

# Hi-Fi WORLD

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JUNE 1993 £2.00

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We test the astonishing  
K.A.L. 211

**DIY SUPPLEMENT No. 3**  
banded to this issue

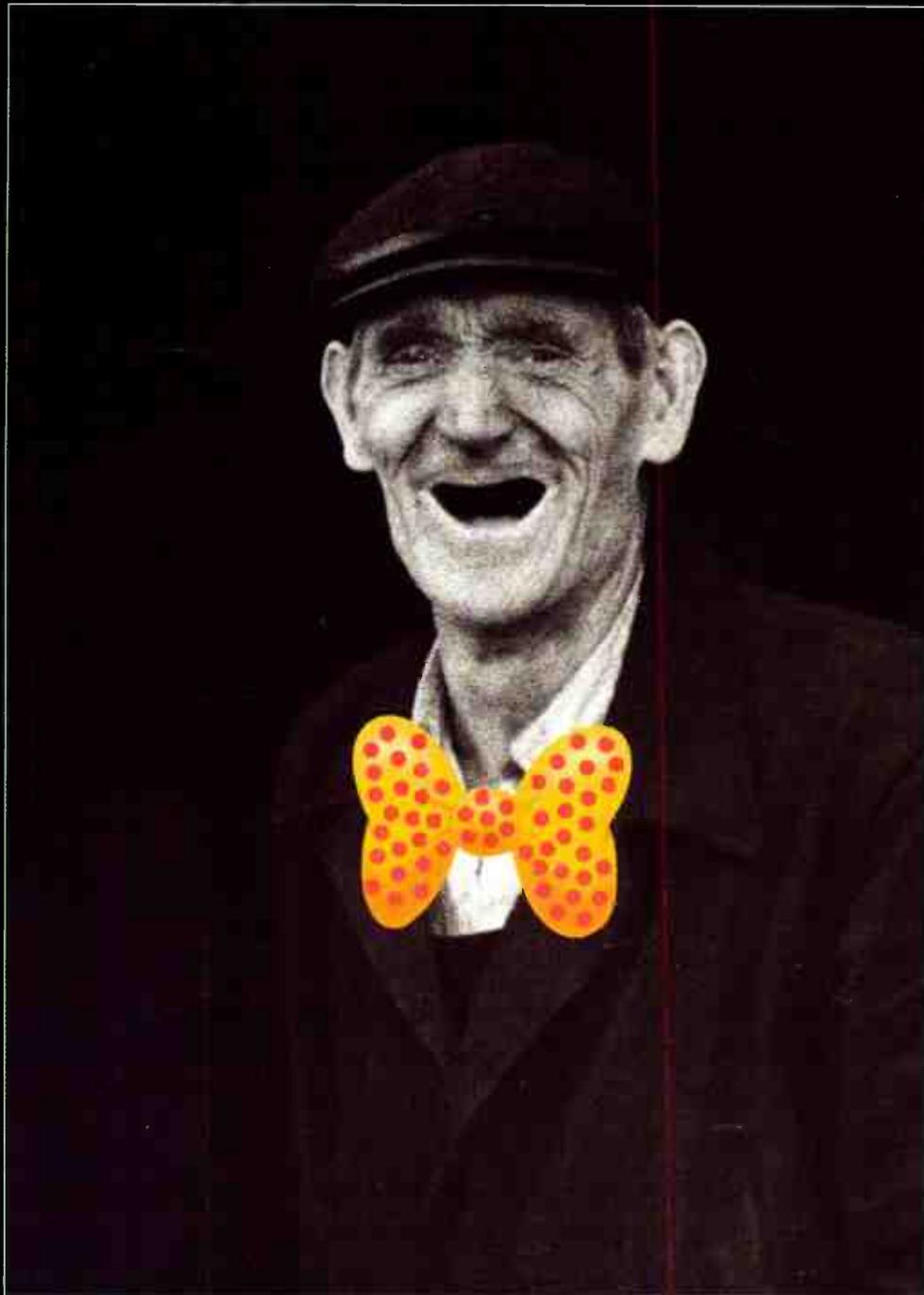
**SIX AUDIO-VISUAL  
surround amplifiers**

**MERIDIAN 206 $\Delta\Sigma$  CD Player**

**COMPETITION** Win a pair of HEYBROOK SEXTET  
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World Radio History





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Lintore Audio

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Lintore Audio

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556 Westwood Rd, Handforth, Cheshire Tel: 0625 549277

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Sound with Style

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The Sound Organisation

28 Giggles, York Tel: 0904 627108

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Lyric Hi-Fi

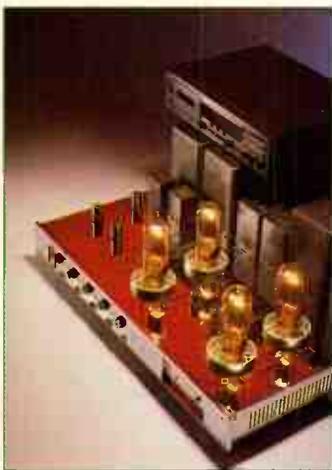
84 Briggs St, Portadown Co. Armagh Tel: 0762 358029

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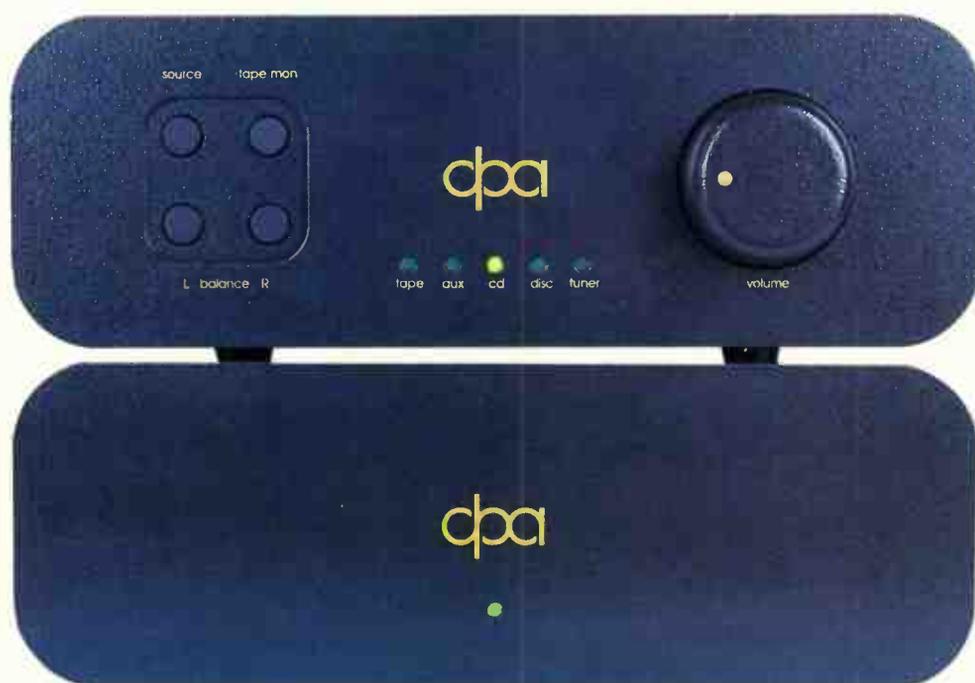
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and  
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The truth,  
the whole truth,  
and nothing but the truth . . .



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

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

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dpa

DPA Digital Ltd., Unit 7, Willowbrook Lab Units, Crickhowell Rd., St. Mellons, Cardiff CF3 0E1 Tel (0222) 795621 Fax (0222) 794267

World Radio History

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## MUSIC

The most important component in any system!

ROCK RECORD OF THE MONTH

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## DIY SUPPLEMENT

This month's DIY Supplement is bigger and better than ever before, and it's still FREE.

Articles include:

Part 1 of a two part kit loudspeaker design offering superb imaging and clarity for a budget price.

A kit design for a line level valve pre-amp to complement the kit valve power amplifier featured in April's supplement.

We modify the excellent QED Digit for use with two external Positron power supplies, one for the digital and one for the analogue stage. The results are spectacular.

Putting the LEAP loudspeaker design package through its paces; can it help the DIY enthusiast to build the ultimate loudspeaker?

Audiokits' DIY MM and MC transistor phono stage could be a cheap way to hear the black stuff. We build and then assess its capabilities.

And much, much more!



Hi-Fi World produces the majority of reviews in-house, using our own lab facilities and listening rooms.

## COMPETITION

This month's prize is the acclaimed **Heybrook Sextets**, the intricate imagers that can really fill your listening room with endless pleasure. Worth £1050 they will be free to the lucky winner of our competition! 58



- **Alderley Edge** Cheshire Aston Audio 4 West Street SK9 7ES Tel 0625 582704
- **Amersham** Bucks Dejac Hi-Fi 21 The Broadway HP7 0HL Tel 0494 431290
- **Belfast** N Ireland Lyric Hi-Fi 163 Stranmillis Road BT9 5AJ Tel 0232 381296
- **Birmingham** Five Ways High Fidelity 12 Islington Row Edgbaston B15 1LD Tel 021 455 0667
- **Birmingham** Griffin Audio 94 Bristol Street B5 7AH Tel 021 692 1359
- **Bishops Stortford** Herts The Audio File 27A & 40 Hockerhill Street CM23 2DW Tel 0279 5066576
- **Brentwood** Essex Brentwood Music Centre 2 Ingrave Road CM15 8AT Tel 0277 221210
- **Bury St Edmunds** Suffolk Bury Audio 47 Churchgate Street IP33 1RG Tel 0284 724337
- **Chichester** Sussex Chichester High Fidelity 7 St Pancras PO19 1SJ Tel 0243 776402
- **Christchurch** Dorset H.A.T.V. 131 Barrack Road BH23 2AR Tel 0202 473901
- **Croydon** Surrey Spalding Electrical Ltd 352/354 Lower Addiscombe Road CR0 7AF Tel 081 654 1231
- **Edgware** Middx Musical Images Ltd 173 Station Road HA8 7JX Tel 081 952 5535
- **Exeter** Devon Howards (Exeter) Ltd 90/91 Sidwell Street Sidwell Street Roundabout EX4 6PH Tel 0392 58518
- **Grimsby** Humberside Manders Hi-Fi Ltd 2/4 Edward Street DN32 9HJ Tel 0472 351391
- **Guildford** Surrey PJ Hi-Fi 3 Bridge Street GU1 4RY Tel 0483 504801
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- **Hounslow** Middx Musical Images Ltd 45 High Street TW3 1RH Tel 081 569 5802
- **Huddersfield** W Yorks Huddersfield Hi-Fi Centre, 1/4 Cross Church Street HD1 2PT Tel 0484 544668
- **Ipswich** Suffolk Eastern Audio 41 Bramford Road IP1 2PR Tel 0473 217217
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- **London N7** Bartletts Hi-Fi 175/177 Holloway Road N7 8LX Tel 071 607 2296 **NB** The Studio 133 Tottenham Lane N8 9BJ Tel 081 340 7775 **NW6** Studio 99 Ltd 79/81 Fairfax Road Swiss Cottage NW6 4DY Tel 071 624 8855 **W1** KJ Leisuresound 26 New Cavendish Street W1M 7LH Tel 071 486 8263 **W1** Hi-Fi Experience plc 227 Tottenham Court Road W1P 0HS Tel 071 580 3535 **WC2** Covent Garden Records 84 Charing Cross Road WC2H 0JA Tel 071 379 7635
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- **Nottingham** Notts John Kirk 70 Chilwell Street Beeston NG9 1FQ Tel 0602 252986
- **Oxford** Oxfordshire Horns 6 South Parade Summertown OX2 7JR Tel 0865 511241
- **Oxford** Oxfordshire Westwood & Mason (Oxford) Ltd 46 George Street OX1 2AN Tel 0865 247783
- **Penrith** Cumbria Lakeland Home Music Fair Place Watermillock CA11 0LR Tel 0768 486235
- **Portsmouth** Hants Jeffries Hi-Fi 29 London Road PO2 0BH Tel 0705 663604
- **Preston** Lancs Norman Audio 131 Friargate PR1 2EE Tel 0772 53057
- **Reading** Berks Reading Hi-Fi Centre Ltd., 4 Queens Walk, Broad Street Mall, RG1 7QF Tel 0734 585463
- **Sevenoaks** Kent Sevenoaks Hi-Fi Centre 111 London Road TN13 1BA Tel 0732 459556
- **Somertown** Somerset Watts Radio 1 West Street TA11 7PS Tel 0458 72440
- **Tamworth** Staffs E & NF French 52 Dordon Road, Dordon Tamworth B78 1QN Tel 0827 892252
- **East Twickenham** Middx Riverside Hi-Fi 422 Richmond Road TW1 2EB Tel 081 892 7613
- **Rugby** Warwickshire Sounds Expensive 12 Regent Street CV21 2QF Tel 0788 540772
- **Sheffield** S Yorks Sound with Style 284 Glossop Road S10 2HS Tel 0742 737893
- **Worthing** Sussex Bowers & Wilkins Ltd 1 Beckett Building Littlehampton Road BN13 1QA Tel 0903 64141
- **York** Yorks Vickers Hi-Fi 24 Gillygate YO3 7EQ Tel 0904 629659





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Telephone 0480 52561  
Fax 0480 413403

QUAD

## STUDIO 7 LIVE ON AIR

Rogers have announced the launch of their new Studio 7 loudspeaker, which is a direct descendant of the Studio 1a. This two-way, reflex-loaded 'speaker boasts two new drive units, a hard wired cross-over and full bi-wiring capability. Available in several finishes, it retails at £879.95 and Rogers hope it will be a welcomed successor to the Studio 1a - both at home and abroad.

Swisstone Electronics Ltd,  
310 Commonsides East,  
Mitcham, Surrey, CR4  
1HX. Tel: (081) 640 2172.



trade winds

trade winds

# trade winds

**Hi-Fi World brings you all the latest news from the hi-fi industry**

trade winds

winds



## FURTHER REFERENCE TO AV

KEF have launched two reference loudspeakers that are aimed for home theatre use. They are fully magnetically shielded and are ideally for use as centre-channel monitors. Available as single units, the Model 100 costs £349 and the Model 90, £249. They are fully compatible with other KEF Reference Series loudspeakers and use Uni-Q drivers that are reflex loaded.

KEF Audio (UK) Ltd, Maidstone, Kent, ME15 6QP. Tel: (0622) 672261.

## ITALIAN OPERATICS

Famed opera singers have now been honoured by importer U.K. Distribution. They are bringing in a range of Italian loudspeakers which use British manufactured drive units. The three models in the range are the Callas at £750, the SuperPavarotti at £875 and the Caruso at £1850. Almost the entire range is manufactured from solid wood; MDF is only used for the Caruso's veneered baffles. The importers claim that this range has sound and build quality worthy of their namesakes!

U.K. Distribution, 23 Richings Way, Iver, Bucks. Tel: (0753) 652669



**POWERFUL CONNECTIONS**

A new pre and power amplifier has just been launched by DPA Digital. The 2005 line level pre-amplifier has been designed for optimum performance with digital sources. It features electronic switching and a Compound Class A output circuit.

The 2005 stereo power amplifier claims to produce sixty watts into eight ohms but it can be easily converted to a monoblock with 200 watts output. The power amplifier employs the in-house designed DH-OA32 thick film hybrid op-amp, which consists of conductors and resistors in a ceramic base with the semi-conductors silver soldered onto the connections. The pre-amp will retail at £495 and the power amplifier at £750.

There are also additions to DPA's range of interconnects, speaker cable and mains cable. In particular, White Slink is a budget interconnect that follows in the wake of Black Slink. One metre terminated lengths are £69.65, or as unterminated cable £12.50 per metre.

DPA Digital Ltd, Unit 7, Willowbrook Technical Units, Crickhowell Road, St Mellons, Cardiff, CF3 0EI. Tel: (0222) 794267.

**REFINEMENT BEFORE FEATURES**

Kenwood have launched a range of five integrated budget CD players that boast a refined sound. Kenwood have steered clear of adding yet more features to their range, instead they have concentrated on improving the sound quality. The range opens with the DP-2050 at £159.95 and is topped by the DP-7050 at £349.95.

Trio-Kenwood (UK) Ltd, Kenwood House, Dwight Road, Watford, Herts, WD1 8EB. Tel: (0923) 816444.

**REPLACEMENT FOR DCC AND MD ANNOUNCED IN RUSSIA**

Details have emerged that a Russian Development program has managed to place one Gigabyte of information on a device the size of a credit card.

These reports lack certain continuity and may just be an elaborate hoax but beware, the next generation of recordable music may fit in your wallet!

**CALLING THE TUNE**

Meridian have announced the launch of an FM tuner, the Model 604, that has a digital output, allowing it to be interfaced with digital speaker systems such as the D600 or D6000. Meridian claim that they have developed this tuner in response to demands from dealers and owners of Meridian 600 series components and it will retail as a limited production item for £1350. Meridian Audio Limited, 14 Clifton Road, Huntingdon, Cambridgeshire, PE18 7EJ. Tel: (0480) 52144.

**IN BRIEF****TDL MOVING FORWARD**

TDL Electronics have just announced their move to new, fully modernised premises. The new site has not only allowed administration and manufacture to be centralised, but it also boasts a new anechoic chamber. TDL aim to exploit their new facilities by extending their model range and increasing their market awareness.

TDL Electronics Ltd, Unit 2 Pilot Trading Estate, High Wycombe, Bucks, HP12 3AB. Tel: (0494) 441191.

**LARGER LORICRAFT**

Terry O'Sullivan of Loricraft Audio, specialist in Garrard turntable restoration, has just announced the completion of a new workshop. Improved working conditions, machines, tools and test equipment will allow him to improve his service, he told us. Terry is a long term Garrard enthusiast and expert, able to service and repair 301s and 401s, as well as supply craftsman made plinths in solid oak or mahogany, fit arms and even re-manufacture spares.

Loricraft Audio, 4 Big Lane, Goose Green, Lambourn, Berks. RG16 7XQ. Tel: (0488) 72267.

**PINK'S BUDGET**

Pink Triangle are investigating the possibility of producing a Digital-to-Analogue Converter that will retail for around £300. Although Pink have not confirmed that they will pursue this project, it is certainly still under consideration.

**WEA PUT S IN PLACE OF B**

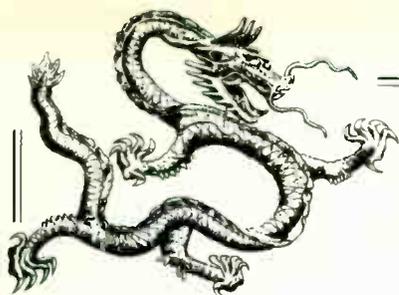
WEA announced that they will be incorporating Dolby S-type noise reduction on all new analogue cassette releases in the U.S. This system will gradually replace B-type noise reduction on Warner Bros, Atlantic and Elektra label cassette recordings.

**LEXICON BROUGHT BY HARMAN**

Lexicon, the Massachusetts based manufacturer of professional audio and high-end consumer products, has become part of the Harman International group of companies. The president of Lexicon feels that this will allow an increase of market presence and result in better product development capabilities.

**CD KEEPS GROWING IN THE U.S.**

The Recording Industry Association of America (RIAA) has stated in its 1992 year-end report that every configuration, with the exception of LP, has experienced an increase in unit sales and in revenue. In particular CD shipments increased 22.3% over 1991 figures to 407.5 million units.



# Golden Dragon

Precision Audio Tubes

## RETAIL PRICE LIST

Golden Dragon Pre-Amplifier Tubes	Singles
*6A08/ECC85	£6.50
12AT71/E81CC/ECC81	£6.50
12AU6A/E82CC/ECC82	£6.50
12AX7A/E83CC/ECC83	£6.50
6DJ8/E88CC/ECC88	£10.95
6SL7GT/ECC35	£7.50
6SN7GT/ECC33	£8.50

## Golden Dragon Triodes

	Singles	Pairs	Quads
2A3 4PIN	£22.50	£47.50	£95.00
2A3 OCTA1	£22.50	£47.50	£95.00
211	£28.50	£59.00	£118.00
*300B	£69.00	£140.00	£280.00
811A	£11.50	£25.00	£50.00
845	£36.50	£75.00	£150.00
805	£36.50	£75.00	£150.00

## Golden Dragon Power Tubes

	Pairs	Quads	Octets
EL34/6CA7	£18.50	£37.50	£74.00
*EL34S/CA7S	£25.00	£50.00	£100.00
EL84/6BQ5	£8.50	£17.00	£34.00
E841/7189a	£12.50	£25.00	£50.00
KT66	£25.00	£50.00	£100.00
KT88	£49.50	£99.00	£198.00
*KT88 SUPER	£59.00	£118.00	£236.00
6L6GC	£18.50	£37.00	£74.00
6550A	£39.50	£79.00	£158.00
50CA10	£75.00	£150.00	£300.00
6L6WGB	£25.00	£50.00	£100.00
807	£25.00	£50.00	£100.00

## Special Quality Golden Dragon Pre-Amplifier Tubes

	Singles
*E81CC-01 Gold Pins	£9.50
E82CC-01 Gold Pins	£9.50
*E83CC-01 Gold Pins	£9.50
*E88CC-01 Gold Pins	£14.50

**Please enquire of any tube types not listed. We have an inventory of over 2,500 different types in stock.**

\*Denotes New Design for New Type

## Golden Dragon Select Tubes

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5U4G	£8.50
85A2	£6.50
ECL82	£4.50
ECL88	£4.50
EL509	£7.50
PL509	£7.50
12E1	£25.00
13E1	£125.00
310A	£60.00
572B	£45.00
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**A selection from our stock of over 2,500 different audio quality valves. Please enquire for items not listed**

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ECH81	MULLARD	3.50	PL504	MAZDA	2.50	6X4	EONEX	2.50
ECL82	TEONEX	3.50	PL509	MAZDA	5.50	12AT6	BRIMAR	2.50
ECL86	TEONEX	3.50	PL519	THORN	5.95	12AV6	RCA	2.50
EF86	TEONEX	4.50	PY32	MULLARD	2.50	12BA6	WESTINGHOUSE	3.50
EF804S	TELEFUNKEN	25.00	TT100	GEC	65.00	12J5GT	RCA	3.95
EL32	MULLARD	4.50	U19	GEC	8.50	12E1	RCA	3.95
EL85	MULLARD	4.50	UCC85	MULLARD	3.50	12E1	STC	15.00
EL86	MULLARD	4.50	UU5	MAZDA	5.50	13E1	STC	140.00
EL504	TEONEX	3.50	UU6	MAZDA	6.50	13D3	BRIMAR	6.50
EL509	TEONEX	5.50	2X2A	RCA	5.00	85A2	MULLARD	6.50
EL519	TEONEX	5.50	3A/167M	ITT	10.00	1625	RCA	6.50
EM84	TEONEX	3.50	5Y3WGTA	SYLVANIA	4.50	5687WA	RCA	6.50
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## TRADE SHOWS



### TECHNICS

Along with updates in styling, Technics have also sought to improve their construction methods and enhance their component hi-fi products. A comprehensive range of CD players, RDS tuners, amplifiers and cassette decks have been launched but interestingly, Technics have not yet embraced Dolby S cassette deck technology, but are instead concentrating on DCC.

