hi-Fi Sounds’ editor Neville Farmer singing backing vocals in the final chorus of ‘Books Are Burning’. I’d call that a catastrophic oversight on the producer’s part. (Only kidding, Nev!)

Nonsuch is a landmark album. Do yourself a real favour and buy it immediately.
This month, some curios from the long sighted label, See For Miles, and a Techno album free from techno fear.

Eric Braithwaite

**BE BOP DE LUXE**

Singles A’s and B’s

SEE FOR MILES: SEECD336

- Be Bop de Luxe missed out somehow; seven albums, seven singles between 1974 and 1978 and then total demise. It’s a great pity, because this compilation of the A and B sides is a breath of fresh air after all the sampling and synthesising that’s so ubiquitous now. Bill Nelson, a spectacular guitarist - “Yorkshire’s first guitar hero” says the sleeve note, and why not - deserves the re-exposure. He’s fluent, fluid, and stylistically brilliant. Even better, he came to be backed by a band any one of whom would have been in demand as a session man - whether it was a pop or jazz track that was being laid down. There’s the rub: this band is as together, as inventive, and as improvisational as any jazz quartet and they play real music. Trouble is - no, most of the words are pretty naff. That - in the end - probably explains why they never made it big in the face of competition from people like Bowie. Or even, later, Magazine, who favoured the same kind of style but with a more metronomic beat, less inventiveness - but better words: “There’s a crystal at the heart of every tear/On reflection making her perfection clear.” I ask you. Yet in musical inventiveness they can sometimes match Bowie in musical terms. Probably this is why I prefer the B sides: less hot-house, less trying to match the trend of the time. Even so, the A sides are a constant source of fascination. Forget the words, Be Bop de Luxe had a musical inventiveness that tells you an awful lot of New Wave. The Skids or XTC might not have made it without this band ahead of them. ‘Lights’ for instance - for all its soft-centred vocals - is a must. ‘Futurist Manifesto’ proclaims the birth of New Wave. Up front is that amazing style of Bill Nelson who might just have been too clever for his own good in the Seventies; he can out-Marvin Hank Marvin and take on Hendrix, and never does the band fall behind. The music is the message: ‘Crying to the Sky’ was there ahead of the Alan Parsons Project. For a taste of Be Bop de Luxe’s more relaxed style - less of the pressure to ‘prove themselves’ in the marketplace - listen to the B sides first. It’s an hour of pure musicianship with not a single note of dross. Where have we been going since?

**ULTRAMARINE**

Every Man and Woman is a Star

ROUGH TRADE R2892

- I’ve been known to fulminate against the Dance-Bore sounds and synthetic music that have taken over this last year. Ultramarine’s album, ‘Every Man and Woman is a Star’, changed that. Anyone who reads Wyndham Lewis and then puts out a first EP quoting that weird 1920’s satirist must be OK; their music confirmed it. Underneath the omnipresent dubby beat of their first album is a construction of sexy sonic textures that sneaks in Blues, Latin rhythms, a few strangely twisted House cliches, snatches of rhumba, Chinese flute and even a few bars that Jethro Tull would have been proud of, forming them into an alarmingly clever kaleidoscope of sound. “Accordion meets acid groove”, says the press release, and on ‘Geezer’, so it does, along with owls hooting and night noises. Weird,
or what? But it’s innovative and fun as well.

Consistently, it’s the intros that catch your ear, from the first Arkansas track - through the rest. On ‘Saratoga’ there’s even a bit of scat singing woven in and snatches of jazzy piano intro to catch your attention.

These guys know what a bar-line is and they can beat time without having to plunder a drum machine. Every track is brilliantly put together with real musical craftsmanship, mixing the occasional hypnotic robotic vocals with some neat work on trumpet or harmonica from Phil James, or Charlie May on keyboards.

I’m an occasional Techno fan - when it’s live - but Ultramarine have found themselves a niche that owes nothing to Minimalism, takes on Laurine Anderson - and takes the Mickey out of American angst subtly as well. Here, they’ve come up with a dance album that really swings. And without drudgery. In short, I’m a convert, and so should you be.

Like many another group in the days when people bought singles and EPs, the Mamas and the Papas had a bright but short heyday. They lasted only two years and flourished in the folk-rock hothouse that LA became in the late Sixties. Already there when they arrived were the Byrds, Sonny and Cher and the Turtles. First cut (and first in this collection) was ‘California Dreamin’ - melodic and tinged with melancholy. Along with the Byrds’ ‘Mr Tambourine Man’ it became an international best seller and landed the Mamas and the Papas their first recording contract. It, and ‘Monday Monday’, became anthems.

Among the twenty tracks on this CD, there are all the A and B sides from the prolific period of 1966 before harder sounds from Janis Joplin, The Who and Jimi Hendrix overtook the doe-eyed residents of Haight Ashbury. Apart from their own inimitable songs, it includes their unmistakable revamp of Martha Reeves and the Vandellas ‘Dancing in the Street’, the Shirelles’ ‘One Love’, Martyropoulos emphasised and some emotion tugging minor chords. Look out for the others, too, from the second album, less well-known, but well provided with melodies. It might just be nostalgia, but with all hard-nosed street cred flying about now, this is a perfect and gentler corrective. Call me old-fashioned, I don’t care. It’s a great way to spend an hour. Note-for-the-history-books section: Cass Elliott, whose silky voice made them famous, died in 1973, two years after an unsuccessful group reunion. John Phillips, also a group member and father to the ‘Philips’ part of the current US girl-group Wilson Philips, succumbed to drugs, to emerge rehabilitated in the Eighties.

A reformed Mamas and Papas still tours - but attempts to recapture golden ages, especially a Sixties one, never really work. It’s best to stick with the originals.

Gulliver-in-Liliput cover. The big man tied down by lesser ones? If there is, there’s probably more on that five inches of paper than there is in the songs, but let’s not be too mean. Mike McGear, alias Macca’s bro’, will be familiar to most through that comic lot Scaffold which produced gems like ‘Lily the Pink’ and ‘Thank U Very Much’ and which McGear left in 1973. “We were a verbal Bonzo Dog Band, and they were a musical us,” McGear said later. In 1974, brothers Paul and Mike went into a studio in Manchester and produced this album. Most of the titles are credited to the pair; Macca being then in his Wings period, most of the dozen tracks have a strong Wings-ish sound.