To gain a larger slice of the amplifier market, they have turned to the idea of Anglo-Japanese collaboration to come up with several new innovations. One improvement is the use of 'R Core' transformers which boast good power output but lower flux leakage - Technics claim that this reduces hum, increases efficiency and allows rationalized internal circuit layout.

The 'next generation' of mobile sound also attracted a great deal of attention: namely the RQ-DP7 portable DCC player. This is one of the first mobile DCC units to be produced and will appear under the Panasonic 'sister brand'. Although price is not finalised it will be around £400 and aims to hit the shops in September!

Panasonic Consumer Electronics, Willoughby Road, Bracknell, Berks RG12 4PF. Tel: (0344) 862444

## SPRING SHOWS

The National Vintage Communications Fair is scheduled for Sunday 16th May at the Pavilions Hall of the NEC, Birmingham. Opening times are between 10.30am and 5pm with admission costing £3, but free for children under fourteen. Over two hundred specialist exhibitors are attending and organiser Jonathan Hill is looking forward to a very positive response from collectors and enthusiasts from all over the country. For more information contact:

Jonathan Hill, 2-4 Brook Street, Bampton, Devon, EX16 9LY. Tel: (0398) 331532.



### JVC

The Victor Company of Japan has not yet moved into either the MiniDisc or DCC camp but a spokesman said that both formats would be backed. Although Matsushita, Japan's largest electronics company and owner of the brand names Panasonic and Technics, has a majority shareholding in JVC, the company remains totally autonomous. This allows them to pursue their own product development policy.

A wide range of single and double cassette decks are available but Dolby S is not yet fitted to any decks. Budget model CD players, and in particular the XL-V164BK at £139.99 have been upgraded and two DAT players are available. JVC also offer a comprehensive range of systems, many with AV capability. An extensive range of video recorders and cameras complete JVC's new ranges.

JVC, JVC House, 12 Prestley Way, Eldonwall Trading Estate, Staples Corner, London NW2 7BA.

Tel: (081) 450 3282



### SONY

Not unsurprisingly, the extended range of MiniDisc players took centre stage at the show. However, Sony's extensive new range of audiophile components also look very promising. Sony have taken a decision to produce products designed exclusively for the U.K. market.

Every unit marked 'U.K. Sound' is not necessarily designed for the U.K. from the 'blank paper' stage. A Sony spokesman stressed that an exchange of ideas with the designers was working very well and he was glad that this co-operation allowed advice suggested by U.K. sources to be implemented in the design process.

The 'U.K. Sound' range includes several Dolby S and conventional cassette decks, RDS tuners, loudspeakers, amplifiers with improved circuit path designs and a DAT machine. Sony have also launched a comprehensive range of systems and the MiniDisc range is enhanced by several new products, including non-mobile home units.

Sony Consumer Products, South Street, Staines, Middx. TW18 4PF. Tel: (0784) 467000



*... Distortion and overload margins are also taken from the company textbook ... drawing out Marty Paich's double bass as clearly and cleanly as the kettle drum ... an extremely powerful, no-nonsense amp that would seem hard to beat.\**

SONY TA-F440E AMPLIFIER.



Sony Amplifiers.



**SONY**

Why compromise?

\*Reprinted from Hi-Fi Choice March 1992. Sony is a registered trademark of the Sony Corporation.



*... Full complementary DAC operation with lower distortion and lower noise ... As a result the reedy quality of sax strode confidently from the speakers ... Sony has placed the player well inside Recommended territory.\**

SONY CDP797 CD PLAYER



Sony CD Players.



**SONY**

Why compromise?



# World



## SEEING THE LIGHT

I heard the DPA front-end at the Bristol Show in the Klipsch room and for me it was the best sound at the Show.

As I am the proud owner of a pair of Klipschorns I am keeping my fingers crossed about your competition - I suppose there's always a first time to win something.

The reason I am really writing this letter is to say how much I look forward to your magazine every month. I also have a Garrard 301 and Leak amps, so you are way out in front of the others as far as I'm concerned.

Finally, because of your review of the Silver Night 300B I am about to place an order - I also heard them at the Show, but it was your magazine that brought them to my notice and I will tell David Chessell so. He has kindly offered to bring me a pair for a demonstration - what service.

**Terry Mason,  
Christchurch,  
Dorset.**

I suspect that the 300Bs may work extremely well with the Klipschorns, on the principle that valve designs and horns often go together well. Also having been - albeit briefly - in the same room at Bristol it

occurred to me that there was a good prospective partnership here. However, a home trial with designs of both kinds is essential, and it is good to hear that David is providing one. It's also a relief to hear that my reviews are occasionally trusted but I am glad to see you listened at the Show with your own ears too - something which I cannot stress too strongly all readers should do. Even the most infallible of us (!) assume our reviews are meant to be taken as a guide rather than gospel. **EB**

## AUDIOPHILE VINYL!

I admit to only really discovering your magazine this month and compliment it on its balanced reporting of unfairly forgotten vinyl.

I, like 100,000 other people in the UK, own an LP12. If this truly great audiophile format is to survive we must satisfy two criteria. First and foremost, if the decline of record sales is to be halted, there needs to be a co-ordinated campaign via general public awareness to get vinyl back in the chain stores. Secondly, we need more vinyl system reviews to match the interest still shown. What would also especially help would be

more cross-referencing with CD systems of equal value so the hobbyist can fairly judge on overall sound quality and best value for money.

Hopefully your magazine will continue to support vinyl and demonstrate by true independent reporting that it deserves more recognition for being the best.

Finally I would like to mention two pieces of good news:

EMI will hopefully be introducing audiophile quality LPs from the Autumn of this year, from their factory in Hayes, Middlesex.

If you are having difficulty in finding records or want to help campaign and save LPs I can recommend a voluntary organisation called Analogue Addicts whose address is 22 High St, Keighley, W. Yorks.  
**Richard Westcott,  
Milton Keynes.**

David Hughes, Director of Strategic Marketing at EMI, said that while they had no intention of abandoning vinyl, nor closing their present plant, they had no plans for 'audiophile releases'.

## Letter of

I felt I had to drop a line to say how pleased I am that Hi-Fi World is apparently succeeding where others have failed to hold readers' interest (except for a dedicated minority).

Several years ago I gave up buying magazines after a period dating back to 1956 - Hi-Fi News No 1 - and decided to buy records instead. In my case the magazines became difficult to find (except for W. H. Smith); I was told by the newsagent that there was little demand and your interest in music and equipment seemed on-going!

Each month produced new product which reviewers claimed was a vast improvement and yet you are now able to re-test yesterday's classics and find them still acceptable. Please continue this feature.

I felt for some time that hi-fi publishers should take a good look at the Classic Car situation (another interest of mine) where new mags seem to be appearing all the time and yet the older ones still prosper. It has to be assumed that they are providing the right material for the reader.

After all I assume a magazine is in business for profit and not as a cultural (non-profit) service!

I have to say that hi-fi magazines in general should have taken a long hard look at themselves instead of blaming a falling market.

I also have personally a

number of friends who would have bought decent equipment but were so confused by the hi-fi press and patronising hi-fi dealers they just did not believe in it any more and went out and bought Japanese as a complete no-hassle installation.

The purpose of this preamble was really to say that in spite of my intention not to buy any more mags I have now been taking Hi-Fi World for the last year or so and now have it on a regular order.

Please continue and expand your direction and thanks for providing a sane magazine at last when it looked as if the hi-fi press had a death wish.

As a Quad user for some years now, I am glad you are not indulging in Quad bashing. Many of us find this an acceptable compromise and if reviewers do not like it they should state why fairly and discuss it; many things (like ears) are a collection of trade-offs.

Why not have a monthly page discussing problems with manufacturers and their products and invite frank comment?

Finally, if any reader (or reviewer) is interested about what has been said (red faces) during thirty to forty years, I have about 500 clean copies of hi-fi magazines including the original Hi-Fi News No 1 (1956) complete to 1970 or so. At my age they will finish up in a skip when I am gone. A good history

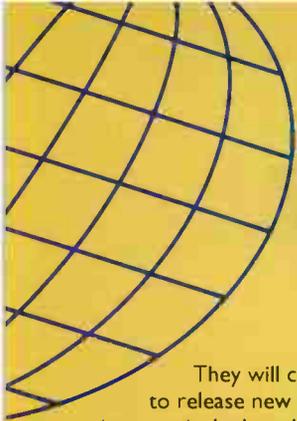
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**Send your letters to: Hi-Fi World Letters Page,**



# writes

They will continue to release new recordings on vinyl when the numbers are viable: "When Sergeant Pepper stops selling, that's when we'll tell the caretaker to finally switch off the lights," David said. "There are some repertoire areas where vinyl is still warmly received; the last Donald Byrd album sold 2000 more copies on LP than CD," he added. Apparently the numbers still weren't platinum, but EMI aren't wielding any axes around the catalogue just to make vinyl junkies unhappy.

However, it has happened that other companies have licensed recordings to other labels. Decca, for instance, licensed an Ansermet tape to Athena Records for a limited edition vinyl release. **EB**

## BRING ON THE SUBSTITUTE

With all the current interest in valve amps and so many new products now available, could I suggest that you consider producing a future article on the different makes of valves?

I currently use EAR 549s,

which are fantastic amps. The sound is awesome, but I have experienced problems when it comes to replacing valves.

Some experts claim there is no difference in valves and that the more expensive (Golden Dragon) are no better than any standard Teonex. However, having first purchased a set of ECC83s and ECC85 in standard form, some of them don't work at all, and some of them made the amps distort and would not produce the correct volume.

Valve amps seem to be like British sports cars; when they are going O.K. they are unbeatable, but they require an awful lot of care and maintenance.

For example, should all the valves be replaced at the same time if one fails, and should they all be the same make to get the best out of them?

Out of interest, my other equipment is Linn LPI2, Lingo, Karma, Ittok, PS Audio 4.6 pre-amp with M-500 power supply, Isobariks and Philips CD850.

The overall sound is smooth but full, with excellent bass and dynamics, even on CD, especially with Jazz Fusion.

Another problem with the 549s is trying to get them serviced. Most people don't want to touch them, although EAR are happy to do so, but it's a long drive from where I live. Any suggestions?

**John C. Hall,  
Littlehampton,  
West Sussex.**

Valve amplifiers do require a degree of tender loving care, but not as much as you seem to have had to put in. There are indeed disagreements about the 'sound' of different valve makes. I know some who in certain cases prefer Telefunken's to Golden Dragons; I also know there are Japanese valvophiles who will pay extortionate sums for original Mullards, preferably in their original boxes. However, as a general rule, it is better to change all the valves at one go. It is also better to use the same make. The premium paid for valves like Golden Dragons is that they are matched for optimum performance; it seems to me you may have fallen foul of

some very variable valves. I think your EARs may well also need re-biasing after these experiments; there really is no alternative but to return them to the builder. Rather than risk an amateurish service, send them back (well-packed and protected) by carrier, ensuring that they are insured for their full replacement value. If you ring EAR first, you will also be assured of being deprived of them for as short a time as possible. **EB**

## SAMPLING THE BEST

I have, in the past, been less than enthusiastic about "top-down selling" as espoused by Linn products and their dealers. Recent events, however, have caused me to reconsider.

Like most enthusiasts, I've struggled for years trying to gain improvements, going through lots of gear relatively quickly. Some of the items I was very fond of, but I don't really know what sound I should aim for. Sure, I thought I could tell when an improvement took place, but sometimes any change can appear beneficial.

I ended up owning a Linn/Naim set-up with funds concentrated heavily towards my vinyl and CD sources. A change of speakers to Neat Petites opened my ears to a different kind of sound, stirring memories of previous items I'd owned, which, my memory told me, were superior. As a former Townshend Rock owner, I still felt this to be superior to my LPI2/Ekos combination even though I'd only used an RB300 arm. It occurred to me that if I sold all items except the transport and DAC, I could afford a Rock with a top-notch arm and a pair of Glastonbury II speakers if I could track them down. Being impressed with Pioneer's A-400 and having heard it was an ideal match for Glastonbury, I added this to my shopping list. To cut a (very) long story short, I now own this system and it answers all my prayers. It's in another universe to my former system and it's finally rescued me from the hi-fi 'treadmill'.

Looking back, what I did was risky, but I felt I had nothing to lose. The trouble was, I couldn't have identified the sort of sound I wanted. Like many, I wanted greater realism and I foolishly associated this with a more 'hi-fi' sound. It became glaringly obvious to me that the most natural sound would be the most real, but without the

Continued on page 17...

## The Month

of the last years - a shame to destroy.

A few suggestions on vintage equipment if they can be found:

- a) Sound Sales, late 40's-50's. The first claimed hi-fi I encountered after the war and certainly the first separate bass and treble control unit I had; but also with speaker phase inversion and a three-channel amp.
  - b) Goodsell of Brighton: hand-built amp including the Williamson circuit and controls for every known recording spec.
  - c) Leak TL12 amps; Leak PU arm with small LP and 78 head; Leak Sandwich speakers.
  - d) Quad valve amplifiers and tuners; Quad corner ribbon speakers.
  - e) Wharfedale Airedale speakers.
  - f) Barker speakers
  - g) Collaro transcription turntable, at the same time as the 301, but cheaper.
- Arnold Studley  
Shipham  
Avon**

I emphatise with your views, since I got fed up with the hi-fi magazines too - and I was writing for them! There were a lot of complaints about their content, and circulations had halved since the late Seventies, dropping from around 60,000 to 30,000 or less by the late Eighties. I suspect the recession has caused even more damage. Many readers were

justifiably fed up with indecipherable techno-twaddle, production line reviewing, uncritical product endorsement and unimaginative content.

Editors, Publishers et al refused to include DIY, because it "upset the trade". A few vociferous retailers and manufacturers claim DIY robs them of sales and are prepared to "withdraw their advertising" to discourage its appearance. Why and when the mags learnt to ignore the interests and wishes of their readers and acquiesce to this sort of threat remains a mystery to me.

I agree with your views about the petty and absurd 'Quad-bashing' phase. Quad always have been a wonderful company. I cannot unequivocally endorse all their products, yet I admire and respect them and agree that journalists should only state their opinions, explain why they hold them and then leave readers to draw their own conclusions.

Just one page on problems with manufacturers? We could fill a magazine with the subject, but you'd not find it very elevating. Just look at the Canon letter on P42/43.

My only regret is that as a small independent magazine run by hi-fi enthusiasts we cannot do all we really want to do, so the magazine is simply not good enough yet. But I am grateful for your praise - and for your astute observations. **NK**

64 Castellain Road, Maida Vale, London W9 1EX.

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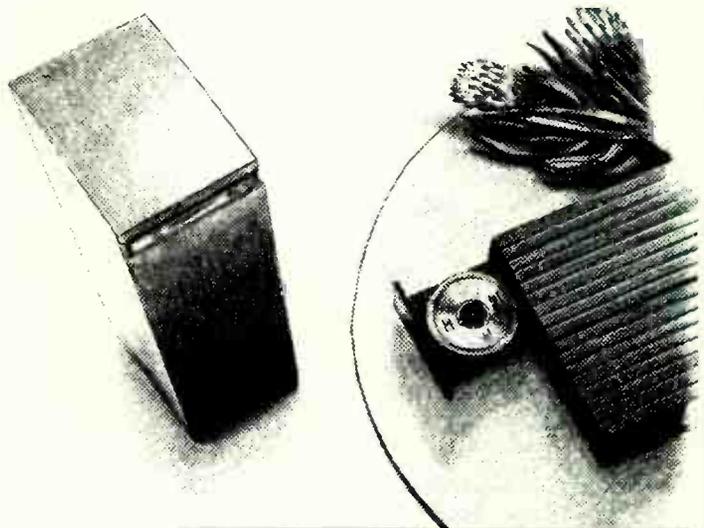
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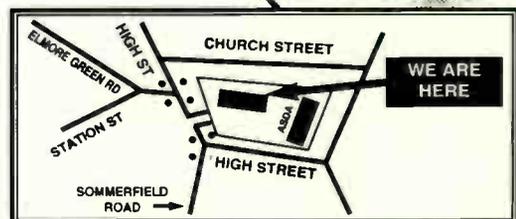
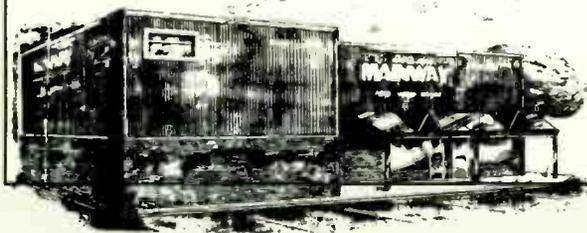
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...continued from page 15

opportunity of hearing this from a really good system, it wouldn't have become clear.

So then, without welcoming all aspects of their new approach, I think Linn are right to persuade dealers to demonstrate the best they can offer as a reference point. I believe that in order to judge which item is better, you must have a clear idea of your intended direction. I've heard the latest Linn Aktiv systems and they aren't for me, but I feel that dealers should try to show us just what they can achieve. After all, if we aren't convinced by their best efforts, how can we hope to be satisfied by lesser offerings? Most customers are afraid to ask for a demo of systems they can't afford in case they are seen as time wasters. Until recently, almost all dealers kept the really exotic items away from us 'ordinary' customers.

The responsibility now lies with more dealers to at least look at Linn's new approach. Only by sampling a range of the best sounds available can music lovers choose which is for them. I therefore urge all enthusiasts to choose their direction carefully before continuing their 'journey'.

**Andrew Baird,  
Winlaton Mill,  
Tyne and Wear.**

I sniff a contradiction here: Mr Baird, having had the opportunity to sample the best of Linn's wares nonetheless took his custom elsewhere! It could be that Linn's 'top down selling' bottomed out in this case. It is an approach that obviously has its dangers, but it is one I sympathise with. I set off on my own journey having been much impressed by a very pricey system heard casually in a Preston dealer's when I was a student. A friend of mine set off on hers having spent a very happy hour listening to a dealer's ESL63s, even though all she could afford at the time was a pair of Rogers LS2s at an eighth of the cost. She remained quite satisfied, but she has had a target in the kind of fidelity she wants ever since. It is an approach dealers could well take up, though in Linn's case it's obviously designed to promote brand loyalty. If people are given a taste of the best reproduction, it does give them something to strive for. Otherwise, the hi-fi industry could end up with mediocrity satisfying too many simply because they never hear what hi-fi could sound like. **EB**

### CD NOT RIGHT

Yet another letter about CDs. I am a design engineer for one of the large manufacturers of professional recording studio mixing consoles and as such I have listened to a lot of analogue sound, digital sound, and performances by live musicians. I cannot measure everything I hear and I cannot escape the feeling that the CD doesn't sound right. I have not heard every DAC in the world, but the best that I have heard all seem to add something unpleasant to the sound and render it less musical. After listening to CD for a long time the doubt creeps in: "maybe this is what it was always supposed to sound like", i.e. "I can't live without my daily dose of vinyl induced distortion." Fortunately I can then rely on my memory of live musical sessions and I ask myself "The last time I played with real live musicians is this the kind of sound I heard?" The answer is NO, DEFINITELY NOT.

I don't have an explanation. I am dubious about the sample rate conversion that occurs between pro sound recording (48 kHz sample rate) and CDs (44.1 kHz sample rate). Maybe 16 bits are not nearly enough. In the end I don't think it matters. CD may be a fait accompli and sure a cheap CD sounds better than a cheap record player, but it is not better.

I read with interest the article on the Silver Night triode amplifiers in which great lengths were gone to in order that all forms of negative feedback be eliminated. What I want to point out is that the triode valve is itself a negative feedback device. That is, the triode has internal negative feedback even if the designer employs no other external forms of negative feedback. The feedback occurs through the interaction of the electric fields inside the valve.

In order to understand why this is so, it is necessary to explain in simplified terms how a triode operates. The triode has three principal elements; the cathode, a control grid, and the

anode or plate. The cathode is heated to a very high temperature and the thermal energy results in electrons being "boiled off" of the cathode and thus forming an electron cloud around the cathode. In the absence of any other electric field these electrons would eventually fall back to the cathode and redeposit themselves but due to the positive voltage on the plate they can be forced to drift across the tube and reach the plate resulting in

magnitude (but not sign) to the field from the control grid.

As the control grid is made less negative (decreasing its retarding field) more current flows which reaches the plate and then flows through the plate load resistor. This causes the voltage on the plate to fall and thereby decreases the positive field. This action continues until the changes in the two fields almost but not quite balance out. And there you have it. Negative feedback via the electric fields.

This negative feedback is what gives the triode its linearity and relatively low output impedance. It is what sets the voltage amplification factor to the relatively low values (10-100) that the triode has. In the search for higher voltage gains, the pentode was developed which introduces other grids to reduce the influence of the plate voltage on the electric field near the cathode.

If the triode sounds good, and the pentode less so, then probably what is being said is that negative feedback isn't destructive of audio quality in some inherent

manner, simply that it is possible to design bad negative feedback circuits and also good ones.

**David J. Mate,  
Long Compton,  
Warwickshire.**

As I've mentioned above, there is an increasing feeling that 16-bit recording is nowhere near good enough, with Deutsche Grammophon hoping for 23-bit eventually. As I also hinted at, sampling-rate conversion is also acquiring more attention. Kenwood's CD-R player, with a new LSI handling the conversion which avoids interpolation, demonstrated quite effectively the losses inherent in the more usual systems. I confess I have not paid enough attention to this problem in the past, and am now feeling as dubious as Mr Mate as to the effect on CD of sampling-rate conversion in the recording and mastering process. **EB**

Continued on page 42 . . .



Do the Silver Night's have feedback or not?

net current flow. The control grid acts as a regulating element, but how?

At any one moment in time, all the electrons in the electron cloud surrounding the cathode have different energies, velocities, and trajectories. Some are closer to the cathode, others less so. What regulates how many of these electrons leave the cathode area and accelerate towards the plate is the electric field intensity in the region of the cathode. This electric field is the algebraic sum of two electric fields which are opposite in polarity. The small negative voltage on the control grid establishes a negative field which retards electron movement. Although the voltage on the control grid is small, the grid is quite close to the cathode. The large positive voltage on the plate establishes a positive field promoting electron movement. Because the plate is far away even though the voltage is large, the field created is about equal in

# Manual Override

The new Nakamichi DR-1 has manually adjustable playback azimuth.

Noel Keywood assesses its appeal.

The new DR-1 is top of the company's range of 'domestic' - my description - cassette decks. Above lie the specials, notably the four-figure priced Dragon and CR-7, that have become a legend amongst cassette enthusiasts. The DR-1 occupies a slot that traditionally offers most of the advantages of a Nakamichi, without some of their more jaw dropping tricks, and at a three-figure price, namely £779.95.

## Exclusive

All the same, the DR-1 has a major embellishment, a real Nakamichi special item, something to relish when playing tapes or impressing friends. It's a complex mechanical head tilting system that adjusts azimuth of the independent replay head. It matches the deck perfectly to the recorded azimuth of pre-recorded tapes, allowing the full recovery of treble energy. About this facility a lot of people might well say "so what?". Pre-recorded tapes aren't taken seriously by hi-fi buffs. One reply to this is that the machine will also accurately read tapes from any other recorder, such as a friend's with whom you might have a tape exchange scheme (I'll leave the reason why to your imagination). Another is that anyone with a collection of pre-recorded tapes, like me, which contain superb music, might naturally want to get the best out of them.

And finally, I'm reminded of a non-technical friend who, when I first met him, used to carry a cheap portable cassette player around, plus a pocketful of tapes. I was intrigued to see him pull out a miniature screw-driver one day and start to adjust azimuth. So, adjustable head azimuth might not seem essential, but to some it is. There are complications in providing this facility though, as well as benefits, which I'll try and explain briefly and quickly. The azimuth adjuster, a knob beside the cassette door, has a little light



above it that gives various warnings. In replay mode it glows green when the head is perfectly upright, or in supposedly-correct alignment. The light extinguishes when the head is

*"The DR-1 has a major embellishment, a real Nakamichi special item"*

adjusted. However, I found the light wasn't 'intelligent'; it didn't show true azimuth error, like that on my ZX-9 (for the record head). It merely shows control knob position - a mechanical detent would have been just as effective.

Additionally, measurement showed the head wasn't optimally positioned when the light glowed green anyway. The IEC test tape I use showed that the adjuster knob needed to be in the one o'clock position for the head to be positioned correctly for pre-recorded tapes. Adjusting by ear using headphones - and with my eyes closed! - I found that in practice

commercially pre-recorded tapes more often accorded with the test tape rather than Nakamichi's green light. So the green light is a little misleading. This error almost certainly arises because of differences between Japanese and European test tapes, but for European export, Nakamichi really should use the European (and world) standard IEC tape manufactured by BASF.

The green light has another use though. It cleverly blinks red if the head isn't properly aligned before recording. Should it be misaligned, then monitor sound quality will be affected, which could mislead a user.

## Hidden Features

Because Nakamichi pack so much into their decks - the replay head has a pressure pad lifter to reduce flutter for example - even an expensive model like this one can seem surprisingly bereft of facilities. There's no search system for pre-recorded tapes, which might seem curious for a deck otherwise equipped to get the best from them.

Nakamichi fit user adjustable bias for tape tuning, but not a calibration system. Owners have to tune by ear - not a difficult or inaccurate task - or use a Matrow bias meter.

I remain as irritated as ever by the

absurd omission of automatic tape selection. Manual selection, with bias and equalisation combined, is of no inherent value; it just makes for errors. And no intelligent defence is available when the next model up, the CR-7, has automatic tape type selection - as do all rivals.

The DR-1 doesn't have Dolby S, only B and C, and it lacks Dolby HX Pro, which it manages to do without quite successfully, due to the outstanding performance of Nakamichi's own discrete heads.

The orange displays are clear, easy on the eye and visually attractive, the orange back light behind

get perfect focus and almost pin-sharp treble.

I detected a fullness to Ashkenazy's piano imposed by the bass lift in the replay chain which, although pleasant enough and even slightly flattering, was not strictly accurate. But then Nakamichi always display this characteristic and generally there isn't enough bass in recordings for it to become overpowering.

There was some temporal vagueness to piano; it lacked the really tight sense of pitch that some of the best dual-capstan mechanisms can make apparent, but there was no hint of slurring or speed jerking in the transport. Not once

imperfections weren't too upsetting. Backing off recording level to +6 or so was enough to clear these difficulties and then the DR-1 showed just how smooth and clear it can sound.

However, at times with bass heavy recordings, notably Tracey Chapman's Crossroads with its inflated rolling bass, the DR-1 really did start to sound a bit too overblown and rumbly; it embarrassed itself here. Yet most of the time, providing strong, deep bass was absent in the music being recorded, the DR-1 sounded cleaner and tighter in the bass end than its rivals, due to the low distortion of its unique discrete replay head.

Chrome tapes were handled well, but treble softened out and blurred much above about +4 on the record indicators. The DR-1 managed better with high quality ferrics like Maxell XL-1S, providing Dolby B was engaged to keep hiss in check. It gave better results than ordinary chromes, especially down at low frequencies, where bass lines held together well. This strength was even more obvious with TDK AR ferric tape, but the down side is that it displays softer treble than the super-ferrics.

**Conclusion**

Manual head-azimuth alignment is an interesting but specialised feature. Potential Nakamichi owners will probably feel they can live without it upon finding the DR-1 £280 more expensive than the model below, the DR-2. Recording studios and professionals are more likely to be customers for the DR-1, plus pre-recorded tape lovers with deep pockets. The DR-1 doesn't just offer superb reproduction from pre-recorded tapes, however, but impressive recordings as well, if at times with a boost to deep bass that isn't strictly accurate. This is a fabulously specialised and deeply satisfying cassette recorder to use, very much a thoroughbred and all but unique for it. I remain impressed as ever, in spite of the small niggles ●



the cassette helping to show how much tape is left. Peak record level (0dB) has been set low, -2dB below Dolby flux. This means that with a high performance metal tape like TDK MA-XG, peaks can be taken right up to +10 - the limit of the display. Being a three-head deck, with unique high-performance independent heads, the DR-1 has off tape monitoring, so sound quality can be assessed whilst a recording is being made.

The deck was as smooth and slick to use as any expensive Nakamichi. It is neatly styled, well finished and works silently. Few owners would rue the day they bought this deck in terms of its appearance and ease of use - manual tape selection excepted.

**Sound Quality**

As always, the DR-1 showed just how much better pre-recorded tapes can sound when played on a properly aligned deck. Clear smooth treble, obviously well extended upward, sharpened transients and an added snap to the sound - even with Dolby B engaged. There wasn't a hint of the wooliness and muffling that normally bedevils cassette, sending a finger to the Dolby button to disengage what most people understandably believe to be the culprit. Cassettes vary surprisingly little in azimuth these days and most of the time, just a little azimuth adjustment was needed to

did I get uneasy about sustained notes: they held pitch confidently. With pre-recorded tapes the DR-1 showed a solidity and focus few machines can match, showing just how superb Nakamichi's decks can be in this area.

With bias at centre position TDK MX-XG sounded tonally balanced and it took astonishing recording levels, with peaks hitting +10 or maximum of the recording indicators for little degradation in sound quality. At these levels heavy bass could get a little plummy and the acerbic crash of a close miked tambourine on 'Esmerelda's Hollywood' from Steve Earle's The Hard Way lost its bite due to treble saturation, yet these

**Nakamichi's own precision engineered, discrete head mechanism that places them at the top of the pile.**



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# NAKAMICHI TEST RESULTS

## MEASURED PERFORMANCE

The azimuth setting of the replay head (its uprightness) wasn't in agreement with the recorded flux angle of the IEC replay test tape made by BASF, so I ran into a small problem straight away with the DR-1. With head azimuth set so that the little warning light comes up green, treble output was just fractionally down (-1dB) at 15kHz or so. I had to twist the knob clockwise by about fifteen degrees to get full output at high frequencies.

What does all this mean? Only that, according to the BASF Calibration Tape, the DR-1 wasn't perfectly aligned to match pre-recorded tapes. The misalignment produces treble loss, or dullness in the sound. The degree of misalignment in this case was small and since pre-recordeds available in the shops themselves vary in recorded azimuth, it isn't especially consequential. However, owners might be a little perplexed to find that a marginally brighter and clearer sound is available with the head "out of alignment". It isn't a fault, so much as an indication of azimuth variability in real life - just one reason why some pre-recorded tapes sound brighter than others.

More surprising and consequential is the absence of upper treble peaking in the replay amplifiers. This almost forces Dolby B to track properly I find (I own a Nakamichi ZX-9), seeming magically to make pre-recorded tapes that sound dull on other machines sound correct in tonal balance on a Nakamichi. Only NAD and Yamaha's Play Trim system offers a similar benefit. What a pity that Nakamichi now seem to have acquiesced to the IEC Standard totally, by giving the DR-1 a flat replay response (+/-2dB) from 27Hz up to 20kHz. losing the treble peak (but reducing replay hiss by -1dB or so).

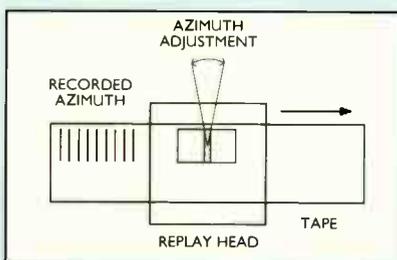
A peak that remains, however, is another down at the bass end of the audio spectrum, at 17Hz to be precise, due to head contour effect. This introduces a massive +4dB lift and starts to raise bass output from 60Hz downward, affecting pre-recorded tapes and recordings made on the machine equally. I find it strengthens bass subjectively which, because it falls away over this region on other cassette decks, gives Nakamichis a 'muscular sound', strong, with deep bass wallop. The DR-1 will display this property, like its predecessors.

To summarise, the DR-1 will replay pre-recorded tapes as well as any Nakamichi, but Dolby will not track as well with bad tapes because the infamous 20kHz treble lift of top Nakamichis has been eradicated (I never complained about it!).

As always, frequency response with recordings shows a distinctive downward slope toward high frequencies. Our response analysis with metal tape (the new IEC IV Primary Reference Tape) shows this. It's a characteristic of Nakamichi's own discrete heads, is unavoidable and results in recordings

that have a degree of warmth and bass prominence to them. This might seem less than perfect for such an expensive and apparently sophisticated cassette deck; even budget decks can be flatter. However, frequency response is just part of the picture. Head overload limits are as important with cassette and it is here that Nakamichi's discrete heads are as impressive as they have ever been. Although Dolby HX Pro hasn't been fitted (Nakamichi says its unnecessary and a bad idea in any case!) the DR-1 still gets enormous levels onto tape: ferrics chromes and metals.

Paired with the most capable metal tape available in its ability to accept high recording levels, TDK MA-XG, the DR-1 returns the same sort of breathtaking ability other manufacturers can still only marvel at from the technological sidelines. For in spite of the efforts of Sony, Pioneer and the other volume manufacturers, none has yet been



The head of the DR-1 tilts to match the recorded azimuth of the signal. Errors arise from head misalignment, skew of the recorded azimuth or skew of the tape as it travels over the head. Azimuth adjustment on the DR-1 compensates for all these factors.

able to produce a head that will get +9dB in the mid-band onto metal tape and +0.5dB at high frequencies. The record level indicator reaches maximum before the tape, it's so high! A high level recording made on a Nakamichi will put some other machines into overload distortion, which you have to beware of with personal stereos and car players.

There were a few aspects of the DR-1's performance that disappointed me. The transport is no better than Nak' transports have been for the last few years, which is to say - mediocre. The spectrum analysis of wow and flutter clearly shows the presence of random drift and wow from the belt driven main capstan. The transport is easily out-performed by competitors all around. The Kenwood KX-9050S I tested for the May issue was clearly superior for example, a factor important in bringing perfectly stable pitch to recordings.

The other peculiarity was over biasing. With user-adjustable bias set to centre position, the DR-1 over biases standard metals like Maxell MX and standard chromes like TDK SA, and it overwhelms standard ferrics such as TDK D. Even with bias set to minimum, the DR-1 would not get high

treble onto the IEC I Primary Reference Tape, which is similar to TDK D. Users could well be perplexed by this. I made a recording onto Maxell MX before measurement and noticed two features: bias had to be turned down quite a lot to get correct tonal balance, and very little change in sound quality was heard. Unlike earlier models, variable bias on the latest sub-£1000 Nakamichis affects response little, even at maximum or minimum. Ideally, more adjustment range should be provided and median bias should be better set to match 'normal' tape formulations.

My conclusion is the usual one I reach with Nakamichi: could be better, but still did very very well. **NK**

## TEST RESULTS

### REPLAY (pre-recorded tapes)

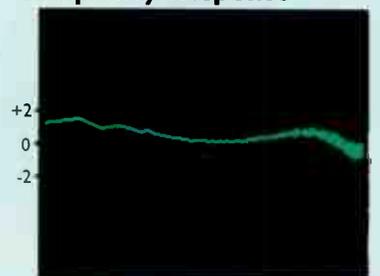
Frequency response (-2dB)	60Hz-20kHz
Speed accuracy	+0.6%
Hiss (70uS, Dolby out)	-62dB

### RECORDING (blank tapes)

Frequency response (IEC Primary Refs.)	
ferric (IECI)	27Hz-8kHz
chrome (IECII)	27Hz-20kHz
metal (IECIV)	27Hz-20kHz
Separation (1kHz)	-65dB
Distortion (315Hz)	0.3%
Hiss (70uS, Dolby out)	-56dB
Speed variations (DIN total)	0.07%
Flutter energy (3-3.13kHz)	-33dB

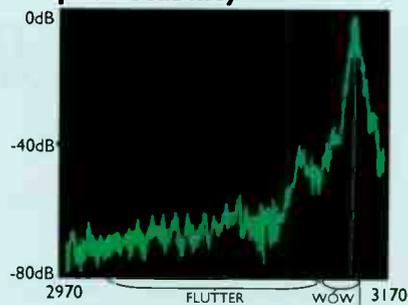
MOL/SAT (IEC Refs)	315/10k
IEC I (ferric)	+3.6dB/-4dB
IECII (chrome)	+3.6dB/-5dB
IECIV (metal)	+7dB/-1dB

## Frequency Response

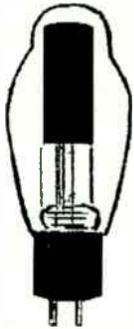


Response with metal tape.

## Speed Stability



Random wow and drift.



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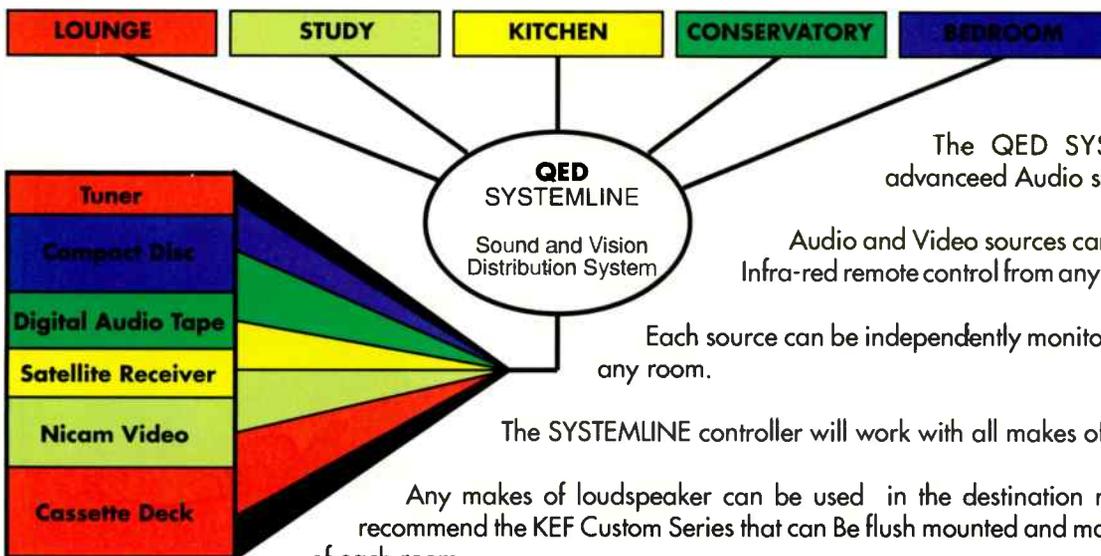
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# Black to the Future

**The Thorens TD280 is now in its MKIV guise  
and Eric Braithwaite finds it the best yet.**

**T**he obsequies have been read over the black disc many a time, but like Mark Twain said about his own premature obituary, reports of its death have been greatly exaggerated. At least so it appears, although Thorens' new turntable, the TD280 MKIV has appeared fully clothed in mourning black, even down to (or up to?) its black acrylic lid. White lettering supplies a discreetly enlivening touch.

At just £199, this is more than a passing valediction, more than Thorens just paying lip-service to vinyl's last days. The German company, so it's said, has been a little taken aback by signs of a vinyl revival even in its home country, which appeared to have embraced CD with even more enthusiasm than the rest of Europe. From resignedly visualising a

gradual run-down of manufacturing and catering for a declining number of specialists, Thorens are now finding themselves - as the last mass-manufacturer of turntables in Europe, making sixty thousand a year - running fast to keep up with demand.

For the money - the price admittedly of a decent budget CD player - the buyer acquires a solid-plinth turntable, TP35 tonearm and the kind of quality engineering that has made Thorens a respected name for nearly a century. For another £20, it will arrive with an Audio-Technica AT-95E cartridge already fitted and aligned.

It may not cost a lot, but this is a deck that hasn't been compromised by the kind of user-friendly gadgets that made turntables like the Dual 505 extremely

popular. Automatic lift-off of the tonearm, either at the end of the record or part-way, is effected by simply turning the dual-speed control to 'Stop'. It is tripped by an optical sensor, not the kind of mechanical link found in other designs that has tended to interfere with the integrity of the arm. It works well, albeit with a bit of a clunk as the solenoid operates and a mildly distressing wow as the record slows to a stop at the same time - but then I'm used to hand-cueing. The whole system proved fool-proof: turn the speed switch to 33 or 45, press the 'Start' button next to it, move the arm to the record, flick the cueing switch and Bob's your uncle. Automatically, the cueing switch moves to the 'down' position and stays there until you either move the speed control to 'Stop' or flip it to the 'Raise' position.