Some of them, alas, are also make-weight and marking time - ‘Rainbow Lady’ or the flowers-and-kaftans ‘The Man Who Found God on the Moon’ which displays some of the blandest and most-un-martyrly coyness of the period. Best are the ones where McGear himself is strongest: 'Sweet Baby' is not an especially strong song, but it’s simply produced, light and charming.

Out of place in the context, and the better for it, is ‘Casket’ - one of the Liverpool Scene’s best, a mordant, sardonic poem by Roger McGough, one of the best of the Liverpool poetic trio of McGough, Patten and Henri. It’s a poem turned effectively folky with the aid of Paddy (Chieftains) Moloney’s pipes. This I would have liked more of - it’s something McGear was obviously more in sympathy with and could feel more seriously about.

In many ways - too many, maybe - this is not an album that was put together to be an alternative to The Scaffold, but an escape from it, and it’s too various to be strong. It didn’t do too well first time round - but despite reservations it deserves a place on the ‘So this is what happened next’ section of the shelf, showing what else Macca was up to.
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Fusion became the best-selling - and critically the most hated! - development in Jazz's brief history. Some classic re-releases provide an opportunity to show that Fusion doesn't suck.

Simon Hopkins

Of all the many, many terms bandied about in discussions about jazz, the one which undoubtedly earns the most derision is Fusion. Which may seem strange, if one stops to consider the inherently hybridized nature of Jazz, (and hence the presence of some kind of musical fusion in even the simplest of the music's forms); but nevertheless the specific marriage of Jazz improvisation to rock rhythms and instrumentation to which the term Fusion got pinned sometime in the early Seventies became paradoxically the best-selling and the critically most hated development in Jazz's brief history.

Perhaps the most surprising thing about this critical dissent is its extent; mutually distrustful groups of fans, avant-gardists, traditionalists, beboppers, West Coasters, were at least united in their contempt for Fusion, and now, twenty years on, it's not unusual to witness a critic swoon over the prospect of, say, one of John Zorn's thrash-metal, hard-bop collages and yet choke on his own laughter at the very mention of the word.

In the long run, a lot of the criticism turned out to be prescient. Far too much Fusion drew on the worst aspects of the music's id, er, fused: psychedelic rock's endless, harmonically dull, guitar solos; a tendency in jazz to tag any sort of structure or composition onto a jam session almost as an afterthought; the very worst sort of white rockers' approximation of funk rhythms; an over-dependency on technical accomplishment (and a corresponding need to show it off) and on and on. HOWEVER . . .

The record that probably kicked this off was Miles Davis' apocalyptic Bitches Brew, and the music made by some of that sessions' alumni (and Lord knows, there were some truly stellar musicians on that date) actually lived up to Fusion's original promise. All the CDs reviewed here (recently re-issued through Sony) represent, in some form or other, the fall-out from the Bitches Brew date, and go some way towards scotching the myth that all fusion sucks.

MAHAVISHNU ORCHESTRA
Birds of Fire
COLUMBIA 468224-2

• The greatest band ever to have graced the planet, or very probably. If it's the done thing to knock Fusion, then the British-born guitarist John McLaughlin (and the band he led throughout the early Seventies, the Mahavishnu Orchestra) has become the chief target for jazz-rockophobics. McLaughlin had already done the rounds, and raised a few eyebrows by the time he formed the orchestra; in the Bitches Brew/In a Silent Way Miles Davis band, he had become the trumpet's substitute Hendrix, churning out massive, distorted, staccato solos against the impressionistic background of Miles' proto-jazz-rock. (Indeed, Miles named the entire side of Brew 'John McLaughlin' - a measure of the esteem in which he held this quiet Englishman.) In his lifetime, drummer Tony Williams had been at the centre of an electric jazz maelstrom, a sort of Coltrane-meets-Cream. But nothing quite prepared the jazz-listening public for the Mahavishnu Orchestra.

Truth is, the term Fusion, in its very broadest sense, could have been invented for Mahavishnu. There was so much stuff in there: hugely difficult odd time signatures and polyrhythms, pan-ethnic melodies (the very beginning of McLaughlin's long and fruitful relationship with Indian music), rapid-fire solo exchanges, beautiful acoustic balladry and, of course, McLaughlin's staggering, virtuosic guitar pyrotechnics. It's easy with hindsight to see these as the elements of the worst kind of pretentious Seventies eclecticism, and the albums' titles don't help much either: The Inner Mounting Flame, Between Nothingness and Eternity and (get this) Visions of the Emerald Beyond.

But the music throughout Birds of Fire (still this writer's favourite, although it's close) burns with such intensity that to be cynical about all the non-musical stuff isn't clever, it's plain dumb. This record seldom gets mentioned as a jazz classic, but the plain fact is it's up there with Coltrane's The Shape of Jazz to Come.

This was actually the band's second album but retained the same line-up as the debut Inner Mounting Flame: McLaughlin, bassist Rick Laird, violinist Jerry Goodman, the phenomenal drummer Billy Cobham - who imbues the most pedantic cross-rhythms with fire - and keyboardist Jan Hammer. His artistic career went downhill at roughly the same speed as the swelling of his bank account - you'd never guess that the man behind the distorted electric piano here went on to write music for Miami Vice, but there's the break.

A great, great band, and their finest moment; also their final studio appearance. They recorded the live Nothingness set shortly afterwards and then split. But, at the risk of sticking my neck out, I'd say this is probably the most essential jazz re-issue of the year.

JOHN MCLAUGHLIN
Electric Guitarist
COLUMBIA 467093-2

• By 1978 John McLaughlin had moved on in the way that would take most musicians several lifetimes (no pun intended). The original Mahavishnu had been augmented with first a string trio and then an entire orchestra conducted by Michael Tilson Thomas (Apocalypse). It was then disbanded by McLaughlin, who went on to form the acoustic Indian-jazz supergroup Shakti, along with violinist L. Shankar.