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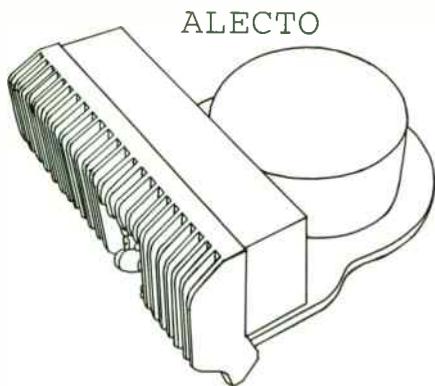
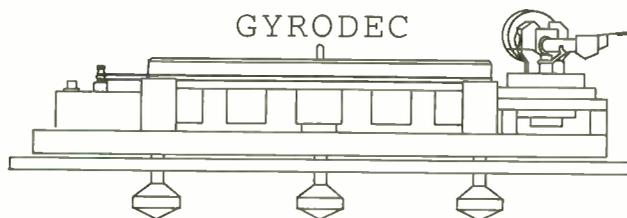


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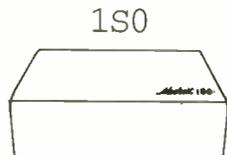
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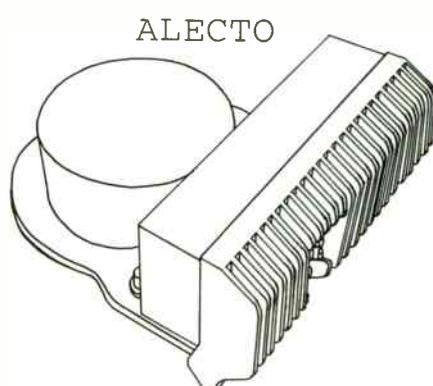
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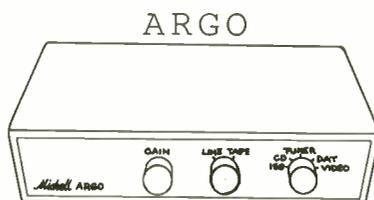
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If there's a snag to this, it's one that's likely to bother me more than most buyers. To align a cartridge using a normal alignment protractor is tricky, because the sprung cueing knob has to be held with one hand while the cartridge is moved along the slots in the headshell with the other. Cleverly, however, Thorens have supplied a clear plastic gauge which fits over the removable headshell, so the cartridge can be fitted and aligned at the dining-table. I couldn't fault it - it agreed with the Heybrook protractor I normally use.

What I would fault, however, is the hex-bolt which fixes the headshell to the arm; mine was extremely stiff and the hex-key looked alarmingly close to bending before it loosened it. The cartridge-fixing kit is all any budding audiophile could wish for: a mirror to check the vertical alignment as the headshell is bolted back into the arm, spacers to adjust vertical tracking angle (VTA) and a hex-key which fits both cartridge and headshell fixing bolts. While the arm, unusually, can be balanced laterally, there's no arm-height adjustment.

Basic audiophilia doesn't stop there. Power is supplied by an in-line transformer, in the middle of a cable which must be one of the longest ever. With my nearest thirteen-amp sockets fully occupied, it allowed me to use a socket ten feet away.

### **Pitch Stability**

Under the plinth is an electronic 16V power-supply which smooths the waveform, is said to guarantee long-term pitch stability, and in the period I had the TD280 certainly seemed to work well. It does mean that some upper-range cartridges are well worth using; I had an Ortofon MC15 super high-output moving-coil installed for a while without in the least embarrassing it. Before anyone runs away with the notion that this is a budget platform for a spare Koetsu Urushi, the arm won't balance massier moving-coils; about 7.5g is the upper limit. It's obviously designed more for moving-magnets, which tend to be in the 5g region.

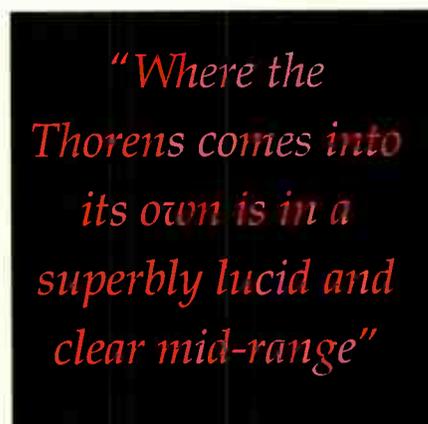
Last but not least are three other audiophilic aspects. The bearing is inverted à la Pink Triangle and others, so the centre of gravity of the platter is kept low, and in the U.K. the TD280 MkIV is supplied with a felt mat. I did try a rubber one, but while that brought the mid-range forward a trifle, it de-focused the imagery at the outer edges, so stick with it - Thorens are right. Finally, the well-machined platter itself sits on a belt-driven Mazac hub, from which it is de-coupled by a thin rubber mat.

De-coupling from the floorboards is by four spongy feet; footfalls are reasonably well absorbed, but a good platform or wall-shelf is advisable. This is not a deck on which you should idly drum your fingers, however, or you will find yourself supplying your own drum-track. If you want a sprung suspension, you'll have to set aside another eighty pounds for the

TD166/VI/UK with its Rega RB250 arm.

Thinking of pounds, while the instruction manual is splendidly detailed and relatively easy for even a novice to follow, it has its moments of 'Germish'. Does a "tracking force of 1.5 pond" imply a bias setting in duck-weeds? At least it says "grams" in brackets . . . I was much pleased, however, by the elegant Victorian instruction to "avoid the perspiration of the hand" when touching the drive-belt.

I make no apology for slotting the Thorens into a reference system of which no component part cost less than seven or eight times as much. If it can take that - and it did - then it's not going to fall down in a system more appropriate to its price. For what it's worth, it was used with a disc RIAA pre-amplifier from Sentec of Sweden, Michell Argo pre-amplifier with Hera power supply, Sentec mono-block power amplifiers and ESL-63s. Cartridges used, apart from the Ortofon, which



retails at a hundred, were Goldring's new 1006 and improved 1012 GX and 1022 GX moving-magnets from £44.95 to £79.95, of which more later.

Fundamentally, Thorens' new turntable is well worth at least two-and-a-half cheers. The power supply shows its own worth in a far more stable picture and more substantial imaging than anyone has a right to expect at this kind of price. Instrumentalists and soloists didn't waver in their position, even if their three-dimensionality was slightly compromised compared to top-ranking turntables. I had to constantly remind myself, however, that I was listening to a turntable that cost half the price of my normal cartridge; with that in mind, the small degree of blurring around the edges was by no means unacceptable.

Where the Thorens comes into its own is in a superbly lucid and clear mid-range. With both the Goldring 1022GX and the MC15, Mary Black's 'Columbus' revealed nuances of inflection that while not perfectly elucidated were within an ace of what much more expensive turntables achieve. Enough studio ambience came through to give a very acceptable impression of space, though the amount of air around individual performers was more contracted and mildly compressed by comparison with

pricier breeds of turntable.

There was a surprisingly low degree of coloration; if the Thorens had any sins, they're counted in small omissions rather than glaring inadequacies. One of the more obvious failings - though if you don't have access to something like a Gyrodec it's very doubtful whether it would affect you - is that the upper mid range and lower treble lacks breadth of tonal colour. It was more evident in the violins of orchestral pieces than chamber works, where players appeared to fuse into one block rather than standing alone as individuals. Against that, when listening to Rachmaninov's Allegro vivace from the Symphonic Dances (Previn on EMI) it was quite startling to hear both the xylophone and the tam-tam clear and bright, vivacious and clearly placed in the orchestra, both perfectly distinguished.

Another plus is a mild degree of forwardness in the mid-range which tends to cover up some of the subtler instrumental and recorded detail elsewhere, while keeping the basic picture well out of the speakers. The better the cartridge, the more the lateral spread - although the individual elements tend to broaden laterally rather than fill out.

While the midband was attractive and pleasantly light-footed, the lower reaches were a little too light-weight. There was nothing wrong with cello tone, fundamentally, for example, except that as it went down the scale, it lost body. Try anything that's bass-guitar driven, and while it keeps up with the rhythm, the forcefulness diminishes, the pace sounding - somehow - unexciting. A double bass - whether it's behind Mary Black or part of a Jazz group - sounded shy. Curiously - I wouldn't have expected it - the whole range of instrumental and vocal colour maintained a clear perspective. Pondering later, I couldn't complain that any recording became in the least unbalanced; the Thorens maintains an excellent equilibrium.

### **Vinyl Lives On**

I can't help but say I became very fond of the TD280. Even much more expensive turntables have a habit of being more adept at one kind of music than another - no names, no pack-drill - but it shouldn't be too difficult to call to mind at least one that dislikes choral music, for example. All is grist to the Thorens mill: it may subdue some of the finer filigree of the most complex recordings, but they all maintain their credibility. I wouldn't choose it as a mainstay if I played vinyl more than CD, but for people who have a record collection that comes second to the silver place-mats, the TD280 should certainly be one of the first on their list. It's convenient to use, it's simple to set up, both mechanically and sonically it's vice-free. Admirably engineered, too, it could well be the turntable that keeps people spinning vinyl that bit longer. Long enough for the black stuff - and Thorens - to survive into the next century.



# Crystal Splendour

**The Meridian 206 is updated yet again, this time it gains a  $\Delta\Sigma$  suffix.**

**Dominic Baker listens to another CD player incorporating the Crystal DAC.**

The 206 $\Delta\Sigma$  is no exception from the Crystal rule: it has a big, friendly, musical sound. Instead of sitting on the edge of my seat straining to hear the last piece of information, I found myself sitting back, uncaringly letting the music pass by. The Meridian doesn't demand attention, which will be a welcome change for many, especially vinyl lovers, who are not fans of CD's remorseless presentation. In fact the whole texture of the sound is more similar to that of the black stuff than I have heard before, and certainly more similar than you would expect after listening to early multibit players. The first track of The The's new album, which is the sound of a stylus tracking the blank grooves of a record, could easily convince an unknowing listener that it was vinyl being played.

Moving on through the same album only served to enforce these feelings, sweet, melodic treble, a slightly soft midband and rounded bass all reviving memories from the

past. In this way the 206 is very pleasing to listen to.

The £995 Meridian 206 $\Delta\Sigma$  (the symbolic form of Delta Sigma), in common with many recent CD players in its price range, uses Crystal's CS4328 digital to analogue converter chip. Part of the reason for this chip's sudden popularity is that it comes with the necessary analogue output filters on-board, which reduces space on the circuit board and simplifies design. It can also be made to sound very good indeed, possessing a lucid and easy character, but with a firmness of presentation that most listeners find attractive.

The only down side of using the Crystal chip is that, in our experience to date, players all have a very similar character. In fact, any small differences could come down to just the output amplifying device used, which in this case is the rather familiar NE5534 amplifier chip. Manufacturers still opt for this device, in spite of a wealth of higher quality alternatives, notably

from Burr Brown and Analogue Devices, because it is "cost effective", they tell us (i.e. cheap). Good it may be, but we can't help having reservations about the way it turns up even in high cost products like this one. The fact that Michell have built their successful Iso and Argo preamplifiers around one super-quality U.S. manufactured audio chip indicates that there's leeway for improvement here.

The player comes complete with its own remote control, which is a standard Philips unit. If you already have existing Meridian 200 series equipment the optional 209 remote control can be added, which gives complete control over all components. The rear of the 206 $\Delta\Sigma$  has the necessary 200 Series communications link, as well as optical and coaxial digital outputs. Although the transport mechanism is the older Philips CDM-4 type, it is solidly mounted and the player could, I believe, be usefully upgraded in the future with the

addition of an external DAC.

The Meridian was, by today's standards, slow when accessing tracks, which I found a little frustrating, but then again it does give you enough time to return to your seat after changing the disc before it starts playing. Ergonomically, it's peculiar to have the track skip buttons arranged vertically, rather than side by side, but familiarity does lessen the inconvenience. Otherwise, I found the player nice enough to operate; the drawer mechanism is in a different world to that of the 207, which first used this loading arrangement.

All new Meridian players, this one included, are capable of reading a disc that has no table of contents (TOC). The TOC is the inner portion of the disc that contains the track information detailing position, time and such like. The reason behind this omission is that CD-Recordable machines set the TOC information only when the user has filled the disc to their requirements. Nearly all players need to read the TOC before they will play the disc. As Meridian are one of the few companies to produce a CD-R machine it seems a sensible feature for them to include.

The soundstage created by the Meridian was reasonably large and although the edges were a little vague, there was a sense of depth to the sound stage rarely available from CD. Image position within this stage was, however, not so good. It wasn't difficult to determine where musicians were in relation to each other, but their exact location is best described as hazy. After careful listening I could point and say "he's roughly in that sort of area" but there was no razor-sharp sense of imaging.

This was when it became clear to me that the player is generally a bit vague; it lacks the precision normally associated with the better CD players in this price range. The bass seemed soft or phasey and not as free or natural as would be expected or hoped at this price level. It was not particularly solid or dynamic, which is meant to be one of the strongest points of CD. The midband and treble suffered a little sibilance with high level signals and there was a lack of coherence, which showed especially with female vocals.

On REM's *Out of Time* album, Kate Pierson, of B52's fame, lends her vocal chords as a backing singer. Normally her voice projects forwards well, with a sense of clarity that helps bring out the emotion in her voice. Played on the Meridian, the same track sees her struggling to get out from the mix, her delivery seeming constrained. The sharply etched outline to her voice was softened, as was the whole performance. I found it relaxing to listen to, but at the same

time felt the 206ΔΣ- was hiding something by not resolving all of the available information.

Meridian's 206ΔΣ will suit those who are looking for some of the easy going qualities associated with vinyl LPs, including a big soundstage. For me, the player underplays all of the better qualities of CD, such as razor sharp accuracy and a forceful, forward presentation. It is very undemanding



The Meridian 206ΔΣ uses two separate boxes for transport and DAC that are rigidly bolted together.

of the listener, which will be exactly what many are in search of, but not all by any means ●

**MEASURED PERFORMANCE**

Like EMF and Quad, Meridian have decided to switch from Philips Bitstream chips to those from Crystal, an American company. We'd like to be able to say that the reason was better sound quality, but noting that everyone is using the simpler all-in-one package within Crystal's range, convenience might have something to do with it too. All the same, the Crystal chip does usually sound good.

Last month we reviewed the new Quad 67 which also uses this chip; it's interesting to see differences in approach. Both are integrated players but the Quad uses Philips' new CDM-9 transport while Meridian have chosen to stick with CDM-4, albeit mounted on their own substantial cast chassis.

The frequency response of the 206 is identical in range to the Quad's, as would be expected, but its characteristics differ. Both have some bass lift, which is a feature of this chip it seems, but the 206 has less, making it the flatter of the two. Subjectively, even a small amount of bass lift can be found to be audible, but in the case of the 206 it will not be prominent.

Distortion figures for the 206 were slightly worse at all but the highest signal level, but by such a small amount that it should not be audible.

Another distinctive characteristic that we have noticed with players using the Crystal chipset is the higher than normal noise floor, when compared to Philips or Burr Brown chips. However, the noise figure for the 206 was satisfactorily low all the same; hiss would not be audible in use.

The separation figures, however, were a bit of an oddity. Separation on the left channel was slightly better than that of the Quad 67 and certainly a very respectable figure. However the right channel was considerably worse; by 4dB at 1kHz and 13dB at 20kHz. This anomaly is possibly caused by a layout problem on the board.

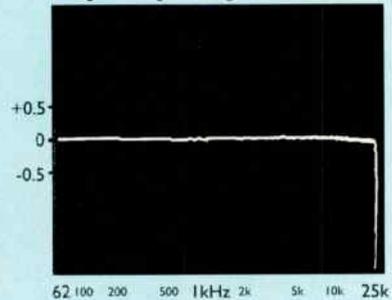
Finally if you do go into a shop to audition these two players against each other, take into account that the

Meridian has a higher than standard output level which will make it sound initially superior. You will need to adjust the volume slightly to compensate before you make a final decision. **DB**

**TEST RESULTS**

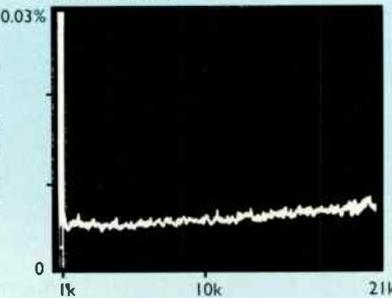
Frequency response	3Hz-21.2kHz	
Distortion %	-6dB	0.003 0.003
	-30dB	0.006 0.006
	-60dB	0.51 0.52
	-90	35.6 34.8
	-90dB dithered	6.8 7.3
Separation	left	right
	1kHz	-108 -104
	20kHz	-90 -77
Noise	-96dB	
	with emphasis	-100dB
Dynamic range	107dB	
Output	2.2V	

**Frequency Response**



Slight bass lift.

**Distortion**



Negligible harmonic distortion.



# SURRO

Jonathan Jordan comes out with his  
his own front room by a

**A**udio Visual (AV) is the generic term used to describe the hybrid evolution of video and audio technologies. The last ten years have seen this form of entertainment gather momentum. Until now the argument against home viewing of films has been that you cannot recreate the feeling of scale and all-round reproduction offered by a cinema. But the arrival of Dolby Pro Logic to the home market claims to change all this by recreating cinema effects in your home.

This month's comparison test is of six AV amplifiers. All possess Dolby Pro Logic circuitry and Digital Signal Processing modes, but none claim to limit their role to just AV. All have a complete set of audio inputs and strive to perform as high quality hi-fi amplifiers when music alone is required.

Testing these multi-tasking units I decided to see what AV facilities they have and also use them as conventional amplifiers. I wanted to see whether it was possible to mix the two technologies successfully or if they were as incompatible as the old adage states.

I'm very much a film fan, so selecting titles with Dolby Surround compatibility was a pleasure. Before long, a list of titles

on either Laserdisc or VHS video had been short-listed for the test. Qualifying exactly what 'cinema sound' is was a little more complex. I felt a tour of the West

strated the real cinema surround standard and prepared me for my task.

All the amplifiers on test came complete with full function intelligent remote controls (RCs). This means that they have the facility to learn the codes from other RCs so that one remote unit can operate all infra red controlled devices, typically your television, video recorder or CD player. This is quite a handy feature, ensuring that you do not have to have three or more RCs arrayed before you!

The amplifiers all have visual display panels which, depending on the model, display which input is selected, volume level and whether the amplifier is operating in DSP, Pro Logic or normal mode. Some offer other features, but generally they aim to give visual confirmation of the amplifier's mode.

To generate surround sound the amplifiers must drive more than two speakers: within this group four was the minimum and six the maximum. They all have to be fitted into the listening room, the rear channels feeding speakers behind the listening position,

on either side of the room, whilst the front speakers are placed in front, to left and right. If centre speakers are to be

## DIGITAL SIGNAL PROCESSING

Digital Signal Processing (DSP) is a feature fitted to all the Audio Visual amplifiers on test here. The DSP's function is to transform the two channel stereo signal into a multi channel soundstage. This feature can be used when a greater field of sound is required from a normal AV program such as stereo television broadcast or non Dolby Surround recorded software. The DSP function can also be used to simulate different acoustic environments within your room when listening to an audio repertoire from standard stereo sources (CD, LP, Tape etc).

DSP works by using time delays and signal splitting to deliver various parts of the music from different speakers at differing times to mimic a certain environment. The manufacturers have measured the acoustics of certain environments, typically a church, a jazz club or stadium and the echoing or reverberance of these venues is encoded on the DSP microchip. DSP effects aim to extend your listening experience by transforming the acoustics of your room to those of one of the venues programmed onto the DSP chip.

Other functions can co-exist within the DSP modes. It is possible to tailor the echo, surround effect or field of sound that you feel is most satisfying. The ability to turn ordinary stereo recordings into multi-channel reproduction gives plenty of scope for experimentation with the modes, delays and balances that are on offer. For those people who like working with special effects, these units can add greatly to the enjoyment of listening sessions.

End cinemas could be justified! It ended at The Odeon Cinema in Leicester Square where Bram Stoker's 'Dracula' demon-

# UNDEDED!

ears up, having been surrounded in  
posse of AV amplifiers.



used to reinforce speech they should ideally be placed either side of the TV monitor.

To calibrate the room for Pro Logic a delay time has to be calculated. All of the instruction manuals explain how this is done, using either a chart or a formula that is based on the position of the front and rear loudspeakers. This is a simple process and is really a controlled method of getting the right sound at the right time from each 'speaker, so ensuring the best surround sound effect. Another necessary adjustment is balancing the 'speakers for level. However all of the amplifiers generate a test tone which simplifies the process of setting the levels of each loudspeaker.

Choice of loudspeakers is an important issue and although many speaker manufacturers provide complete speaker sets of five or even six units ready for AV use, they are not essential. Existing speakers can be used. Normal hi-fi loudspeakers can be used for the front channels. When the amp is used for normal stereo listening, these speakers will be the only ones operating.

Rear speakers do not have to handle so much power and good compact book

shelf models at around the £100 mark will provide satisfactory results. If central speakers are to be used they must be magnetically shielded otherwise they will

action scenes speech will then be clearly audible, preventing the surround effects overpowering the speech.

Satellite and sub-woofer systems can

also be used to great effect with AV systems. The powerful bass produced by a subwoofer adds power to films such as 'Air America' or 'Terminator II' and the sats, if shielded, can make excellent centre speakers.

Instruction manuals can sometimes be an excellent cure for insomnia. However, working through the guides to these AV amplifiers is strongly recommended. When operating with the DSP a full understanding of what each setting offers ensures that the performance of each mode is maximised.

Finally, after tackling the instructions, calibrating the system and choosing your film, all is ready to go. The effects from each unit differ immensely but all of them managed to alter the standard experience of 'watching the box' to varying degrees. Hi-fi can be used effectively to strengthen the experience of television viewing, bringing it up to

cinema standards. These AV amps marry the two mediums together in a complex but sophisticated manner.

## DOLBY PRO LOGIC

Dolby Laboratories are the leading name in film sound track recording and many films and practically every blockbuster or major production is recorded and encoded in Dolby Stereo. After Cinema release, these films are then launched on the home video or Laserdisc market and the original film sound track is condensed down to two channel stereo. Not only does the picture size get reduced, but also the sound stage. Dolby Pro Logic plans to change this criticism of home entertainment by at least ensuring that the sound at home is as extensive as that in the cinema, even if picture size cannot be the same.

Recorded software bearing either the label 'Dolby Stereo' or 'Dolby Surround' is compatible with the Pro Logic circuitry, both are exactly the same recording method but with different names. Dolby stereo has been renamed Dolby Surround for the home market to make home viewer aware that this option is available. Pro Logic circuitry basically reverses the action of condensing the multi-channel information down to two channels and produces five or more channels of information which is passed to the front, rear and centre speakers.

The Dolby Pro Logic system requires the central channel speaker or speakers to be placed very near to the screen in order to relay the main components of the dialogue. The majority of the power is delivered to the front left and right speakers and these reproduce the main musical and action effects. The rear speakers provide further effects and their presence completes and emphasises the three dimensional effect within a room.

distort the TV picture. Since centre-front speakers mostly handle dialogue, they should be very clear and precise. During



**DENON AVC-3020** **£729.99**

**D**enon have gained a good reputation within the hi-fi marketplace for producing Japanese products with genuine audiophile pretensions. Denon's venture into the world of AV is in the form of the AVC-3020 surround sound amplifier. At £729.99 it is competitively priced and clashes directly with offerings from larger Japanese rivals that are better known in the field.

The Denon has good build quality and the presence of gold plated input terminals gives a favourable impression; it suggests the amplifier has been designed with hi-fi sound quality in mind. The Denon drives six channels: front left and right, rear left and right, plus two centre speakers that aim to give better across-screen sound reproduction. It also provides the option of connecting up two main sets of loudspeakers, the terminals being able to accept either banana plugs or bared wires.

The front display of the Denon is simple and uncluttered. All the controls and the auxiliary AV input, with the exception of power and volume, are concealed behind a flap and a large, blue display keeps you informed of which mode you are in. The full function remote control unit allows complete operation and thus full 'armchair' control.

The instruction manual is simple to read and well formatted. Use of the test tone and setting the correct delay time for the Dolby Pro Logic is very straightforward and before long you are ready to go!

### SOUND QUALITY

The Denon centre speaker arrangement worked well, the first noticeable point being that speech was clear and sharp. It's an arrangement that strikes an ideal balance between vocal level and the surround sound effects; the latter never overcame dialogue. Voice was well projected and clear but moments occurred when the sharpness of upper vocals were not relayed with total accuracy.

The amplifier allowed the musicality and harmony of orchestral themes and incidental music to come through and join you. It generates a 'backdrop' image behind the surround stage and although

this musical image is not very deep, it is wide and really enhances the visual reception of certain scenes.

Surround-sound effects were very well demonstrated by this Denon unit and it succeeded in opening out the action soundstage inviting you into a whirlpool of adventure. The separation between each channel was strong, occasionally too strong. Certain sounds did not blend into the carefully staged landscape before you but instead could be traced from an individual loudspeaker.

The musical sound quality of the Denon was very dynamic, but not incredibly well defined. The Denon storms through the music at such a pace that you do not really get a chance to analyse the sounds being shot at you from all directions. The sound is muffled and rounded at the top end and the bass is a touch heavy - but is also very punchy! I occasionally became confused by this over zealous phalanx of sound but it never took long for these slight multi-channel confusions to pass.

Although it is not exactly high fidelity, this system does fulfil its design specification by delivering cinema action, pace and drama and an instant extension to your listening environment. Dolby Pro Logic is not traditional hi-fi but with the Denon it becomes fun and exciting. Scenes from Terminator II are enhanced and can explode before you like a bottle of shaken Champagne!

The Denon also had a very good selection of DSP modes, one of which, 'spectarea', was particularly effective at

transforming ordinary stereo recordings into pseudo surround-sound. The remote control lets users tinker with the delay time and various DSP modes easily, to find one suited to both mood and recorded software. With some DSP modes voice clarity had to be traded-off against effects, but a compromise could nearly always be found which resulted in pleasant stimulus from all six speakers.

The Denon can handle a fair amount of power before distortion creeps in, the amplifier does give gentle indications before distorting heavily: the loss of atmosphere on surround sound is one such example. The treble eventually becomes shrill and piercing, but not until it is really pushed to the limit.

When used as a two channel stereo amplifier the Denon fared well in comparison with the others. There was no background hiss, the image was very wide and good mapping of instrumental content was attained. The amplifier also scored well in generating a good standard of depth and clarity.

Performance was slightly marred by the odd undefined portrayal in the upper mid and high ranges. The sharpness of certain high notes and corresponding transients were not totally convincing and harshness crept in on odd occasions. The tracking in the mid and low frequency ranges was far better and good detail was present even with very low frequency passages.

The Denon performed adequately via its phono input: stereo separation was its main weakness but otherwise a very acceptable level of reproduction was obtained. Width and depth were well enhanced and I felt that the phono stage was best expressed as being technically correct but lacking in any extended interpretation of the music or its character.

### CONCLUSION

On balance the Denon makes a very good companion. Its AV performance is stable, competent and detailed. It does well with conventional audio and its 'bypass' feature allows quick switching between multi and two channel operation. It caters totally for a wide range of AV uses but has not turned its back on standard audio: it has feet firmly planted in each camp and this, coupled with a good overall performance in every area, separates it from most of the pack.

**The 4mm sockets make the Denon convenient to wire up. It has an impressive array of inputs including S-jacks for four visual sources.**



The JVC RX-1010V receiver is one of the most expensive AV units on test but it does include an AM/FM tuner to complement all its other functions. Visible on the flat, black fascia are a power switch, touch-control volume, speaker on/off control and a vast display. All other controls are concealed behind a flap that can be opened manually but a large, fully functioned remote control unit allows total 'armchair' operation.

The display of the JVC was very easy to read with command functions echoed on the LCD screen of the remote control. The instruction manual does its best to explain each and every feature, but understanding the unit took some time.

On the rear panel the JVC has ample inputs for Video Cassette Recorders (VCRs), Videodisc Players and numerous audio sources. The A and B main speakers have screw terminal connectors. There are connections for rear stereo speakers but only a 'pre-out' connection for the central channel. This assumes you have a suitable powered centre monitor or a spare power amplifier. As most in this test have a powered output for the mono centre channel it makes the JVC a little inconvenient.

Once acquainted with the intelligent remote control (which can learn the commands of other remotes) and its touch screen I generated the test tone and set my speaker levels to the required balance. This was straightforward, but a little fiddly as I had to ensure that the correct portion of the LCD display was being pressed.

A quick scroll through all the functions alerted me to a wide array of DSP modes, all of which could be customised to individual tastes. The tuner operated well; it had no difficulty settling on a station. The JVC also incorporates a seven-band equaliser which can be controlled from the handset and provides extra, but possibly unnecessary features to complement the multitude of others available.

### SOUND QUALITY

Engaging the Dolby Pro Logic mode caused the familiar Double-D logo to appear on the display. Unfortunately, this event was more exciting than my initial reaction to the surround sound. Worried



**JVC RX-1010V £919.99**

that something was wrong, I re-checked all connections and consulted the instruction manual, but alas everything was working properly.

Although each speaker was performing in a very steady, undistorted manner, no excitement was building. Rather than feeling transported into the film set, I only felt very conscious of being in a room with five loudspeakers around me, for no apparent reason. I turned up the volume but soon reached a point where it would go no louder. The JVC produced a clean and undistorted sound at its maximum, albeit slightly modest, volume level. But although there was punch and power lurking in the unit, it did not inspire or add to the film soundtrack, it merely reproduced it coolly and without passion.

Dialogue wasn't very clear, a slight hiss creeping in during silent passages of films. JVC have opted to let either a powered monitor or external power amp handle the fifth/speech channel, which I feel is their biggest mistake. Although the rationale of surround-sound is to have missiles shoot overhead, bullets ricocheting around the room and background music flowing with the ambience of a mountain rapid, it is essential that dialogue is also accurately produced and not muffled in any way.

The JVC has you permanently pricking up your ears to catch dialogue. This means that the surround effects are excluded by the highly

advanced signal processor in your brain, leaving just a bland, lifeless and ineffective musical landscape.

Move the JVC into DSP mode and it becomes more acceptable immediately. The various features and acoustic mapping really start to work with audio alone. The functions for tailoring the sound require some careful reading of the instruction manual if they are to be mastered, but once qualified you can really have some fun. I even found myself playing with the equaliser functions.

Operating the JVC in normal stereo mode with only two speakers is also quite enjoyable. The sound it conveys is very direct and the power that it lacked in AV mode was not missing from two-speaker operation. The sound was a trifle too bright at the top end and a little too rumbly, heavy and undefined around the bass notes, but not to a disturbing degree.

Stereo separation was good and both image depth and breadth quite accurate, but the JVC did not have very much innate character. Although the music was technically correct, it did not display any flair. There was a small amount of hiss generated that did not emanate from the recording, creeping in at high volume levels. Also, some distortion was present in the upper mid range. Low frequency harmonic passages were also a little lost when incorporated within multiple instrumentation.

The phono stage was technically correct with good channel separation but the warmth of vinyl was not really done justice and hiss caused large inroads into my listening pleasure. The phono stage handled transients well but low frequency rumbles could occasionally get too rowdy.

### CONCLUSION

In essence the JVC is a well built hi-fi amplifier that appears to have had AV modes added to its design. As one of the most expensive units on test it can boast most features, but the Dolby Pro Logic does not build upon or enhance this receiver's better points. It offers technically solid hi-fi reproduction and good DSP modes but does not plug the gap in the AV market that it was designed to fill.



The small fan on the rear of the JVC could become audible through quiet scenes, after it had been worked hard.



**KENWOOD KA-V8500 £699.95**

**A**s I moved the Kenwood KA-V8500 into my listening room, the first thing I noticed was its weight. At £699.95 it is not the most expensive model in this group, so Kenwood appear to be offering value in at least one sense of the word. The appearance of the '8500 is quite striking, knobs for every function fill its front panel. With the exception of bass and treble controls, all of the functions (and more) are echoed on the intelligent remote control. A small screen displays the functions in use, keeping you aware of exactly what mode you are in.

The amplifier has a complete set of gold plated terminals at the rear and one further set of terminals on the front panel for connection to a camcorder or other source. There are also pre-amplifier out connections for each of the five channels, and for a sub-woofer. Sturdy construction account for its high weight. Rugged screw speaker terminals and gold plating also reflect the good standard of build quality.

Kenwood have obviously reached the sensible conclusion that speech reproduction is as important as surround effects and they have developed a special central dialogue speaker that they recommend is partnered with this AV amplifier. The CS-6 speaker unit that was provided adds a further £149.95 to the price of the unit. It is fully magnetically shielded so that it can be placed on top of the monitor without affecting the picture. The Kenwood drives both front and rear channels and, additionally, the centre channel can be switched to drive either one or two speakers in mono configuration.

The set up and ease of operation of the Kenwood was similar to others, with a test tone enabling speaker levels to be correctly set. The remote control functioned adequately and like all other units on test was intelligent so that it could be programmed for use with other components. The instruction manual was quite detailed and explanatory and there was no real difficulty understanding all the features that the Kenwood had to offer.

**SOUND QUALITY**

The Dolby Pro Logic circuitry was enhanced by the Kenwood centre speaker

and it was immediately noticeable that clear, undiluted and well modulated dialogue was reproduced accurately, albeit with a slight degree of blandness. I found other speaker arrangements were also favourable and at no stage was it a strain to catch what was being said.

The response of the front speakers was very wide and the soundstage in front of me was dramatically increased beyond the confines of my room. The interaction between the front and rear speakers was also good as they succeeded in producing a balanced and three-dimensional sound. The Kenwood performed particularly well in terms of integration. All the speaker outputs blend very well and it is easy to become engrossed in a film and forget all about the fact that speakers surround you.

The Kenwood also scored well by producing good soundstage height and the centre channel maintained clarity. The Kenwood's strength lay in the way it allocated the different parts of the surround sound signal to the relevant loudspeakers. This made the three dimensional performance very coherent with no phasey effects that would otherwise distract the listener. The front and rear effects were totally clear and only very occasionally did they become muddled.

The Kenwood always had pace, speed and instrument separation well under control, but its lack of power and detail with fine musical passages could sometimes leave it sounding a trifle confused. Low frequency rolling resonant passages

**The Kenwood has pre-outs for front, rear, centre and subwoofer channels allowing the use of up to four external power-amps.**



could slightly distort, even at low volumes, which was the only real and glaring fault the Kenwood exhibited.

The DSP modes worked very well on the Kenwood, but the functions were quite limited in comparison to the others in the test. I did not feel that this was a major disadvantage though, since it's more important to get a few functions operating properly than many that don't. The remote control allowed the features to be scrolled through, but the display panel on the amplifier was a little too small to be seen from any distance.

The Kenwood translated into use as a two channel stereo amplifier well. The music was sharp and well focused, with a good sense of pace. The unit also recreates all the essential components of depth and image from recordings; I felt that it was one of the best units on test for quality hi-fi reproduction through two loudspeakers.

There were slight inconsistencies in the lower mid and upper frequency ranges but difficulties here were minor. The upper midrange could be a little piercing and direct, but the mid range cruised along well and overall I felt that musicality was apparent in this unit. At high volume the unit starts to lose control and it can become a little rough, especially with transients. However, this only occurs fleetingly and distortion only starts to raise its ugly head as the volume knob moves up to a position just short of maximum.

Phono reproduction was also quite musical. Channel separation was adequate, but like most of the amplifiers the unit did not add to, or express the information from LP with anything other than technically correct clarity. All the same, the '8500 did prove that it has a broad range of skills and that it was capable of producing enjoyable results through two conventional loudspeakers.

**CONCLUSION**

Kenwood have done well in producing a good all-rounder. The Pro Logic was clear and precise, and fine musicality with standard hi-fi sources ensures that the unit's skills are not confined to AV. Ease of operation was good, the small size of the luminous screen being a minor problem.

Here's a solid performer. If you are looking for an AV unit that interfaces with hi-fi separates, the Kenwood KA-V8500 definitely fits the bill.

Pioneer have moved heavily into the AV market place by re-launching Laserdisc, which they claim is a rugged AV source able to produce CD quality sound. Their VSA-701S AV amplifier partners the Laserdisc range and at £449.95 is the most competitively priced model on test here. It boasts Dolby Pro Logic and DSP modes and comes complete with an intelligent remote control unit.

Much like the others, this unit has a large black fascia featuring tone controls and a display which provides visual confirmation of the source selected and which surround mode is in operation. Phono jacks are mounted on the front panel for an auxiliary input. It has less DSP features than its rivals but is simple and straightforward to install. The Pioneer drives five channels, but the mono centre channel can be switched to driving dual centre speakers. The main channels are connected via screw terminals while the centre and rear channels use clamp terminals.

A test tone function is installed to set the speaker balance and the delay can be calibrated in slightly crude steps from the remote control unit. The instruction booklet is brief, but it explains all the main features. However, it does not enter into massive detail or expand on the workings and theory of DSP or Pro Logic.

The display of the Pioneer is very small and it can be difficult to read from a distance. However the clear layout of the remote control unit partially compensated for this. All of the inputs and outputs of the unit, with the exception of the auxiliary jacks on the front panel, are nickel plated. This, and the quite tacky build quality of the Pioneer indicate the areas where corners have been cut to keep the price as competitive as possible.

### SOUND QUALITY

Once installed, the amplifier performed very well in the Dolby Pro Logic mode. Effects swirled convincingly from side to side, and from front to rear with plenty of realism. I was aware of echo effects around the room and the soundstage seemed full and even. Delicate placement of each sound was a surprise and background music was an unobtrusive companion, blending in well with the other effects.



**PIONEER VSA-701S**

**£449.95**

The sound generated by the Pioneer flowed dramatically and at moments a frightening amount of detail and clarity became apparent to me. The overall musicality of the amplifier was good in Pro Logic mode, speech being the only weakness. There was a slight loss of definition in vocal transients and the Pioneer was a little confused by multiple vocals. This was the only blemish of the unit. Otherwise it enveloped me with a blanket of surround sound and the soundstage was as good as any of the other units.

The action effects seemed slightly bright, but Pioneer's amplifier had plenty of pace and didn't seem to be lacking in power. With any film possessing a high action content, it ranked as one of the most exciting units on test.

The main strength of the Pioneer with Dolby Pro Logic mode was its total envelope of sound. There was always plenty coming from all around the room and this helped to cover up the slight lack of exact definition in the lower mid and high frequency ranges. The unit fared quite well with non-Dolby software and the general feeling generated was one of a non-stop, no frills, punchy performance.

The DSP modes are basic in comparison with other units and there are far fewer functions and settings to experiment with, but the functions it does have performed well.

It was when used in conventional

stereo or two-channel mode that the Pioneer '701S came across as bright over the treble regions. Its high frequency output was lacking in definition and there was very loose tracking of the music. Both power and transient response in this area seemed limited, giving the Pioneer problems in conveying a musical presentation with strong vocals and high frequency content.

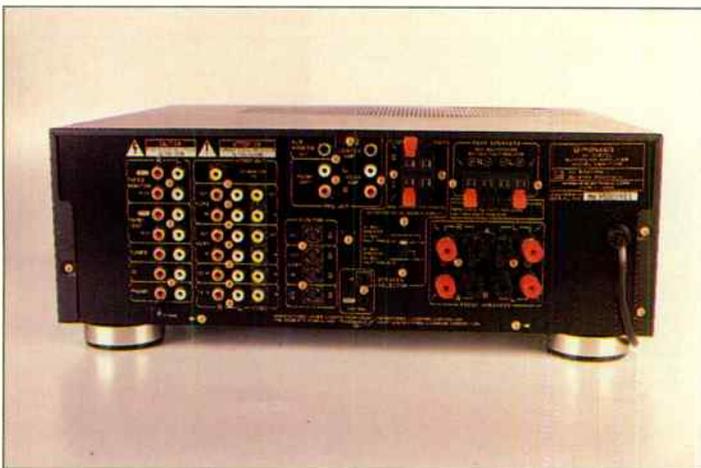
The mid-range was far better defined. Here the Pioneer managed to sound reasonably musical, flowing along with far less effort. The lower midband and the bass end were not as good though. The amplifier let the bass run free, orchestral crashes possessing deep bass content causing particular panic for the amplifier.

The phono stage of the amplifier could only be described as uninspiring. Reproduction of LP seemed to be missing whole chunks of detail. Playing Elaine Page singing 'Memory' from Cats showed that all the Pioneer could offer was a sad reminder of the original, so unequivocal was the way in which it reproduced her superb voice. Treble was blunted and lower frequency detail seemed to have been crudely removed.

This amplifier did manage to produce a wide sound stage, but there was not much depth. Stereo separation was good across the sound stage and absence of cross-talk an advantage that the Pioneer had exhibited in all modes. Overall, the hi-fi sound quality of this unit was lacking in relation to its competitors, the phono input suffering most. With music centred in the midband, reproduction was much better, but the Pioneer does not do well when it has to deal with low and high frequency content or transients.

### CONCLUSION

The Pioneer VSA-701S was a good solid AV performer; its Pro Logic playback is exciting and forceful, enhancing films well. However, it does somewhat restrict itself to this role, as its hi-fi reproduction is not on the same par. The unit offers very good value for dedicated AV use but it does not have sufficient hi-fi pretensions to be considered for use as both an AV and a traditional hi-fi amplifier.



Nickel plated sockets indicate one area where cost has been cut to make the Pioneer competitive, a subwoofer output is provided though.



**SANSUI AV-7000**

**£899.99**

After difficult times Sansui are aiming to restore their stance in the hi-fi marketplace. The AV-7000 is one of the most expensive AV amplifiers on test at £899.99, but Sansui claims it has been designed to fully complement both AV and hi-fi stereo systems. It powers five channels and is capable of driving dual centre channel mono speakers, a switch on the back of the unit setting the number of central speakers being used.

The front fascia of the unit has an abundance of controls for standard features such as tone and input selection. Compared with the other units it appears cluttered and it struck me as looking a little dated too. The unit has front panel connections for an external AV source, such as a camcorder. All other connections are at the rear of the unit, along with screw terminal connections for a maximum of six speakers. Although its display is small in comparison with the others, it clearly shows the input selected. Sansui provide an intelligent remote control unit which covers all modes and functions; it also operates a motorised volume control.

The instructions were quite straightforward and before long I managed to set the required balance by use of the test tone function. Setting the delay time for my environment was carried out with reference to tables in the instruction booklet. Although this was easily accomplished, it wasn't as accurate as some other units, simply because the Sansui only allowed calibration in five millisecond jumps. The '7000 has four DSP modes in addition to Pro Logic and the effects of each are well detailed in the instructions.

### SOUND QUALITY

Selecting the Pro Logic mode, I powered up the source and initially everything sounded favourable. The Sansui hit me with power and good dialogue clarity. The sound was bright and displayed tonal colours, making vocals seem both clear and natural. However, the amplifier seemed to be lacking continuity in the lower mid range.