Electric Guitarist, then, was at once a career summation and a statement of intent, a series of collaborations with musicians with whom he'd worked over the years, kicking off with a Mahavishnu-ish band (featuring Goodman and Cobham), working down through various quartets, a duo, and ending up with a beautiful solo version of 'My Foolish Heart'. It's almost as though McLaughlin's saying "Look, I
can do this and this and this, and now it's time to move on again.” And with the chord-melody solo at the end; he's right back to his roots - the pure Tal Farlow jazz guitar he'd left behind long ago. Which makes this all sound a bit drier than it actually is. In fact, the album contains some of McLaughlin’s sublimest moments on record: a stunning, breakneck tribute to John Coltrane (actually based on the chord changes to the tenorist’s classic ‘Giants Steps’) with Chick Corea, Stanley Clarke and Jack de Johnette; the eloquent ‘Friendship’ with Carlos Clarke and Jack de Johnette; the group’s constant group interplay, and where the Mahavishnu material is highly dramatic, that of early Weather Report is more impressionistic and often very much darker. Up against the spiritual asceticism of Mahavishnu, Weather Report were urban, threatening, and, in the long run, more hip.

The debut line-up of the band was probably never going to have the power of the earlier ones, for all its ambitiousness. Not that the music on Weather Report was a different beast indeed; the group interplay remained, but Zawinul’s writing was asserting itself more and more, with tight song structures and thirtysome years later, having experimented with every major electronic keyboard development from the Fender Rhodes piano to the Moog synthesizer, he was the first jazz keyboardist to use the stupefyingly advanced Synclavier system (which contrib-
utes some of the most memorable compositions in all fusion, and colours everything with rich dark hues. Shorter, who was rapidly developing into the most original of all post-Coltrane tenorists, which he remains to this day - a Shorter solo, with its rhythmically angular, melodically obtuse lines, is recognisable within nano-seconds. Czech bassist Miroslav Vitous proved to be one of European jazz’s most unique voices; Brazilian percussionist Airto Moreira, who was present on so many great sessions in the Seventies; and drummer Alphonse Mouzon, the driving force at the heart of this heady, pan-global gumbo.

This was an inspired line-up, and Weather Report was an inspired debut, if only a taste of the stuff to come. Once again, I’m afraid, an essential re-issue.

WEATHER REPORT
Heavy Report
COLUMBIA 468209-2

Six years later and Weather Report was a different beast indeed; the group interplay remained, but Zawinul’s writing was asserting itself more and more, with tight song structures replacing the tone poems of Weather Report and I Sing the Body Electric. And one of these songs, the snappy up-beat, and irritatingly hummable ‘Birdland’ proved to be a massive worldwide hit, making ‘Heavy Weather’ the most widely known of all the records here.

Trouble is, it’s also the weakest. The band at this stage had become dominated by its young stellar bassist, the late Jaco Pastorius, whom Zawinul still rates as the finest musician to have passed through the group. Any group with Pastorius’ flamboyant, extrovert playing (and personality) as its focus, was probably never going to have the power of the earlier ones, for all its popularity, and despite Shorter’s playing like a dream throughout.

In fact, Zawinul put a new Weather Report line-up together in the early Eighties, with the young drummer Omar Hakim as its star, which, despite its being critically completely overlooked, in many ways returned to the impressionism of the original line-up, but Heavy Weather, the band’s greatest commercial success, is probably their artistic nadir.

In some ways Weather Report have aged better than Mahavishnu, and it’s probably down to the less overtly complex nature of their material. Not that the music on their eponymous 1971 debut was any less ambitious than McLaughlin’s. The band’s concept was largely that of Zawinul, who wrote at least seventy-five per cent of the band’s material throughout their many line-ups and right back to twenty-year career, but in 1971 it was nonetheless a profoundly democratic concept. Each of the eight songs on Weather Report is a miniature tone-poem, partially written, partially group-improvised (Zawinul was fond of saying at the time that ‘We always solo and we never solo’, a typically elliptical reference to the band’s constant group interplay), and where the Mahavishnu material is highly dramatic, that of early Weather Report is more impressionistic and often very much darker. Up against the spiritual asceticism of Mahavishnu, Weather Report were urban, threatening, and, in the long run, more hip.

The debut line-up of the band pretty much set the standard for subsequent ones: Zawinul, always a consummate innovator (he’d been one of the first jazz musicians to use an electric piano, after hearing Ray Charles, and thirty years later, having experimented with every major electronic keyboard development from the Fender Rhodes piano to the Moog synthesizer, he was the first jazz keyboardist to use the stupefyingly advanced Synclavier system) contributes some of the most memorable compositions in all fusion, and colours everything with rich dark hues. Shorter, who was rapidly developing into the most original of all post-Coltrane tenorists, which he remains to this day - a Shorter solo, with its rhythmically angular, melodically obtuse lines, is recognisable within nano-seconds. Czech bassist Miroslav Vitous proved to be one of European jazz’s most unique voices; Brazilian percussionist Airto Moreira, who was present on so many great sessions in the Seventies; and drummer Alphonse Mouzon, the driving force at the heart of this heady, pan-global gumbo.

This was an inspired line-up, and Weather Report was an inspired debut, if only a taste of the stuff to come. Once again, I’m afraid, an essential re-issue.

WEATHER REPORT
Weather Report
COLUMBIA 468212-2

A bunch of other bands emerged from the late Sixties Miles Davis groups, notably the pianist Chick Corea’s Return to Forever and keyboardist Herbie Hancock’s Headhunters, but the group which undoubtedly ranks alongside the Mahavishnu Orchestra is Weather Report, the group formed by ex-pat keyboardist Joseph Zawinul and soprano and tenor saxophonist Wayne Shorter.
Just to show there are no hard feelings about the treatment of our trawler nets, not to mention our lamb and the lorry blockade, this month’s reviews are dominated by French music, from the Seventeenth century to the Twentieth.

We’re even including a little French haute cuisine, courtesy of Keith Floyd. Just one little fly in the proverbial: perhaps the best-known ‘French’ tune among these recordings was written by a German (I’ll leave you to discover which one). There are also two very fine symphonies, both composed in Russia yet worlds apart musically and intellectually. And there’s some uncommon Mozart: not the music so much as the performers.