I found I could quite happily sit back and enjoy the surround effects too. They

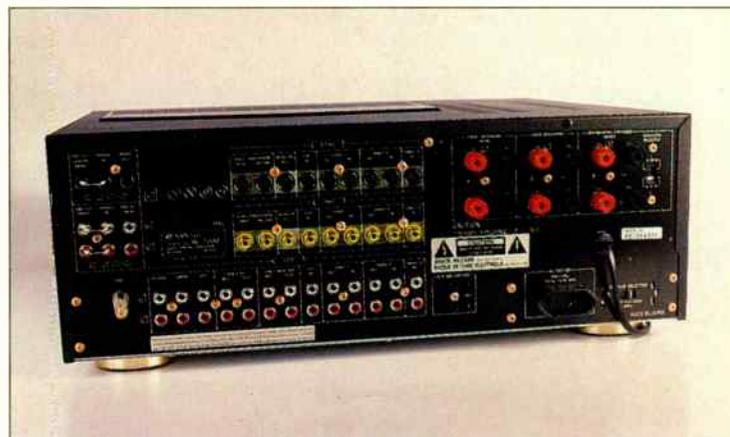
were very real and the action moved around the room in a convincing manner. All the same, I was never quite removed from my chair and placed within the action. Although the amplifier did well to keep up with the fast and hectic pace, it sounded strained doing so. Background hiss became a little too audible and everything with the exception of speech could on occasion seem slightly vague. The definition of musical passages was also a little unrefined and the sound produced never really seemed to match the visual excitement relayed by the screen.

The Sansui kept a reasonable grip on the loudspeakers right across its volume range but sudden transients, like a punch or bang, disturbed the unit and sent it momentarily into strain. General effects were acceptable, seeming reasonably accurate, but where individual sounds were placed on top of underlying action the amplifier became strained once again and musicality suffered.

Overall, the unit seemed a little unexpressive in its musical ability. When dealing with John Barry's sound track to 'Dances with Wolves'; I thought it verged on sounding bland and lacking in atmosphere. Although it rarely ran out of power, it did occasionally lack refinement and overall harmony across the musical spectrum.

The Sansui has four DSP modes and three-channel Dolby stereo but none of these were remarkably exciting. The Matrix mode adds quite a bit of life to non

The neat layout of the Sansui's input/output sockets made wiring easier than you would imagine.



Dolby video software, but again its faults creep in and the overall impression is of a reluctant performer. The Sansui produced all the required effects, but at no stage did it produce a bonus of excitement or take you away for a reward of total escapism.

The DSP does not seem to liberate any unknown quality from the music, nor does it really produce the wealth of different effects that certain other DSP units are capable of. It just seems to basically alter the timing of each component of the music out of each speaker to produce echoes and a basic quadraphonic environment.

Moving to straightforward hi-fi reproduction the unit does far better and the sound was much clearer and more enjoyable. There was some loss of control in the bass; it was not especially tight and bass tended to wander too freely as a result. Through the mid and treble there was good clarity and resolution of detail. There was slight distortion to be found in the upper midranges and treble but this fault was not glaringly obvious.

Stereo separation was not particularly strong, images appeared a little too central and narrow, but they were not totally confined to a mid speaker position. Musicality missing from the Pro Logic circuitry returned once again within two channel operation. The Sansui seemed far happier to deal with just half the load AV stacks upon its back.

The phono stage provided the most pleasant surprise that this amplifier had to offer. It was refreshing to see that effort had been applied with what is now a neglected input. Imaging, clarity and depth were all abundant and very tight tracking of the music was portrayed through clarity and poise; transients came across well. It was here the Sansui offered dynamic and musical reproduction.

### CONCLUSION

Used as a conventional amplifier the Sansui turned in a very respectable result. The AV side was good with vocals and dialogue, but any musicality it possesses is given little chance of reaching fruition in either Pro Logic or DSP modes. For this reason the AV-7000 will be best suited to those who listen mainly to normal hi-fi sources but wish to have surround sound capability for occasional use.

Sony's approach to the ideal AV solution is not in the form of an integrated AV amplifier. Their product is instead available in the form of a pre-amplifier-decoder and a multi-channel power amplifier. The TAE-1000 decoder costs £699.99 and the TAN-220 power amplifier a further £229.99, bringing the total Sony package cost to £929.98.

The Sony decoder unit, or pre-amp has a large display that is easy to read from a distance. It has a comprehensive set of features including Dolby Pro Logic, nine DSP modes and a complete set of options to alter delay time, equalisation and so on. The initial set-up of this preamplifier was quite straight forward, the instruction manual being more than adequate.

The first problem I encountered was in trying to make a connection to the power amplifier; the latter could only drive two or four channels (there was no output for the centre channel). This made it necessary to use the internal speaker within the TV monitor, or a separate power amplifier altogether. This was particularly disappointing because the Sony had a wealth of features installed on the pre-amp that the power-amp could not properly exploit. I found that using a second power amplifier with a dedicated centre speaker system produced the best result.

The speakers were balanced using the in-built test tone after which the Sony performed well with Pro Logic. Dialogue was very clear and the allocation of the sound between the speakers was nicely balanced. I felt that the clarity, pace and tight tracking of the sound during action sequences was where the Sony did best.

## SOUND QUALITY

The Sony had a direct and powerful presentation. The correlation of the sound with the action on the screen was excellent. The atmosphere evoked was bright and detailed and I felt that the landscape of sound produced was reminiscent of the better equipped the Cinemas I have visited. The background music did not qualify for such acclaim, sounding stained and unmusical across the whole frequency range. In certain films, I felt that the blemished quality of orchestral music detracted from the overall cinematic experience.

I found the DSP modes and features entertaining and interesting and I was able



**SONY TAE-1000/TAN-220**

**£929.98**

to generate some very interesting (but not necessarily musical) effects. A memory function allows these user defined preferences to be set. The visual display worked well, showing graphically what frequencies were being altered to tailor the sound. The full function intelligent remote control was also well designed and the display on the unit echoed each request entered in, which I found particularly useful.

The sound quality generated by the Sony power-amp was not, however, on a par with the high standard that the decode logic pre-amplifier had set. To gain decent levels of volume the attenuators on the power amp had to be set to minimum, allowing full sensitivity, which resulted in a small amount of hiss. The power-amp had a smooth midrange and managed to construct an impressive arena of sound, but the low bass notes seemed strained. The high frequency content of some sound tracks could get a little rough edged, but never became too uncomfortable. Sharp transients also caused the Sony trouble, with solo instrumental parts such as the strumming of a steel guitar done little justice.

Using the Sony units in normal hi-fi stereo mode was initially complicated. To gain maximum power for both channels of the power-amp it was necessary to re-configure the input and speaker connections. It basically involves completely rewiring the rear panel connections. Hiss was audible at moderate volume levels before the music program started which put me off a little, being used to the

silence of CD. The vocal content of the music was well projected but I felt that there was no contour or modulation in the vocals. Equally disappointing was the lower mid and bass; the Sony did not reproduce these parts well, bass notes in particular coming across as ragged.

The phono input sounded muffled and there seemed to be a lack of definition in the lower midband. High frequency content, such as the crashing of a cymbal, became bland and lifeless. Image and stereo width suffered badly with all inputs. For what is termed a 'surround sound amplifier' it was disappointing that the Sony could only generate a small, flat plane of music in normal operation.

This unit does not do well as a hi-fi amplifier but I felt that its pre-amp/decode unit was being let down by the power-amp. I tried using different power amplifiers and this improved the two-channel sound marginally. Using separate power amplifiers coupled to the decode unit enabled the Pro Logic to reach levels of performance beyond that achieved by the Sony power-amp. Most of the faults disappeared and an improved standard for surround sound was established.

## CONCLUSION

The Sony has a very capable and advanced pre-amplifier that really excels with surround sound to complement films, and its DSP modes are ample for good entertainment. The allocation of the music to different loudspeakers and the movement of action around the room was first class, but the performance was not enhanced by the power amplifier. It's a weak link that makes hi-fi reproduction fall down and with the tedious rewiring required, renders the Sony combination unsuitable as a two channel stereo amplifier.

The Sony units are best judged individually. For an impressive home theatre dedicated to AV, the pre amplifier decode unit should be short-listed. When coupled with different power amplifiers its cinema performance was in another league. Together with a host of DSP features it makes the TAE-1000 preamplifier an exciting product in the AV marketplace.



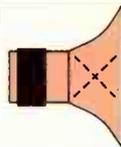
**The Sony pre-amp-decoder has optical and coaxial inputs for its internal DAC. The power-amp has no output for a centre channel.**

*L i s t e n i n n*

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# CONCLUSION

*"An AV amplifier should be a balanced combination of hi-fi sound and surround effects"*

value for someone wishing to create a home entertainment centre on a budget. Its exciting AV performance helps compensate for its lack of refinement with

two best all rounders in the pack. They drive the full range of channels required and have a good spread of features and DSP modes. They also cope very well with straight hi-fi audio reproduction. Happily, both embrace the concept of hi-fi effectively, whilst also catering for a wide range of other roles

The Kenwood is a bright and breezy performer that aims to cover all of its tasks with character. It succeeds in this aim and is a real winner when it comes to Dolby Pro Logic. Its DSP functions are not immensely complex but the option to tinker with various effects is included. It suffers from a slightly bland appearance, but the Kenwood scores well at being fully compatible with conventional play-back of records, CDs and other audio sources.

The Denon also covers its multiple roles well. It is the most aesthetically pleasing of the bunch and its operational simplicity ensures compatibility with any existing system. It can be a little flat at times but the Dolby Pro Logic performs well, and the DSP modes strike the best balance between entertainment and functionality. Sound quality was adequate, but not exceptional. The Denon places plenty of emphasis on sound quality and it establishes itself as a fully compatible amplifier for all purposes.

All of these units are fun to use, bringing out new dimensions in viewing films but they only overlap slightly with the

The six products on test all offer a different solution to the growing demand for hi-fi amplifiers with AV capability. The products range from £450 to £930, but surprisingly price does not reflect the performance of each unit. I evaluated how well they reproduced surround sound and DSP effects and also their performance as a hi-fi amplifier.

None of the units offered the audiophile sound quality that an equivalently priced, hi-fi only amplifier could offer. Perhaps this is only to be expected, but some came considerably closer to combining both roles successfully than others.

The JVC performed well as a receiver and came equipped with a large range of DSP modes, but failed to sonically excel. Its surround sound performance was



especially disappointing. It was packed with features, yet the inability to drive five channels left me needing a suitable monitor equipped for sound or a separate amplifier and speaker to enable it to operate at full capacity. As the most expensive integrated unit it had the most complete and expansive range of features, but it did not really have a firm footing in either conventional audio or in AV reproduction.

The Sansui fared very well in terms of hi-fi sound quality but it did not quite generate the excitement or pace in surround mode. It is a well built and engineered unit, but in comparison with the others it's appearance was dated and its AV performance was not quite as advanced. Should your emphasis be firmly on sound quality, the Sansui can be seen in a better light, but not if it is considered to be a true AV amplifier.

The Sony pre and power combination also suffered from the absence of a centre channel output, but it established itself as possessing the most impressive set of features and modes. It fared exceptionally well at delivering a full matrix of surround sounds but the accompanying power amplifier caused it to fall down in terms of sound quality. To operate with two channels for normal listening involved re-wiring the inputs and outputs of the power amp! The Sony did however produce good AV results but it had very little cross compatibility.

The Pioneer represents very good



conventional hi-fi reproduction. It may be slightly behind on the number of features and gadgetry it possesses, but the main AV function and Dolby Pro Logic work well, adding excitement and imaginative dimensionality to the listening environment. I would fully recommended this unit, should your over riding requirement be for Dolby Pro Logic play-back on a budget. The four amplifiers mentioned so far did not quite manage to perform really effectively across the board. An AV amplifier should be a balanced combination of hi-fi sound and surround effects; none of the above managed to get the balance quite right. The remaining two amplifiers were much better all round performers and represent a far better cross fertilisation of AV technology with conventional audio.

The Kenwood and the Denon are the

concept of traditional hi-fi. AV is a worthwhile investment but if you are a dedicated audiophile be aware that the price you pay is for AV performance and multi channel features, not solid hi-fi reproduction. Although some of the units do well in both areas, none can claim to be masters of both ●

## MEASURED PERFORMANCE

### POWER OUTPUT(MainChannels)

DENON	96 watts
JVC	153 watts
KENWOOD	66 watts
PIONEER	72 watts
SANSUI	85 watts
SONY	40 watts

It might not look like a million dollars, but Magnum's IA.120 integrated amplifier only costs a pound coin under £250 and it's worth every penny. Especially if you - like me - are a fan of John Lee Hooker. This amplifier is built for his kind of Blues and his kind of voice.

What was good for Jesse James was good for women. Two Mary's - Black and Chapin Carpenter - came out pretty well. In both cases there's something implicit in the Magnum, call it a *joie de vivre*, that keeps simple vocals and instrumentals big, joyful and sounding very much alive. For this, yes, it is well worth handing over your £250.

### Ambience

Common to all three recordings was the surprising clarity of ambient information around and behind the musicians, not a semblance of obscuring haze or mist. It is not often that you sense the size of a recording studio, the physical presence of a singer, or the band, through an amplifier in this price bracket. Better still, to have such a sense of enjoyment and pleasure is a surprising bonus, even though there are plenty of good quality amplifiers around to form the Magnum's competition.

While it's supreme with relatively small-scale recordings, it's not one to shy away from Rock music either. I was very taken by Prince's *Diamonds and Pearls*, an album I've heard often enough for it to present a difficult proposition when refreshing my jaded palate. But refreshing it was: very taut, very quick and dynamically powerful. There may have been some subtleties of the mix glossed over - this is not an overtly analytical amplifier - but in the general excitement not enough to be noticed. James' *Seven* was equally forcefully driven, with an exceptional amount of clarity, the music simply flowing through the performance like a sparkling river of Perrier.

So far, so good. However, listen a

little more carefully and an awareness creeps in that while all this is very believable, it's not entirely truthful. When Prince turns falsetto, for example, anyone not in the know would think he'd changed sex as well. There are undertones and overtones in the upper mid and lower treble which enhance some aspects of the music, and slightly unbalance others. Dr John's voice, for example, on 'Goin' Back To New Orleans', had a muddier texture, more closed-in, with New Orleans and Gumbo burning his vocal cords. All the same, instrumentally the tracks raced along with splendid fluency.

Turn to orchestral music and the same strengths of pungent dynamics, speed and fleetness are still to the fore. Haydn's *Symphony No 41*, played by Tafelmusik on authentic instruments, didn't lag in the least,

recording coming through as the deep three-dimensional 'concert-hall' image Chandos particularly strive for. No complaints at all in this direction. Indeed, the Magnum's sense of dimension is very hard to fault at its price, superior to a good many rivals.

Now, though I've enthused over the IA.120's speed and its dynamics, it's not always equal to the demands made on it. The larger the orchestra, the greater the dynamic range required in a climax and the Magnum momentarily produces a sound almost like compression. Great choral climaxes take on something of a muddled indistinctness, though it's momentary. As the pressure eases off, the sound opens out and the tonal colour broadens again to the amplifier's fundamental munificence.

It's an effect not entirely restricted to Classical music, because it could be

# A Magnum

Eric Braithwaite pops the cork

with as much of the flavour of folk rhythms in the sprightly andante and trio as could be desired. Homs - as they were in Grieg's *Symphonic Dances* on Chandos - were superbly throaty, warm and full. So was woodwind, perhaps a little overly rosy in hue, but eminently desirable.

Where I would query the Magnum's tonal colour, however, is in its representation of violins. This section of the orchestra - be it Grieg, Mozart or Beethoven - lacked real scope in tonal colour, with early-period instruments turning somewhat acidic, almost synthetically astringent.

On the simpler scoring of Grieg's *Six Songs*, this was less noticeable, the soprano soaring, the orchestral tutti swelling magnificently and the

heard on Rock music where the producer was either over-enthusiastic in producing a melting-pot of effects, or instruments or samples are patched in en masse, to fill out the texture. In this case - heard on certain tracks on James' *Seven* - the overall focus softens, the pace stumbles, though it's barely noticeable - and textures become thicker.

Best results were obtained from a pair of briefly borrowed Rogers LS2s, where the Magnum's deep soundstage burrowed well back, the warmth and fullness of the mid-range was given its full scope and the synthetic edge on strings satisfactorily softened. Given that experience - and the Rogers sounded better, tighter and more firmly focused than I've

### MEASURED PERFORMANCE

An output of 66watts into eight ohms and a very respectable 110watts into four ohms makes the compact dimensions of the IA.120 deceptive. It will go healthily loud with a wide variety of loudspeakers, including low impedance types. In this respect it offers a lot of punch, good power supply regulation keeping internal line volts up under heavy current delivery.

The output stage uses Texas Instruments' high current (25A) output transistors in complementary pairs. The mains transformer is, surprisingly, less massive than some, but obviously up to the task allotted. Fuses protect the power lines and a high quality Alps volume control potentiometer has been used. These are well matched between channels and have

a long life. I was surprised to see that Magnum haven't used the ubiquitous NE5534 for the disc stage, but have opted for an OP37 high precision, high speed, low noise op-amp instead. We have no experience of this, but it potentially offers a different - perhaps better - sound with disc.

Magnum's literature refers only to a moving magnet input on disc, yet the IA.120 also has a x10 gain option which increases the sensitivity to provide for moving coil. Whilst MM is very quiet, MC was not quiet enough, even when taking gain into account by judging equivalent input noise. It should be used with high-ish output MCs or faint hiss will be heard. And this, Magnum implied, is why they don't draw attention to the facility. Most manufacturers aren't so restrained, hoping

reviewers won't notice - and arguing the toss if they do.

The disc stage was quiet on MM, had good channel separation, sensitivity, overload and low input capacitance. Although low frequency gain rolls off below 20Hz, the IEC 5130µs time constant for warp filtering hasn't been included. Our first sample had incorrect RIAA correction, which resulted in rising treble. We pointed this out and got a revised unit that had correct disc frequency response.

The other inputs (CD, tuner, aux, video and tape) were all sensitive, needing 200mV for full output. This is low enough to accommodate all sources and will even do justice to a Leak Troughline. I liked the presence of a mono button and a tape monitor button too.



# With Bottle

for Magnum's IA.120.

previously heard them - speakers of the LS2a2 or Mission 760i breed would probably make good partners. Anything more exotic would perhaps require a degree of caution.

Magnum have not avoided black-disc users, either, though they are rather coy about the disc stage's moving coil capability, which can be switched in by poking a small yellow button through a hole near the ground terminal on the rear. This wasn't by any means a disappointment, smoother at the top end than the line inputs, the focus just that bit more plummy. It did, however, achieve, despite sounding more subdued and gentle, an almost equal breadth and depth of staging.

The IA.120 offers one of the

liveliest and most entertaining sounds - despite its relatively minor faults - from almost any integrated amplifier I've heard in the last year. Now, what else do you buy for the price of ten days in Malaga or a weekend in Malibu?

Substantial construction is one thing. The IA.120 is sturdily built, not in the least a piece of cheap, bent tin. There are no tone controls, but the balance knob has a centre detent and the volume knob revolves smoothly, with just the right amount of firmness to the touch. The selector knob also clicks round unhesitatingly to select from six inputs, including disc. Usefully, there's a tape monitor button, a mono switch and a muting control. All that's left on the black fascia with its gold lettering and

coach-trim line is the power-on switch, associated small orange LED and headphone socket. Fuse protection is more than adequate, supplemented by automatic cut-outs if the temperature rises too high. Connections are by gold-plated phono sockets and reasonably chunky binding posts for the speaker cable, with an IEC socket for the mains. Unlike so many of its brethren, the Magnum weighs a value-for-money 5kg.

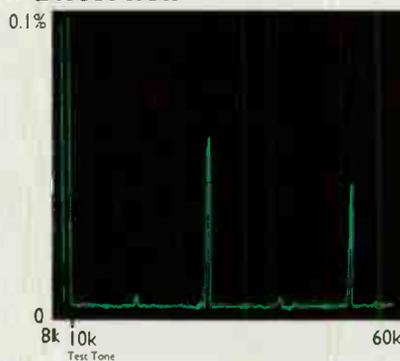
It might not be perfect, but Magnum's IA.120 is a real breath of fresh air. Maybe Arcam's Alpha 3 is more controlled and tidier; maybe Sugden's A25B has more even tonal colour. But this is a vivacious, enthusiastic, spirited amplifier that conveys the spirit - if not the exact letter - of the music so well, so often, it should be a breeze to sell. It's a much needed alternative to its compatriots, without emulating them or turning copy-cat. It has a style all of its own and, if John Lee Hooker heard it, I reckon he'd probably buy it ●

The output stage is distortion free across low frequencies and the mid-band, but odd order harmonics (3rd, 5th, etc) appear at high frequencies, at low and high output levels. My rule of thumb is that to be acceptable overall distortion should measure not more than around 0.1%. The IA.120 measured 0.06% at 10kHz, at low or high outputs. This is quite likely to make itself known as a slight sharpening effect in the sound, adding a clean but well defined edge to transients, making for a 'fast' presentation. If the harmonics are present because feedback has been limited, then a better sense of openness and dynamic ability might also exist. The sturdy power supply may act to give the sound some muscle; I wouldn't expect the IA.120 to come across as warm, rounded or soft.

## AMPLIFIER

Power	66watts
CD/tuner/aux.	
Frequency response	18Hz-50kHz
Separation	67dB
Noise	-99dB
Distortion at 1kHz	0.008%
Sensitivity	200mV
dc offset	0/0mV
Disc MM	
Frequency response	17Hz-80kHz
Separation	60dB
Noise	83dB
Distortion at 1kHz	0.008%
Sensitivity	2.4mV
Overload	120mV

## Distortion



Odd order harmonic distortion appears at high frequency, but measured only 0.06% at 10kHz, all the same.