Peter Herring

EMMANUEL CHABRIER
Impromptu/Dix Pieces Pittorquesques/Bourree Fantasque
Richard McMahon, piano
PIANISSIMO PP10792 (DDD/S1.43)

Launched in May, the Pianissimo label - as you might deduce - is to be devoted to the piano repertoire, which is hardly limiting its scope. As with many Classical labels, it will be offering all-digital recordings on Compact Disc only, but Pianissimo also promises unusual and even otherwise unavailable repertoire, and is looking to introduce young artists to a wider audience. It also matches artists with repertoire which, given some of the ill-judged partnerships between composer and performer that appear, seems a wholly laudable aim. Looking ahead, we are promised two discs of piano duets: Martin Jones and Richard McMahon in Grainger (including the Fantasy on Porgy and Bess and A Lincolnshire Posy) and Arthur Benjamin; and a recital by Claire and Antoinette Cann featuring Brahms, Saint Saens, Tchaikovsky, Debussy, MacDowell and Liszt. Next year will see another disc from the Cann sisters (Ravel, Shostakovich and Poulenc among the composers featured) and solo recitals of Franck, Saint Saens, Scriabin, Kabalevsky, Tchaikovsky, Dohnanyi and - particularly interesting - John McCabe playing his own works for piano.

This Chabrier recital is one of two CDs which hopefully will embark the Pianissimo label on a successful voyage through the vast sea of piano music (the other, equally enterprising, is of piano sonatas by Carl Maria von Weber). Born in the Auvergne district of France in 1841, Emmanuel Chabrier’s composing career was lamentably short. The first eighteen years of his life were spent in the civil service and it was not until 1872 that he wrote anything of any substance, the Impromptu recorded here. Dedicated to the wife of the painter, Edouard Manet (Chabrier was a great friend of the Impressionists and assembled an enviable collection of their works), there is nothing of the beginner about the piece. Rather, it displays a great deal of ingenuity and a notable appreciation of the subtleties of rhythm and harmony.

However, the key event in Chabrier’s development came eight years later, hearing Wagner’s Tristan and Isolde at Bayreuth. In 1881, he published the Dix Pieces, his greatest contribution to the literature of the piano and, musically, a work of exceptional variety and originality. It has its roots in the world of Couperin and Rameau, but is far from mere pastiche, owing more to Chabrier’s own legendary improvisations. Here, Chabrier was able to successfully interweave all manner of moods, from the delicate charm of the Idyll to the cheery vigour of the Danse Villageoise. His most brilliant piano work - in terms of sheer bravura - remains the Bourree Fantasque which concludes Richard McMahon’s programme. The work became so popular it was later orchestrated by the composer’s friend, Felix Mottl.

Beautifully and thoughtfully played by McMahon, this recording is actually ten years old. Engineered by Bob Auger in the Concert Hall of the University of Wales in Cardiff in 1982, its original incarnation was on LP on the Oriana label. With so little of Chabrier’s piano music in the catalogue, let alone as well played and recorded as this, its reappearance is both overdue and welcome.
REINHOLD GLIERE
Symphony No3 in B minor Op42 Ilya Muromets
BBC Philharmonic Orchestra; conductor, Sir Edward Downes
CHANDOS CHAN9041 (DDD/78.08)

This late flowering of Russian romanticism (the work was premiered in 1912) is a modest little symphony — just fourfold woodwind, eight horns, five trumpets and a glittering battery of percussion. But like that, it sounds well — inflated so to say, the little like over-the-top Liszt, if you can imagine such a thing. And the programme music of Liszt was certainly the inspiration, but Gliese’s gift for scoring and for orchestral colour produces a work where there is seldom any hint of excess and where the many fine melodies are allowed to shine through. Here, you feel, the influence of Rimsky-Korsakov made a telling contribution. Like other Russian composers who lived through the Stalin era, Reinhold Gliese produced his quota of tubthumping Socialist realism, but his ballets, The Red Poppy and The Bronze Horseman, evidence a greater talent and this symphony, with its roots in a primeval folklore akin to Wagner’s Niebelungen, is a total triumph.

In the hero figure of Ilya Muramets, we have the Russian equivalent of Achilles, or Odysseus (or even, perhaps, Siegfried). The music is on a suitably epic scale to embrace the thunderous collision between the old powers and the new, the heavenly forces which act as a metaphor for the victory of Holy Russia. The programme, which begins with Ilya Muramets stirred into action after thirty years of motionless inactivity, ends with him again motionless, this time turned to stone after his defeat in the last, great battle. It is worth being familiar with the programme, but a detailed knowledge is unnecessary to appreciate this gloriously uninhibited, full-blooded, but also frequently lyrical and noble music.

The Chandos engineers turn in a splendid sound from the concert hall in New Broadcasting House, Manchester, and the BBC Philharmonic yet again demonstrates what an outstanding orchestra it is. Sir Edward Downes, a conductor I wouldn’t normally associate with this repertoire, directs with a combination of passion, intensity and authority that would not be amiss in St Petersburg or Moscow. A spectacular recording of some quite spectacular music.

MARIN MARAIS
Pieces en Trio - Three Suites/ La Reveuse/Le Badinage
Ensemble Ficzwilliam
VALOS/AUVIDIS V4638 (DDD/65.54)

Neglected, yes; unjustly so? That’s more debatable. Marin Marais was born in Paris in 1656. His uncle, Louis Marais, was a cleric at the church of Saint Germain l’Auxerrois and it was mainly

RECORD OF THE MONTH

“It’s about Stalin and the Stalin years,” was Shostakovich’s description of his Tenth and, arguably, greatest symphony. At least, that was the sentiment he expressed to the writer, Solomon Volkov, whose book ‘Testimony’ - a series of conversations with the composer published after his death in 1975 - remains the subject of much debate.

The musical and historical evidence suggests that this may well have been Shostakovich’s motive for the work. In 1946, his response to the end of the Second World War (or the Great Patriotic War, as it was called in the Soviet Union) was his Ninth Symphony, a work more of joy and relief than a hymn to victory. Within months, along with Prokofiev and Myaskovsky, Shostakovich was singled out for venomous “anti-Soviet” criticism, much of Stalin’s approved cultural apparatchik, Zhdanov. For seven years, Shostakovich wrote no further symphonies. Indeed, he wrote little ‘public’ music at all.

With Stalin’s death in March 1953, it can be safely assumed that Shostakovich at last felt able to express the feelings that had been suppressed for those seven years, and conceivably more. He began work on the Tenth Symphony in the summer of that year and completed it in the October. The first performance was conducted by Yevgeny Mravinsky with the Leningrad Philharmonic Orchestra on December 17, 1953.

As with so much of Shostakovich’s music, the Tenth is far from straightforward. Its finale has the hollow, bogus jollity shot through with black irony characteristic of the Fifth Symphony. The second movement unquestionably suggests a kind of evil mayhem and indiscriminate brutality. It may well be, as some have suggested, a musical portrait of Stalin himself. There is the mounting tension of the first movement, almost unbearable at its searing climax, and the sardonic humour of the third. And, perhaps most telling yet ambiguous of all, there is Shostakovich’s use of the four-note motif derived from his own name: DSCH. It was not the first or last time he was to use this musical device but its relevance in the context of the Tenth remains open to interpretation.

It would be wrong, however, to suggest the Tenth Symphony is impenetrable; it is far from that. Its impact will be felt upon the very first hearing; further playings will enhance that impact and reveal more of the layers of this work, one where you feel every phrase is making a statement, however veiled, however elliptical.

From the pioneering recording by Dmitri Mitropoulos, Shostakovich’s Tenth Symphony has benefited from some superlative interpretations. This new recording by Eliahu Inbal and the Vienna Symphony Orchestra now joins a distinguished list.

DMITRI SHOSTAKOVICH
Symphony No10 in E minor Op93
Vienna Symphony Orchestra; conductor, Eliahu Inbal
DENON C-79474 (DDD/56.18)

Eliahu Inbal has come to Shostakovich after a series of memorable recordings for Denon of Mahler, Bruckner, Berlioz and Ravel and has brought with him the understanding and judgement which characterized so many of those earlier performances. This is an interpretation that builds inexorably and compellingly, and with no small measure of authority. Tension is sustained throughout the long opening movement and there is much fine playing from the VSO’s woodwinds and brass as this uncompromising music unfolds. In the second movement, Inbal controls the explosion of naked aggression, emphasizing the detail without losing the necessary demonic quality. He is even more successful in pointing the bitter, weary humour of the third movement, with its telling shifts from deceptive lightness to ominous darkness. The conclusion is especially effective as the rustic dance becomes something altogether more barbaric. As might be expected from Inbal, the Mahler-like qualities of this score are highlighted, the irony, the fusion of the banal with the tragic, the search for some kind of inner resolution. Shostakovich admired Mahler and the latter would no doubt have appreciated the complex emotions and subtle mockery of the finale.

Recorded in Vienna’s Konzerthaus, Inbal’s illuminating performance benefits from an equally illuminating sound quality. Refined, atmospheric and well-balanced, with the orchestral detail and timbre nicely caught, this is a sonic presentation to match the qualities of the interpretation. There are full marks, too, for the general presentation: the disc is lavishly indexed on the basis of a structural analysis of the symphony by music critic David Fanning, and Yasuhiko Mori’s written interpretation of the music is as cogent as Eliahu Inbal’s musical one.
DARIUS MILHAUD  
Violin Sonata No2 Op40  
MAURICE RAVEL  
Violin Sonata No2 in G Major  
ALBERT ROUSSEL  
Violin Sonata No1 in D minor Op11  
Vaclav Snitil, violin; Josef Hala, piano  
SUPRAPHON 11 0103-2 (DDD/65.55)  

- Two things are immediately striking about this recording: the freshness and vitality of the playing and the presence and finely-chiselled clarity of the recording. The balance is particularly good: in the Ravel, for example, the violin interacts with the delicate figurations on the piano rather than swamping them - a perfect example of how good recording can enhance the appreciation of a composer's intentions. The Ravel is unquestionably the finest piece here, the originality of its ideas and sonorities only leaving the listener wondering why Ravel limited its output of chamber works to just seven. The Czech duo of Snitil and Hala are completely at home in the special idiom of this sonata, with its unmistakable jazz echoes and the result has both finesse and fantasy; many moments are also revelatory.

ROUSSEL'S First Violin Sonata of 1907-8 is less inclined to leap over the classical boundaries but is no less enjoyable for that, while the Milhaud also has its American influences, this time from the south of the continent. Although he was one of the most prolific composers of the Twentieth Century, with some seven hundred works credited to him, Darius Milhaud was by profession a pianist and he studied the violin rather than the piano. Thus, at the time, was under the direction of the composer, Jean-Baptiste Lully. Lully was to be an important influence on Marais' career and three years later, in 1679, he became a musician at the royal court of France. Later, he became the director of the Paris Opera orchestra. His forty-year career also embraced teaching and he made a modest contribution to French music, with numerous vocal and instrumental works and four operas. He died on August 15, 1728.

The three main works recorded here are dance suites - in other words, entertainment music. They have charm, delicacy, elegance and, when demanded, a certain robustness, but, for me, they rarely ascend above the ordinary. But then, this music was never intended for analytical listening. Thoughtful, scrupulous, but too often rather pedestrian playing also means the music doesn't entirely work as background music.

I was much more enchanted by the two solos for theorbo (a form of lute) which punctuate the suites. La Reveuse, which is taken from another suite entitled D'un Gout Etranger (Foreign Taste) is especially haunting and beautifully played by Pascal Monteillet. Overall, though, I would have to conclude on the evidence of this recording that the music of Marin Marais deserves to remain a speciality taste. Unless there are greater riches to explore, the neglect in this case may not be altogether misplaced.

THOUGHTFUL, scrupulous, but too often rather pedestrian playing also means the music doesn't entirely work as background music.

EUGÈNE YSAËS  
The sonata dates from that period. These are three very different, very enjoyable examples of French chamber music, engagingly played and satisfyingly recorded. No more can be asked - or is needed.

WOLFGANG AMADEUS MOZART  
Flute Concerto No1 in G Major K314/Oboe Concerto in C Major K314/Clarinet Concerto in A Major K622  
Philippa Davies, flute; Celia Nicklin, oboe; Angela Malsbury, clarinet; London Mozart Players; conductor, Jane Glover  
ASV CD DCA795 (DDD/74.40)  

- Notice anything special about this recording? It is, I would venture, something of a first: all three soloists are female, and so is the conductor. Regardless of the sex of the participants, however, it is a very generous coupling of three of the popular Mozart wind concertos, including the towering masterpiece of the Clarinet Concerto, Mozart's last completed composition (as far as we can judge - a full autograph score has never come to light). Mozart's love of the clarinet is evident in every bar here; yet his equal dislike of the flute ('an instrument I cannot bear') could never be guessed from the delicious simplicity and charm of the G Major Concerto. The work was written grudgingly it would seem - to a commission from a wealthy Dutch amateur, a Mr De Jean (or De Jong) and he got something of a poor deal, for the second of his concertos was no more than a transcription of the Oboe Concerto K314. De Jean apparently got his revenge by paying Mozart only half the agreed fee.