# Frequency Maestro

**The Arcam 280 tuner is the latest addition  
to the Delta range.**

**Eric Braithwaite assesses its pulling power.**

**A**rcam have been busily building up their armchair range, the new remote-controllable Delta series. If you've been paying attention, you will remember the recent review of the Delta 290 amplifier. Its partnering 280 tuner is also remote-controlled; that is, if you buy the optional system handset which will deal impartially with CD player, amp and tuner. I can't vouch for its effectiveness with the tuner, even though I shook the box hard in the hope someone had put one in for me. I had to exercise my leg and finger muscles instead.

**Generous**

Where I hope the handset would score over the primordial human digit is in certain aspects of the 280's operation. Arcam have been reasonably generous in offering twenty programme memories, though nearer where the sun rises, thirty and forty are not uncommon. The 'Store' button is over with the Up and Down tuning pushbuttons on the left of the display, while the 'Shift' control - needed to access double figures - is on the right with the numerical keys.

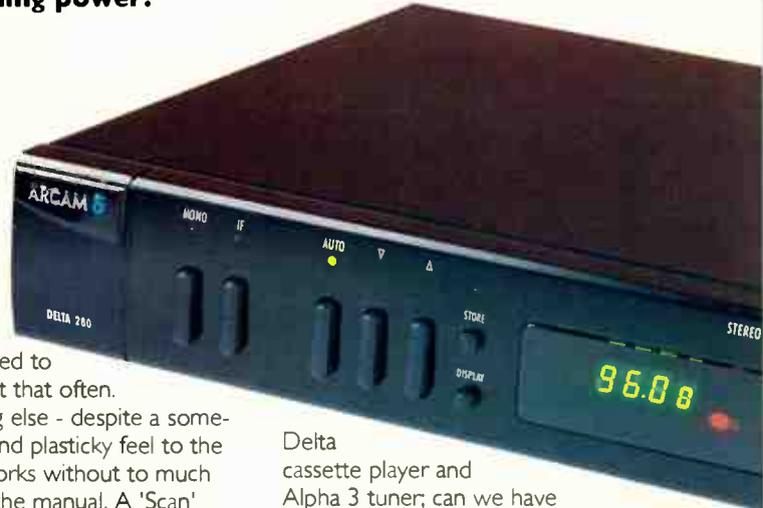
The memory seemed to me a bit slow on the uptake compared to rivals but then, you don't need to programme it that often.

Everything else - despite a somewhat loose and plasticky feel to the switches - works without too much poring over the manual. A 'Scan' function plays five seconds of each preset station in turn, in case you've forgotten what half of them are. The best time to try this is the minute before and after the hour, to catch the Station Identification. I don't know I'd be able to tell the difference between Radio 2 and LBC phone-ins on just five seconds' worth of exposure. You have to recognise the frequency - that's where RDS comes in handy by showing the station name, so why have the Brits - in this instance Arcam - not come round to providing this yet when the Japanese chuck it in for £170 these days? Who

invented RDS in the first place?

Additionally, there's a 'Mono' button - less hiss-absorbing than I expected - an 'IF' one for when stations are too close together (see the Measured Performance section) and another to switch the display off. Couldn't tell the difference, sonically, to be honest. 'Auto' scans through the FM band (no AM even though the letters are in the company name) stopping properly at strong transmissions without being distracted by 'shadows'.

Arcam's display is informative enough, even if the signal-strength indicator is as inelegant an affair as the similar segmented affairs on the



Delta cassette player and Alpha 3 tuner; can we have something that doesn't look as though it's squares blocked off with a felt-tip pen, please? Quad have had something much better for years in the FM4 - which, by the way, was the reference in the listening session - and it doesn't cost so much more.

One disparagement deserves a counterbalancing compliment, however; both tuners agreed on the signal strength, so the Arcam's is an uncommonly realistic guide. Wisely, however, Arcam, in their usual sensible manual, suggest a good aerial; even with a better-than-average one on my London roof I could have

**MEASURED PERFORMANCE**

The Delta 280 had a good audio performance, but a few small weaknesses in its radio frequency (RF) behaviour. Quite whether they would be consequential to any user depends upon conditions of use. Our sample was insensitive, needing 40mV in stereo mode for the IHF specified -50dB noise level to be reached, or around 20mV more than other tuners. This low sensitivity value relates to another four elements on your aerial and as such renders it useless in weak signal areas. Similarly, the mono sensitivity was mediocre and, perhaps most significantly, so was the full quieting sensitivity. At 2mV the 280 needs twice as much aerial signal as rivals before hiss sinks to a minimum. Most rivals give a similar performance with just 1mV.

The selectivity performance of our sample was curiously unbalanced. Narrow band mode wasn't a problem, giving a balanced 72dB alternate selectivity figure, a reasonable value good enough for the U.K. (even though most tuners manage better than 80dB these days). Wide IF mode was problematical. It gave 62dB at +400kHz and 74dB at -400kHz - the latter being higher than Narrow mode, which doesn't make sense. I suspect Wide mode is meant to give around 62dB or so. The published specification says only that selectivity should be better than 60dB, a conservative figure our sample exceeded. This anomaly would show up only when trying to home-in on a weak station with a powerful one close by. Greater rejection occurs when the interfering station is of lower frequency than the wanted one,

rather than of higher frequency.

Arcam have fitted a meaningful LED signal strength meter. It lights fully at 2mV, when full quieting is reached. This means the display will usefully show whether an aerial is giving enough signal for best results. The next two green segments light at 630µV and 80µV. Below the latter figure the display indicates red, as it should. Any signal below 100µV or so is too weak for real hi-fi from any tuner. The 280 will show this, whereas Japanese tuners, which have misleading displays, will not.

The audio side of the 280 was a little more assured in its performance. Frequency response measured 5Hz-14kHz, the upper limit being set by the pilot tone filter. Our analysis shows how flat the response was between these limits, providing an even tonal balance. The upper

wished for something a bit better to lessen hiss on Radio 3 from Wrotham, or the burbles now infiltrating Classic FM.

Lastly, the back is adorned with an IEC mains socket, male 75 ohm aerial socket - which on my sample fell apart on unplugging the aerial lead - and two pairs of audio output sockets. One pair Arcam suggest can be used for direct connection to either a cassette deck or VCR to record the sound in Simulcasts. Some of these, alas, take the stereo sound feed from the video anyway, so if you have a good Nicam decoder in your VCR there's not much gained. Come to think of it, shouldn't Arcam be plugging their own Nicam tuner at this point? At last, the really important bit - the sound. For a tuner in this price bracket, the new

something more fiscally appropriate, because this is not primarily an analytical tuner itself. In the Arcam tradition, it paints a broad, warm picture more akin to the designs of a hand-woven rug than the more Gobelin tapestry-like finesse of the FM4. Especially appreciated, this, with the acoustic moments of simple Folk and Rock or - especially - Jazz.

On Jazz FM the Delta 290 offered a pleasant, romantically-hued 'Save Your Love For Me' from Nancy Wilson and Cannonball Adderley, but maybe I was a bit short-changed on Wilson's full dynamic range, which was just noticeably curtailed. Miles Davis' 'Flamenco Sketches' was equally appealing, the instrumentalists slightly scaled-up in size compared to the FM4, but with a good deep bass. Here, what turned out to be a particular trait was discernible: the

Delta homogenised the recording, squeezing the spatial differentiation between the instrumentalists, giving the players equal weight. Davis wasn't leading the band as determinedly as he should; the 290 produces a smoothly blended picture rather than a cohesive, analytical one.

Here, as on other broadcasts, for example, the piano and drummer appeared to have little space between them, although there was enough fine detail to be certain that brushed cymbals were being brushed, if not fine enough to count the bristles, as it were.

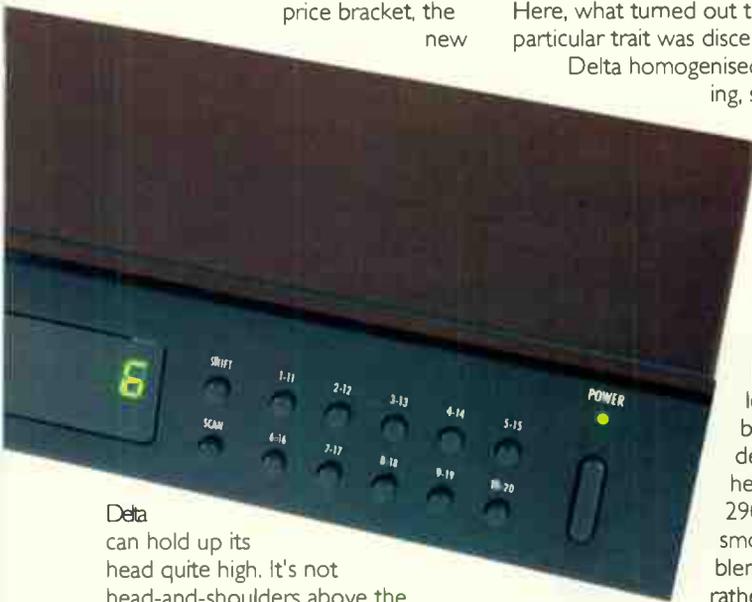
A bloom in the mid-range was just

enough to make any acoustic broadcast beguiling, especially with REM's guitars and Bob Dylan, whose notorious eight-foot guitar and six-foot harmonica were all too obvious on a track from the Bootleg album. There are slight tonal aberrations, though nothing too serious. Violin tone is coarser in orchestral broadcasts; the Delta was happier with Handel's Fifth Organ Concerto than Rachmaninov's Third Piano Concerto, for example. With Handel the Nash Ensemble was well spread out, if individually the players were a little blurred in focus, with a splendidly light and lively chamber organ. Even the organist's occasional murmurings à la Glenn Gould could be heard. In the Rachmaninov, however, the orchestral sections were a little too much of an amalgam, the full dynamic range of orchestra and piano not quite coming across. Between forte and pianissimo the piano receded rather than the volume diminishing and violin tone had a degree of coarseness to it.

Vocal colour, too was not quite accurate. John Hurt on Radio 4 had less of his distinctive hoarseness, Derek Jameson on a R2 phone-in had less of his cockney sparrer chirpiness, both sounding as though some of the chest resonances were missing.

**Value**

All the same, the Delta 290 is a good buy for under four hundred pounds, with enough of a euphonic character to make continued listening pleasurable. It encourages dropping in and out of the stations, whatever the music, with enough discrimination to make FM radio sound a viable source. Bear in mind, however, that the budget will have to bear the cost of a decent aerial and if you want to rest your legs, the system remote will put the cost up to four hundred-odd pounds. Ask the dealer, as well, to first give a good tug at the aerial socket to make sure it stays put ●



Delta can hold up its head quite high. It's not head-and-shoulders above the competition, but it's not dwarfed either. Straight out of the box, I might not have written that; it's a few hours before it settles into things. Once warmed through, it's like a cat - it feels well at home, even with a highish end Hera'd Argo pre-amp, £1400-a-pair Danish monoblocks and Quad ESL-63s. For normal, rather than analytical purposes I'd recommend

limit of 14kHz was satisfactory, although not as extended as that of some designs.

The MPX filter puts in a notch at 19kHz and 38kHz to eliminate pilot tone and sub-carrier respectively. They were well suppressed on the 280, ensuring good results when recording from the tuner.

Distortion was low at 0.1%, the analysis showing that this consisted of equal amounts of 2nd and 3rd harmonics. I wouldn't expect it to add much in the way of audible coarseness. Channel separation on stereo was high at 50dB in the mid-band and 34dB at high frequency.

The 280 has a good audio section, but I was unhappy about the RF side of things. It should have higher sensitivity and, ideally, more balanced rejection of unwanted stations either side of a wanted one. The

signal strength meter worked well which is some, if little, compensation. **NK**

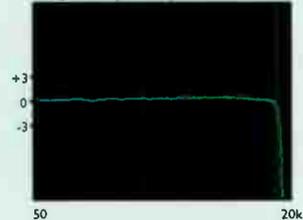
**TUNER TEST RESULTS**

Frequency response	5Hz-14kHz
Stereo separation	50dB
Distortion (50% mod.)	0.1%
Hiss (CCIR)	-71dB
Signal for minimum hiss	2mV
Selectivity (at 0.4MHz)	68dB
Sensitivity	
Mono	40µV
Stereo	2.5µV

**Signal strength meter**

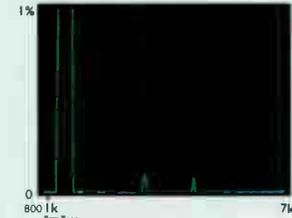
LED No.	level (µV)
1	25
2	80
3	630
4	2mV

**Frequency Response**



Satisfactory treble extension.

**Distortion**



Minimal distortion.

# Into the Valley of Death

As the design engineer responsible for the Canon S-30 I cannot let Eric Braithwaite and Dominic Baker's review published in your April issue pass without a reply, which I trust you will publish.

I'll start with factual errors. In paragraph two Eric criticises the S-30's predecessor, writing "there was no denying that its sonic signature was little better than mid-fi . . ." I could send Eric reviews from both this country and abroad which do deny that the S-50 sounds little better than mid-fi. I appreciate that these reviews are expressions of personal opinion, and Eric is entitled to his own, but his comment reads as undisputed fact and as such is incorrect. And, as if to reinforce the point, Eric mentions that the S-50 has "done quite well in the market-place".

In paragraph three, Eric describes the S-30 as sharing "the same fundamental design and constructional details as its older brother" (the S-50). Yes, it shares design features, but its construction is entirely different. In particular, the zinc die-cast reflector that Eric describes is in fact self-colour high-impact ABS from a polished injection mould. Can Eric really not tell metal from plastic? There is zinc in the S-30 but it is hidden inside in the form of a die-cast 'bracket' that holds the whole product together and provides rigid fixing for our S-30 stand and wall-bracket. The zinc itself is a zinc/magnesium/aluminium alloy called Mazac which Eric correctly if disparagingly describes as the stuff of Dinky Toys. It is also the stuff of high-end Philips CD transports, Weber carburettors, Stanley knives and up-market golf-clubs among many other items. It's a fine engineering material very rare (almost by definition) in the chipboard and hot-melt world of conventional loudspeakers, but ideal in the S-30 application through its rigidity, high mass and inherent self-damping.

Moving on to Dominic

Baker's measurements, while he is correct to presume that we have tried to optimise the impedance for low-powered budget amplifiers and stereo TVs, he has either his measurements or his interpretation (or both) of the S-30's impedance all wrong.

The way to optimise for budget amplifiers is to provide a relatively low impedance so that voltage sensitivity is optimised (but not so low that the amplifier's current delivery limit is likely to be reached) while making sure that there are no severe phase changes which might risk the stability of the amplifier. I have included an accurate Bode plot of the impedance of the S-30. You'll see that the nominal impedance as defined by IEC-268 is 6 ohms - nowhere near the 10ohms that Dominic 'measured'. You will also see from the Bode plot that the phase angle of the load is innocuous - swinging through less than 60° where the majority of the programme material is located (between 200Hz and 8kHz). Dominic is simply

*Canon to right of them  
Canon to left of them  
Canon in front of them  
Volley'd and thunder'd*

*Alfred Lord Tennyson (1856)*

incorrect to say that he loudspeaker presents a mainly reactive load to the amplifier and is as such problematical. How would he have known anyway without measuring the phase?



Dominic's pseudo-scientific analysis of the S-30's frequency response and dispersion is also questionable. Yes, the S-30 does display an upper-mid suck-out followed by a slightly raised plateau but these are pretty innocuous effects which largely even out if the

loudspeaker is measured using either room or anechoic front hemisphere averaging techniques (both far more accurate methods for assessing a loudspeaker's probable tonal balance than single responses in an unspecified environment).

I would, however, join with Dominic in questioning whether a flat single axis response is any arbiter of hi-fi quality - but that is, as I'm sure you appreciate, a subject in itself. Even so, this doubt didn't stop Dominic effectively labelling the S-30 as "not a serious loudspeaker".

It is ironic in paragraph four

that Eric describes giving the review pair "a chance" (why so negative?) by standing them out in the open. Why do I say ironic? Because the Owner's Guide which Eric would have received with his S-30s illustrates in a diagram that the loudspeakers should be positioned close to the rear wall. They are designed to provide a balanced response in this position whereas out in the open they tend to sound bass-light and upper-mid forward - just the characteristics Eric appears to have heard. He however chose to describe them in emotive terms of horizontal cellos, rail-road disaster movies and castanets that sound like clothes-pegs.

It is Eric's style of writing and his obvious prejudice against the S-30 and our design aims that disturbs me most about the review. Here's a few examples of writing which, taken at face value as any new reader will, suggest that Eric had made up his mind before he started.

"Some scrimping has been indulged in to keep costs down". Development of any consumer product is a compromise between features that the designer would like to include and features that can be afforded within the Design Brief. Eric's "scrimping" is in fact normally known as value engineering, an activity whereby the designer makes rational logical decisions on the relative genuine value to the majority of end customers of competing features. Yes, we could have included binding-posts (mainly to keep UK reviewers happy) but then we would have had to leave something else out. The Owner's Guide, maybe, Eric didn't need it!

Eric may not appreciate this, but "Those people who will persist in putting one loudspeaker on a bookshelf and the other on a window-sill across the other side of the room . . ." are some of the hi-fi industry's most valuable potential customers because they are probably newcomers. It is up to us as

manufacturers (and publishers) to try to satisfy their needs not to treat them simply as an imitation that will go away if ignored. New customers are the life-blood of the hi-fi industry and we in the U.K. have a history of failing to attract them with products that fundamentally answer their needs. The S-30 is one attempt to put this right. Patronising these people, whose spending decisions to some extent control the success or failure of both our businesses by demeaning their genuine needs, cannot make any sense.

Finally, Eric finishes off with a cheap joke comparing the S-30 to a lemon. All I can say is it takes one to know one.

**Phil Ward,**  
Senior Design Engineer,  
Canon Audio Ltd.,  
Woking,  
Surrey.

I did a quick poll of friends and none could imagine me as a lemon: a whole salad bowl and a pomegranate were two suggestions. I'll try to emulate a cucumber, however.

It didn't occur to me, for one thing, that mentioning Dinky Toys was a disparaging. Far from it: I assumed that a good many of our readers (being interested in classic cars and all kinds of vintages) would recognise that in new condition they sell for a mint, because of their superb manufacture.

Phil is obviously determined to negate a judgement which I hope regular readers will recognise as one reached after listening, not before due to prejudice.

Irrespective of whether a manufacturer finds my conclusions acceptable or not, I generally try to give a fair opinion of the sound of a product on musical grounds: hence if I write that castanets sound like clothes-pegs clicking, then that, I hope, is an accessible way of describing a coloration, one that people will understand.

I note that Phil effectively categorises the market for the Canons as I did - mid-fi buyers - for whom a stereo image of some kind, regardless of how the loudspeakers are placed is of more moment than the faithful reproduction of music. In this respect, I found the S-30s wanting, given that there are other - admittedly more conventional - designs on the market which satisfy musical criteria better.

I feel that people's needs are answered by being offered the highest fidelity at an affordable price. The parlous state of the hi-fi industry is, I strongly suspect, due to manufacturers in many cases giving buyers the impression that their "needs" - wholly defined by the manufacturer - are being wholly satisfied and they can expect no better.

New customers deserve to hear the best, then make their own decision on compromises they must face, according to their budget. Whether Wide

The problem of material recognition is a common one. It's impossible to be certain about many materials unless they are scratched - then the manufacturer complains about damage. The fact that the reflector is self coloured plastic is not consequential to the conclusion, however.

Eric placed the S-30s as recommended, was unimpressed, then pulled them out into the room. The report was written after listening; it's difficult not to let a bad

sensitivity. Opting for low impedance is the easy route.

The IEC-268 standard suggests an easy and consistent way of specifying nominal impedance, but the result isn't meaningful. It specifies that nominal is x1.25 greater than minimum. The S-30 has a minimum of 4.5ohms (DCR) which gives near enough 6ohms nominal, as you state.

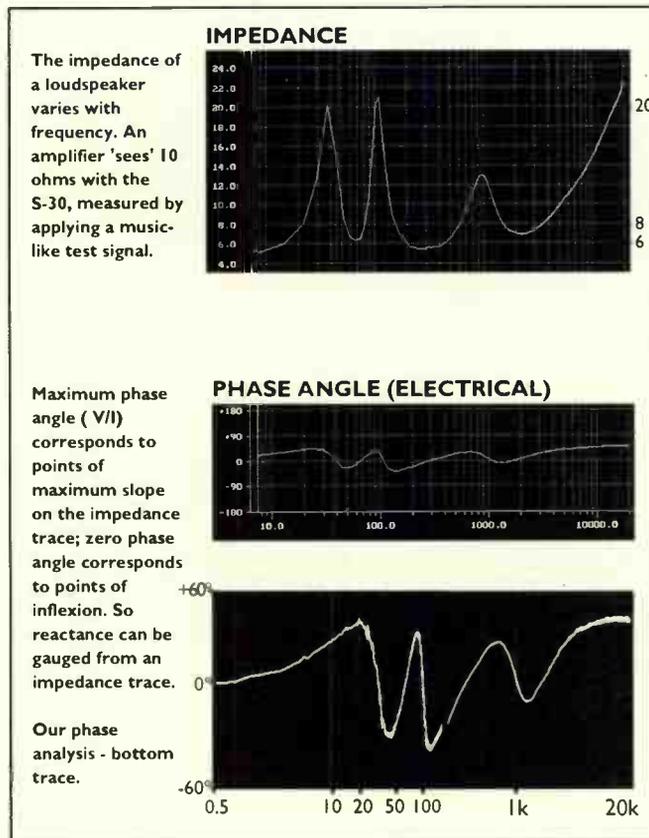
However, a glance at your graph, or ours in the original report, clearly shows the impedance trace lies mostly above 8ohms. It's quite obvious from this that the overall value is therefore greater than 8ohms, as far as music currents are concerned. Consequently, we measure overall impedance using pink noise. With the S-30 it was 10ohms, just as the graphs suggest. The 10ohms value is both meaningful and accurate, since it shows the value.