It is the original form of K314 which is recorded here, as composed for the Italian-born principal oboe of the Archbishop of Salzburg's orchestra. Mozart was just twenty-one when he wrote this delightful work and in a quite different frame of mind from fourteen years later when called upon to write a Clarinet Concerto for the virtuoso, Anton Stadler. Yet the music from his despairing last months radiates from the same cloudless skies and the slow movement of K622 is surely one of the most purely beautiful and disarming pieces of music ever composed.

The performances here are uni-

ASV CD DCA795 (DDD/74.40)
formly fluent and stylish, as is the orchestral playing under the flowing guidance of Jane Glover. Indeed, the soloists exemplify the depth of talent currently enlivening the British musical scene. Philippa Davies is principal flautist with the London Mozart Players and a professor at the Guildhall School of Music. Works have been written for her by Sir Peter Maxwell Davies, Robert Saxton and Jonathan Harvey. Celina Nicklin has been a principal oboe of the National Youth Orchestra, then of the City of Birmingham Symphony Orchestra and of the Academy of St Martin-in-the-Fields. She has been a principal with the LMP since 1983.

Finally, there’s Angela Malsbury whose list of playing commitments leaves me exhausted just reading it: a member of the Albion and Primavera Ensembles; of the De Saran Clarinet Trio and the London Winds, and of the Musicians of the Royal Exchange. Somehow she also finds time to duet with her husband and give master-classes, as well as play with the LMP and teach at the Royal Academy of Music. She has been the recipient of compositions by Paul Patterson, Wilfred Josephs, Gordon Crosse, Derek Bourgeois and Simon Bainbridge. In assessing the achievement of all three on this ASV CD, one can but say, well done ladies. For anyone wanting these three concertos - and not concerned about obtaining authentic instrument versions, this disc strikes me as an ideal choice.

Jacques Offenbach
Gaite parisienne/Les belles américaines/Genevieve de Brabant - galop
Jacques Ibert
Divertissement for small orchestra

There’s something ironic about the fact that the composer of what has almost become a second French national anthem, the Cancan, was born in Germany. Jacob (later Jacques) Offenbach, dubbed by no less than Rossini as the ‘Mozart of the Champs-Elysées’, was originally a virtuoso cellist touring with no less than Liszt and Mendelssohn. After a succession of his stage works were turned down, Offenbach resorted to becoming his own impresario. He leased and renovated a theatre on the Champs-Elysées, was originally a virtuoso cellist, later a theme which later became the basis of many one-act comic musical sketchs in the summer of 1853. In the process, he not only found himself the toast of Paris, but the creator of a new genre - the opera bouffe - which, exported across the Atlantic, became the basis of the Broadway musical.

Opera bouffe was a mixture of catchy tunes and pure burlesque, its irreverence in sharp contrast to the pretensions of grand opera. Beginning with Orpheus in the Underworld, Offenbach enjoyed fifteen glittering years of success before the Franco-Prussian war of 1870 brought a more sombre mood to the French capital. The choise ‘bon bons’ of his music can best be enjoyed in the forty-minute suite deftly assembled by the composer/conductor, Manuel Rosenthal, and entitled Gaite Parisienne. It is the main work here, played with predictable wit and sparkle by the Cincinnati orchestra and vividly recorded. It is augmented by the delightful waltz sequence which Offenbach wrote after a highly-successful concert tour of the United States, Les Belles Americanes, and by the Galop from Genevieve de Brabant, one of the less successful of his opera bouffes, largely because of its rambling libretto. The keen-eared will spot in the Galop a theme which later became the basis of the familiar march tune of the US Marines, thus forging an unlikely marriage with a medieval French - female - saint.

This French frolic from Telarc is rounded off very appropriately with an exhilarating performance of one of the Wittiest pieces of music composed this century, Ibert’s glorious send-up of things musical, the Divertissement of 1930. Replete with quotations of other composers - including a metamorphosis that transforms Mendelssohn’s ‘Wedding March’ into ragtime - and bizarre instruments, the joke extends right to a finale of magnificent, raspberry-blowing vulgarity. All good, clean fun, as they say.

Dinner Classics - The French Album
Various Artists
Sony Classical CD45543 (ADD/68.40)

If you thought that the best ways of repackaging back catalogue had been not just fully explored but exhausted, you have reckoned without the ingenuity of the marketing people at Sony Classical. They have come up with 'music to dine by', with the musical sleevenote replaced by recipes. They tell me the idea has sold very well in the United States, so now it’s our turn. In The French Album, which was supplied as the ‘taster’ for the series (bit of a pun, there), you can listen to music by Debussy, Ravel, Fauré, Delibes, Gounod, Berlioz, Offenbach, Satie and Respighi, who was Italian, but the excerpt from ‘The Birds’ does have French origins And while the likes of the Cleveland, Philadephia, Royal Philharmonic and Philharmonia Orchestras play you can tuck into a menu of vegetable terrine, daube a la Provençale with noodles and rich Lorraine chocolate cake devised by televiser on presenter and bon viveur, Keith Floyd.

Mock not, as the late lamented Francis Howard would say. How often have you engulged over which music to play as background at a dinner party? Now: the problem’s solved - and at mid-price, too. There’s an Italian album (‘Puccini, Mascagni, Verdi, etcetera); a Japanese selection, with the likes of Yo Yo Ma, Jean-Pierre Rampal and Isaac Stern interpreting traditional Japanese themes in arrangements for flute, violin and cello; a ‘romantic collection’; an album of Viennese ‘bon bons’; and, for Sunday brunch, a programme of what we are described as ‘bright Baroque favourites’.

With orchestras of the calibre of those listed above, and conductors such as Eugene Ormandy, George Szell, Andrew Davis and - most appropriately, given the ‘hook’ for the series - Charles Munch, you would expect the performances to be generally good and they are, as is the production, which draws on CBS masters from, I would guess, the Sixties and Seventies.

It’s a fun idea and, frankly, pieces such as Debussy’s Clair de Lune and Girl with the Flaxen Hair; Ravel’s Pavane and Satie’s Gymnopedies have already been ruthlessly exploited in television commercials and theme tunes, I can’t see it matters if they now unashamedly become background music. I trust, though, that the planners of the series are now compiling Chinese, Indian and, one hopes, ‘Roast Beef’ albums. If nothing else, they have to be a dam sight better than the background music played in most restaurants. Bon appetit!
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We're often asked what we think of 'audiophile' recordings; this month, the Music Editor looks at two recent releases. One is from a major company who have combined twenty-bit recording and valves; the second from avowedly audiophile label Reference Recordings.

SONY CLASSICAL GO 20-BIT - AND VALVE

An insight into Sony Classical's recording techniques has wafted our way from across the Pond. Christian Constantinov, Vice President of Audio Operations in New York, has announced that Sony have developed a 20-bit recording process. It allows them, he says, "to extract the fullest amount of sonic information from a classical session - up to sixteen times more data than that generated by conventional 16-bit recording systems." These, say Sony Classical in the States, seldom offer better than 14- or 15-bit resolution by the time the various recording, editing and mastering processes have been gone through.

Sony are not alone, in fact, because Technics provide a twenty-bit recorder for the recording sessions they sponsor in the U.K., but Sony Classical (nee CBS) are one of the major players. Decca engineers have said for a number of years that they believed Classical recording needed twenty-bit resolution at least; Sony have gone a step further by using twenty-bit throughout the CD-mastering process. Recordings are made on a Sony PCM-3304 digital reel-to-reel tape deck using quarter-inch tape at 15 inches per second. Editing is performed on a Sonic Solutions editing system which also has 20-bit resolution. The final conversion to the 16-bit CD standard is performed by ultra high-speed custom-built computers using a process Sony call 'SuperBit Mapping.'

In case all this digitisation turns people off, valves get a look-in on Sony Classical recording sessions! The signal from the microphones is amplified by Jensen or custom-designed valve amplifiers before it passes directly to the analogue-to-digital converters and the digital recorder.

Decca, the doyens of purist recording for many years, have also infiltrated Sony's recording techniques. The Japanese-American company now use a modified 'Decca Tree' which is basically two microphones aligned to cover left and right portions of the stage, with a third placed centrally. If all three are used, Sony say the two-channel stereo mix is produced through a simple high-quality passive mixer, introducing no additional electronic processing.

MUSSORGSKY: Pictures at an Exhibition
STRAVINSKY: Trois Mouvements de PETROUCHKA
TCHAIKOVSKY: DUMKA

Yefim Bronfman, piano
SONY CLASSICAL SK 46481

Following rapidly on from the Press Release came this Sony Classical 20-bit piano recording.

What of the sound? It is certainly impressive. Extremely realistic in tone - a rare achievement in piano recordings, which are notably tricky to bring off - it is clear, clean and well-balanced in sound. In terms of recording quality, it sparkles with clarity, a very wide, appropriate dynamic range and a
notably quiet background.

This new recording is well up in the ranks of the very best, alongside DG's digital (but not 20-bit) Chopin Nocturnes by Barenboim for example. Sony's combination of valve and 20-bit reel-to-reel has produced a splendidly vivid concert grand. It's fairly close-miked, and therefore for some tastes somewhat over-wide, something very much dependent on whether the listener's own preferences are for being ten feet from a piano or twenty. It therefore requires a commensurately high volume for full potential realism, or it will sound rather flat.

Barenboim is a name new to me. I heard Pollini playing the Stravinsky work last year, to considerable applause, and my reference recording is, in fact, his performance on Deutsche Grammophon - an analogue recording. While splendid, this new DG issue is notably thick in texture by comparison. While Barenboim plays with great technical expertise and flair - being wholly admirable in this respect, even stunningly virtuoso - his interpretation leans more to the emphatic rhythms of Stravinsky's The Rite of Spring than the more childlike magic of the fairground that Pollini infuses into his playing. Pollini strikes me as someone who instills his own vivid memories of childhood carousels and fairground barkers into his wonderfully cohesive and vivid performance. Barenboim is more of a spectator than a participant. Both the Mussorgsky and Beckus pieces, performed with equal technical brilliance, come off rather better, the seriously wide dynamic range of the Sony recording aiding the sonorities of Pictures particularly, where Bronfman's muscular but well-defined treatment of the score fits superbly.

As is so often the case, I have mixed feelings on this new recording. In terms of sound, Sony have put it at the top of the demonstration list for piano recordings. It will certainly test the capabilities of a system in performance, though, I would have hoped for more in the way of insight into the scores. A friend who listened to the two Stravinsky recordings with me wouldn't be gainsaid - 20-bit or no (I didn't tell her until afterwards), she insisted on walking off with Pollini. Ah well.

**Arnold Overtures**

Beckus the Dandipratt; The Smoke; A Sussex Overture; The Fair Field; Commonwealth Christmas Overture

London Philharmonic Orchestra, cond. Malcolm Arnold

REFERENCE RECORDINGS RR-48CD

- Last year was Malcolm Arnold's seventieth birthday; after years of neglect, he was offered a celebratory concert in London. By comparison with William Walton, film-music composers both, Arnold hasn't received much recognition. I suppose I'm party to this too; like many others, I tend to dismiss his compositions as enjoyable, bubbly, tuneful - but lightweight.

Among the five pieces here (four of which are premiere recordings), the Commonwealth Christmas Overture is perky but insubstantial. A melange of the pieces: it was a BBC commission in 1957 to celebrate the 25th anniversary of the first royal Christmas broadcast - it has a cheerful pastiche of calypso (is that the word?) Christmas jollity, with a trumpet refrain which bears more than a passing resemblance to God Save the Queen. Jokey, and fun, but not to be taken seriously, or twice; a bit too much of Friday Night is Music Night about it.

The other overtures are rather more serious, though I still feel Arnold is liable to escapism rather than development in his compositions. The Smoke is a brash cityscape and a nocturne together with a burst of jazz as Arnold provis the London streets. This is Soho and Covent Garden - when it was still fruit and veg. - rather than Bliss's tourist tour or Elgar's imperial Edwardian pomp. A glorious Cockney celebration but with some dark, sinister undertones.

The short Sussex Overture is a Scherzo written for the Brighton Philharmonic Society in 1951. It is a kaleidoscope of colour in its developmental section with some glorious brass writing in the coda. Arnold joined the London Philharmonic at 21 as principal trumpet and played with them for seven years before he began composing full-time. It shows.) As conductor, Arnold has such style in his variety of tempi, his subtlety of colour, an amazing grasp of the transition from ppp to ff, which all makes this a stunning performance.

All this suffuses The Fair Field, superficially rather Waltonian - it was dedicated to him. Yet the apparently simple fairground waltz is transformed by unexpected transitions and antitheses into more than a short display of bravura. Under the gloss, below the accessible surface, there is in Arnold more than simply melodic invention. Outwardly, the music is all bright tunes, chiseled out in orchestration with astonishingly sharp, vivid edges. Inwardly, there is the brooding saturnine underpinning - the sort that had Walton writing Con Mallia before a movement. There's evidence of this in The Smoke and in the single piece on this recording which has seen the light of the laser before, Beckus the Dandipratt.

Completed in 1943 and first performed by Eduard van Beinum - a great proponent of new music in those days - and the LPO in 1947, this is an original scherzo. It's an abandoned, but tightly controlled continuum of themes and motifs which are combined, disrupted, interrupted, separated, recombined yet it appears to be the series of melodies that structurally it is not. It's a constantly mobile kaleidoscope, comic, mischievous and startling. Arnold was a great admirer of Sibelius and Beckus hardly seems at first to bear any resemblance to a Sibelius symphony, or even to Finlandia or Karelia. But beneath the brightness there are distinctly darker textures and a disruptiveness that makes this a supremely attractive piece on two levels. Enjoy the tunes, by all means, but also search out the sub-stratum of a darker mind.

Recorded at Watford Town Hall last summer, by 'Prof Keith O Johnson, the recording quality is high. Arnold uses all the dynamic range of an orchestra available to him as a conductor, and all of it on the CD. All the bright, clear orchestral textures he delights in are captured to perfection. This is a demonstration recording - and a supremely enjoyable introduction to Arnold's shorter pieces. Under his baton his old orchestra play with great flair and vivacity. This is one 'audiophile' release where the quality of music, music-making and the recording all come together. Full marks too to the booklet, which is extensive and informative, written by producer Christopher Palmer.
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MAG - AUDIO have produced a brand new two-way full ribbon panel speaker based on the magnetistic principal, but by using new technology the cost has been substantially reduced - without changing the quality which will satisfy the most demanding music lover.

MAG - AUDIO A90 is able to reproduce the finest details which will disappear in a traditional speaker. This is due to the extreme light weight of the membranes which are driven over the whole area by 184 single magnets. The result is unique quality.

MAG - AUDIO A90 is built without compromise, from first class components.

MAG - AUDIO A90 has been placed in the TOP CLASS by the German hi-fi Magazine HI-FI VISION, which also gave it the verdict: “very fast, very understandable and extremely transparent.”

MAG - AUDIO A90 can be delivered in Mahogany, Ash, Pine, Pear tree or Oak natural or stained. Rare woods are available at extra cost.

For further information contact:

MAG - AUDIO UK.
43 Heniker Point, Leytonstone Road, Stratford, London E15 1LG
Tel/Fax: 081-5551222
When you've produced a good re
It's great to get one back.

- Jack English, Stereophile Vol. 14 No. 9, September 1991

We'll remain neutral.
Suffice to say that the subject of the
review, the Response Three, is our
flagship loudspeaker and the culmination
of more than twenty years' design
experience.
As you can see from the picture, a pair
of Threes is a hefty proposition. They
stand almost four feet high on their sonic
plinths and weigh in at a hefty 100 lbs
each. And that's before you start tuning
the bass with sand or lead shot.
They feature a unique blend of critically
positioned drive units fed by an
expensive and sophisticated
crossover network. Available
in a range of beautiful finishes
they work best with high
quality ancillary equipment.
We shall say no more. For
the rest, perhaps we should
just let Mr. English have the
stage:

"Bass. The low end of the
Threes (once they are prop-
erly loaded with sand) is
extended, controlled and
powerful. I never expected
this quantity and quality of
bass out of a two-way
speaker . . . . every note is
clear, rich and precise.
Subtle gradations in volume are recre-
ated with aplomb. Nuances, such as
fingering and plucking techniques, are
admirably real. On more complex
material . . . . the double basses
are dynamic, clear and powerful.
On powerhouse rock recording
. . . . the bass is startlingly visceral,
the dance beat unavoidable. In short,
the character of bass in the recording is
exactly what you'll get."
The bass/midrange drive units are two
6½" polypropylene models built to ProAc
specifications. With the tweeter they
are positioned in a mirror image offset
configuration on the front baffles. The
review continues . . . .

"Midrange. Full, rich, lush, musical,
involving - in short, lifelike. The
midrange suffers not a whit from
the bass load on these smallish,
doubled-up drivers. The unique sonic
signature of every instrument, a
result of its own unique mixture of
fundamentals and overtones, is sim-
ply right (listen to the naturalness of
the oboe, the blat of the brass, the
plucked strings from The Sorcerer's
Apprentice). Or try the richness of
voice - the mix of chest and throat,
the amount of nasality, are spot on.
There's nary a trace of any textural
coloration, and never a barrier
between you and the performers.
The crossover point doesn't seem to
exist. No peaks. No dips. No attenu-
Nothing but the music."
The tweeter is a 1" soft dome with a
special coating, once again manufac-
tured exclusively for ProAc. It seems to
meet with approval . . . .

"Treble. ProAc has always impressed
me with upper-end performance; the
Three is no exception. The top is
extended, lightning-fast, and extreme-
ly clean. Triangles, a devastating task
for most speakers, float effortlessly
within the sonic fabric of the music
(again, listen to Dukas's playful tone
poem). Upper harmonics abound, and
there's air aplenty. No, the Threes are
neither peaked nor exaggerated in the
highs, neither bright nor hard. They're
fast and real. If the source
has a rough top end, you'll
have to live with it. The
Threes will reveal all and
hide nothing."

Mr. English is equally enthu-
siastic on aspects of Sound-
staging and Imaging, Inner
Detail and Dynamics. But his
summary says it all:

"The ProAc Response
Threes are marvellous in
every regard, and merit
audition with speakers at
any price. They are without
question, the most satis-
fying audio component
I've auditioned in years.
Without doubt the ProAc Response
Threes are Stuart Tyler's crowning
achievement. They are outstanding in
every aspect of sonic performance
usually discussed. More important
they are unequivocally faithful to the
music. Go hear them now!"

We couldn't have said it better
ourselves.
For a copy of the full review and dealer
information, contact us at the address
below.

ProAc
Perfectly Natural

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