You should be aware that reactance in the load is greatest where rate of change of impedance (slope) in the modulus of impedance trace is highest. We published the graph, so the information was before your eyes. We also run a high resolution V/I phase plot (since the FFT gives phase information) to measure reactance, as shown here.

Few would agree that the on-axis response variations we measured are "innocuous effects". A room does not average out such variations and forward response averaging can be made to give any result desirable, it is so random. Direct radiation to the listener largely determines the basic sound balance of a speaker and conventional forward response measurements portray this balance accurately. Eric's comments show that he was upset by the response variations, ones that are only to be expected from a drive unit so simple and basic that it wouldn't generally be considered appropriate for hi-fi reproduction.

It was our view - and it still is - that the S-30 does not well answer the needs of newcomers, relative to less expensive but higher quality conventional rivals like the Goodman's Maxim 3 or Celestion 1.

We were all suitably entertained by your final admission that the S-30 is a lemon. We hope your next offering will be equally fruitful. **NK** ●



Imaging Stereo fundamentally answers the needs of the newcomer to hi-fi, the history of omni-directional loudspeaker leads me to doubt. The S-30 did not convince me - or others, I might add - on listening to it that it was the best compromise for newcomers. **EB**

That Eric believes the S-30 "was little better than mid-fi" is not a factual error, but an expression of opinion. Some people may like the S-30, but equally many don't. Sales in the market place are determined by many factors, advertising spend and appearance being two. Some may be swayed by the speakers interesting appearance and small size; we felt its sound quality/price balance was questionable.

experience colour one's viewpoint throughout an article.

"Scrimping" seems a fair enough description of a £150 loudspeaker possessing one small drive unit with a crude parasitic tweeter cone and no crossover.

Because low impedance results in heavy transient current demand, the general view is that budget speakers are best having an overall impedance that does not sink too low. KEF give their budget speakers 4ohms nominal impedance and their quality models 6ohms, for example.

A high impedance loudspeaker doesn't have to be insensitive. Good drive unit engineering can yield high energy conversion efficiency, which restores its voltage

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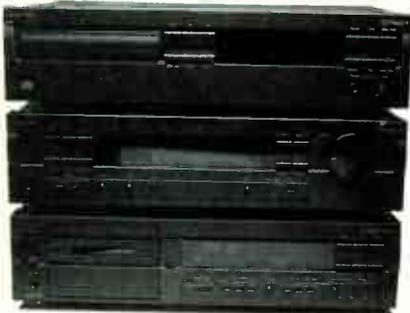
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**O**mni-directional loudspeakers - ones that fire sound out equally in all directions - are an idea of enduring popularity. In years of encountering them, I've never quite understood why they can become such a passion with their inventors, for they meet with only limited appreciation and success out in the real world. Sonab and a host of smaller names have come and gone, leaving the market omni-free by the end of the Eighties.

Canon decided to enter this empty arena recently and now we have just received a fascinatingly complex omni courtesy of Tabula Rasa, who are the British importers for this German design. Mainhattan Acoustics, a German loudspeaker manufacturer, put this prototype together and intend to use it in a finished loudspeaker later on in the year. But the drive unit will be offered to any other interested parties. It's visually sassy and, even though omnis don't excite me, I found its reproduction intriguing. This is the speaker Canon should have made, using their research skills to make it affordable.

### Why Omni?

What is it that attracts designers to omnidirectionality? There are two benefits, one very real, the other imaginary. The real one, easily achieved by any omni design, is elimination of the 'hot-spot' listening position. Omnis treat all listeners equally; wherever you listen to them - more or less - the sound is the same. So granny at one end of the sofa - hi-fi's symbolic sufferer - finally gets in on the act. She'll hear the same sound as someone at the 'ideal' listening position, which for the sake of this argument is in the centre of the sofa. Get up and walk out to make a cup of tea and you'll not miss a note: the highs will follow you to the door.

What you lose is image sharpness and, quite often, cohesiveness. How much of it you lose depends upon the individual speaker design and, to some degree, room acoustics. It was here that this 'speaker acquitted itself well as an omni, its single radiator cone giving quite reasonable images in terms of apparent location, if not in outline definition. The sort of hard etched, solid images you can get from a good, directional loudspeaker don't come from an omni, including the



speakers displayed.

In my experience, omnis often lack cohesiveness. Treble seems to bounce around the room, the midrange comes more from a forward direction - somewhere in front as it were - and the bass is often box-bound. It was here that the Mainhattans needed more work, for whilst they cover the upper midrange and treble regions well, upper bass and lower treble was in hiding, suppressing the characterful huskiness to Carol Kenyon's crooning on 'Dance with Me', for example. It was on tracks like this or - better known - Janis Joplin's 'Ball and Chain', that the strength and richness of the vocals was compromised. Instead, the speakers sounded bright and open, but a little too light to be convincing and, on occasion, a trifle spitty too.

Having worked hard to marry ESL63s into Celestion

# Omnipotent

**Noel Keywood opens his ears to an interesting omni-directional loudspeaker, with a difference.**

Mainhattan, yet it did set up a sufficiently plausible sound stage to hold my attention - and I am a dyed in the wall worshipper of images.

The imaginary benefit is that radiating the sound in all directions emulates real life sources and offers a more accurate portrayal of a band or orchestra as a result. This theory ignores the role of the microphone, which acts to capture just one small part of the radiating hemisphere of sound. It is that part which is then re-radiated toward a listener at home, a

process which in outline gives a reasonable representation of what might have been heard at a concert, multi-miking notwithstanding of course.

Bouncing this small part of the expanding sound hemisphere around the domestic living room doesn't contribute much to fundamental truthfulness at a theoretical level, yet in practice it does give an interesting illusion of openness, bringing a diffuse sounding form of dimensionality to instruments on the sound stage. This property, the Mainhattan

SL6000 subwoofers I well know how difficult it can be to subjectively integrate a light, fast drive unit, sans box, with a heavy bass cone, in this case one that is box-mounted. Mainhattan have misdirected their effort here, providing switchable electrical damping within the bass drive amplifier for example, in an area where magnetic and acoustic damping dominate. Consequently, the complexity of the bass system was not matched by the subjective results.

It's far too easy to become enraptured with one easily identified and manipulated parameter with loudspeakers, forgetting about all the rest. The heavy, sluggish bass was testimony to this. A 10in metal cone bass driver and a simple, sealed box would have given better results I suspect, by providing fast sounding, well damped bass more in character with the inverted titanium cone of the mid/treble driver.

The single, direct radiating drive unit of the Mainhattan speaker is expensive, but perhaps it needn't be. The bass unit could certainly be less complex. Then this speaker could well become the affordable, room and listener friendly omni that designers have been seeking - but failing - to produce since hi-fi began ●



**The titanium coned driver is very light and fast, but fragile.**

Friedrich Kammerzelt told me he would be delighted to bring over his new integrated amplifier for review. That meant travelling across Europe from Hockenheim, Southern Germany. The car was down on its rear springs when it arrived, but then it was probably piled high with audio equipment for the new shop in Folkstone. When the bootlid went up however, there was no cornucopia of audio facing me, not the expected Telefunken amps or EMT turntables, but just one giant valve amplifier that occupied the entire boot.

It took three of us to haul the monster out. Friedrich specialises in high-end valve amplifiers and insists that the British appreciate such things, but the Germans don't (yet?). Appreciating is different from affording though. The amazing K.A.L. 211 costs a not insubstantial £12,500 but then, the rest of the amplifier is larger than life too. It uses four of the largest audio output valves available, mighty 211/VT4-C triodes with heaters so bright they glow like light bulbs. It's heavy partly because of its size and partly because the chassis is solid stainless steel. Currently only one unit exists.

### A Dozen Valves

The top plate of the K.A.L. supports twelve valves, four for the pre-amplifier and eight for the power amplifier. A phase-splitter and driver valve for each pair of 211s make this a push-pull mode amplifier giving around 30 watts of Class A power. The valves supplied are all original Telefunken, AEG etc. or in the case of the 211 output tubes, U.S. military spec from 1940. They're very rare and considered to be the best available. At the rear sit two huge mains transformers which, on my unit had to be supplied with 100volts from an external step down unit. This is because the Tango transformers used are made in Japan. Pairs of chokes, output transformers and moving coil cartridge step-up transformers are also located at the rear of the chassis. There are moving magnet and moving coil phono inputs, CD, Tuner, Tape with monitor circuit and two AUX line inputs.

I have lived with the K.A.L. for nearly two months now and sadly it's going back soon. It is widely thought that valve amplifiers require some kind of special care and attention, but in fact a well designed circuit will be as reliable and rugged as any transistor amplifier, although valves age of course. A little care has to be taken to ensure that the loudspeakers you use are sensitive and have a flat-ish impedance curve. This is necessary with all valve amplifiers, however, since they must be load matched. Varying speaker impedance affects

# Military KALibre

**U.S. military valves from 1940 grace the K.A.L.211  
integrated amplifier.**

**Dominic Baker enjoys the confrontation.**

frequency response when a partnering valve amplifier has an output impedance of a few ohms.

The massive 211 output tubes have bright emitter heaters and no cathode. As a result, they glow like 40watt lightbulbs and give off enough heat to make any other form of domestic heating unnecessary. In fact, in the summer I can imagine a room becoming unbearably hot. The little wheel on my electricity meter also approached

its velocity limit and I'm sure that I could apply for a discount as a bulk user.

### Sound Quality

The first thing that hit me about the K.A.L. is its massive soundstage. Vocalists stood tall and the solidity and power in their voices was on a scale that very few other amps seem able to match. The height, width and depth of the stage that the K.A.L. produces is impressive and adds to the reality of the music being played.

Some valve amplifiers may be accused of being soft or maybe dull and lacking in bass depth and power. The K.A.L. suffers from none of these faults. Tonally it is bright and very clear and has the ability to cope with fast and furious scores with agility and speed. The bass is certainly not weak, the power, control and solidity rivaling the best transistor amps.

Not only is the bass conveyed with power and accuracy but it is also one of the most tuneful renditions I have

heard. As bass lines plummet downwards the K.A.L. places each note firmly where it belongs, the result being a fast, uncoloured and musical low frequency performance. It doesn't slur or clutter the bass, which is not what you would expect from a 30watt valve amplifier at all.

The bass line on REMs 'Low' from their Out of Time album was sharply etched, never being allowed to stray or to confuse the information higher up in the musical spectrum. Michael Stipe's voice was projected with detail and character forwards from the rest of the band and the overall atmosphere surrounding the whole performance was in a different league from anything I have heard before.

On the same album the track 'Country Feedback' showed me the vast amount of detail that was being resolved. The acoustic guitar could have been 10ft in front of me, such was the clarity and power with which



## "The K.A.L. is a truly magical amplifier to listen to"

it was being played. With every chord it was possible to hear the guitarist's hand movements as he readied for the next and then strummed hard across the strings. Add to this the ambience of the recording studio and the rock solid image within the K.A.L.'s awesome soundstage and you can begin to imagine the reality with which it replays music.

One area where valve amplifiers always tend to outperform their transistor rivals is in the treble regions. The K.A.L. 211 is no exception in this respect, having a delicate and articulate touch with light acoustic material as well as energy and attack

allows you to fully concentrate and enjoy every aspect of the performance. The music flows from the loudspeakers in a natural, airy manner that is thoroughly refreshing to listen to, so much so that I'm not sure how I'm going to cope once it's gone. The K.A.L. really is a case of once you've heard it, you will never be satisfied with less.

It has the ability to cope with any style of music with ease, taking everything in its stride and producing results that charm you into listening more. One album is never enough, you have to keep feeding it and your own passion for music.

So far I haven't mentioned any

problems with the K.A.L. 211 apart from its excessive use of electricity. When it was delivered Friedrich mentioned that the rated power output was 75watts. Not so. We ran a quick set of measurements after Noel found it to be a little coarse in the treble. This revealed that the K.A.L. was clipping at around 30watts, above which distortion was clearly evident. This made only the first third of the volume scale usable which I found no problem in my system, but Noel, who uses Heybrook's Sextets in a slightly larger room and at higher levels, found that he was operating the K.A.L. in overload, believing it had plenty of reserves.

### Conclusion

However the sample we received was a pre-production prototype and Friedrich assures us that any comments made will be duly attended to, so this should not be a problem with future versions. Even given this limitation I found that the K.A.L. provided an insight into music that is extremely rare. It is one of the best amplifiers I have ever had the good fortune to have the company of.

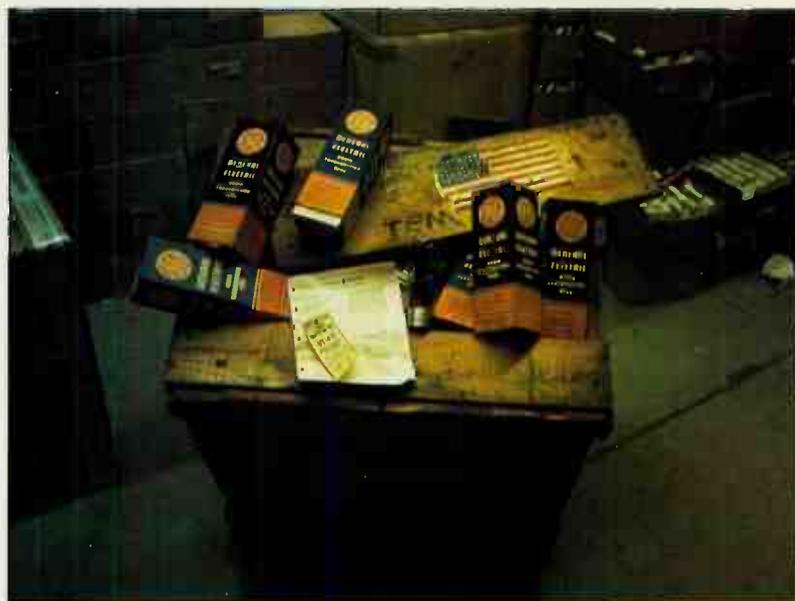
The K.A.L. is expensive. However, when it comes to outstanding examples of engineering like this, the Ongaku, Tim de Paravicini's Yoshinos and a few other select items, astronomical price tags are the norm. They're hand built flagships, demonstrators of excellence. If you have the money, are wooed by the alluring appearance and love music enough to want the very best, then I would strongly recommend the K.A.L. 211. If you can't afford it - don't listen to it! Friedrich's car sank slowly down on its springs when we loaded the amplifier back onboard; I realised just how much I was going to miss this monster ● ▶▶



with a raw, live rock performance. The treble was very refined and never became harsh or brittle, but it could never be accused of being soft either.

The midband was also extremely clear and detailed, vocals were projected well and would take on a three dimensional image that surrounded you as if at a live event. Tanya Donnelly's voice on 'Low Red Moon' from Belly's Star album came across with such conviction and emotion that it sent a shiver straight down my spine. The reality with which her voice was reproduced was startling and I can think of very few amplifiers that can so vividly present female vocals.

The K.A.L. is a truly magical amplifier to listen to, drawing you into the music and insisting that you play a bum after album into the early hours. It spreads music bare and



A whole case of U.S. Army Signal Corps VT4-C (211) triodes from 1940 that recently turned up in Greece and were rescued by P.M. Components.

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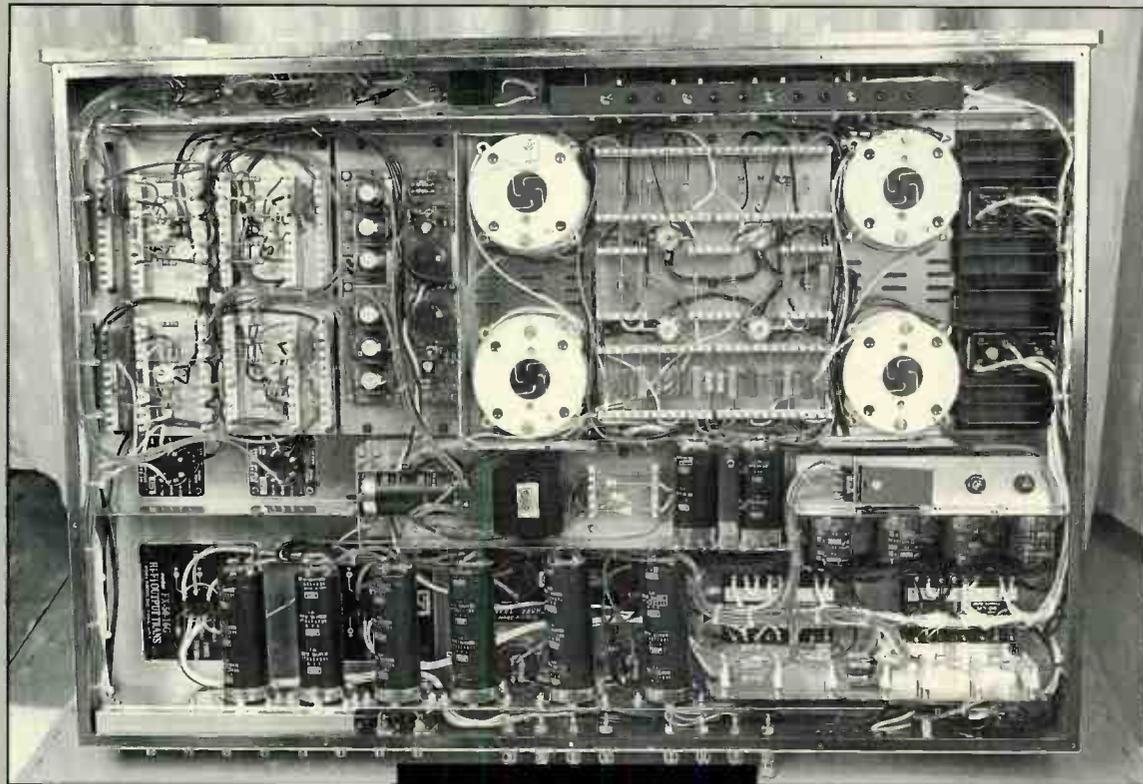
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## KAL MEASURED PERFORMANCE



*The internal layout of the K.A.L.211 is exemplary and shows that a great deal of time and effort has gone into its construction.*

In spite of its enormous size and weight, the K.A.L.211 produces a modest 28watts per channel. This was surprising, because we were initially told that 75watts was available, and the 211 has an anode dissipation capable of supporting such an output.

The specialised Japanese Tango output transformers are enormous too and I couldn't help feeling that they were responsible for a treble distortion figure no greater than that achieved in the midband, a reasonable 0.06%. This is much lower than usual for a valve amplifier, since high frequency distortion commonly rises quite significantly.

As output rises though, the K.A.L. produces steadily increasing amounts of third harmonic distortion, not second. Odd order distortion, especially third, sharpens the sound I have found, and the K.A.L. struck me as similar in its basic nature to solid state amps with third harmonic, namely that it sounded bright and open, rather than warm and soft. I'm not suggesting that the K.A.L. was otherwise like solid state though - heaven

forbid. It offers superb lucidity and detailing, plus fabulous sound staging, quite beyond that of its solid-state brethren. My comments allude only to its basic nature, which is different to that of so many other valve amps.

Frequency response was wide, measuring 3Hz-60kHz. Unfortunately, Dominic noticed disc reproduction was bright and harsh (he used the amp mainly with CD and tuner). Measurement subsequently showed inaccurate RIAA equalisation, with rising treble and falling bass. Frequency response moved out of 1dB limits at 133Hz-34kHz. The

equalisation error affected moving coil too and was so severe that it ruled out LP use. Dominic said LP sounded awful!

The CD/tuner/tape inputs had low hiss and hum, and they were very sensitive, needing just 90mV for full output. Separation was adequate at 66dB.

Whilst the disc stage of the K.A.L. 211 was disappointingly inaccurate, the main amplifier measures well. It offers superb sound quality, if not overdriven, since 28watts is not a lot of output. Use of sensitive loudspeakers is recommended. **NK**

### TEST RESULTS

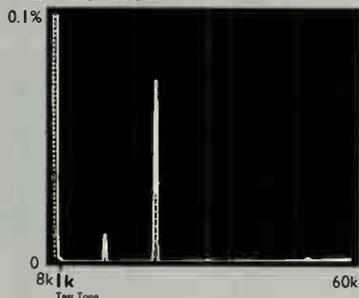
Power 28watts

CD/tuner/aux.  
 Frequency response 3Hz-60kHz  
 Separation 66dB  
 Noise -85dB  
 Distortion 0.06%  
 Sensitivity 90mV  
 dc offset none

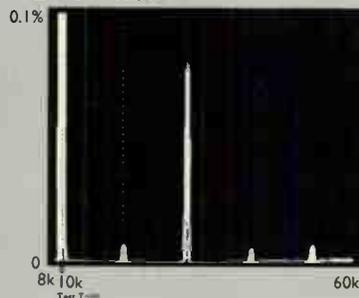
Disc (MM)  
 Frequency response 114Hz-34kHz  
 Separation 66dB  
 Noise -72dB  
 Distortion 0.06%  
 Sensitivity 2.7mV  
 Overload 900mV

Disc (MC)  
 Frequency response 133Hz-48kHz  
 Separation 66dB  
 Noise -60dB  
 Distortion 0.06%  
 Sensitivity 0.14mV  
 Overload -

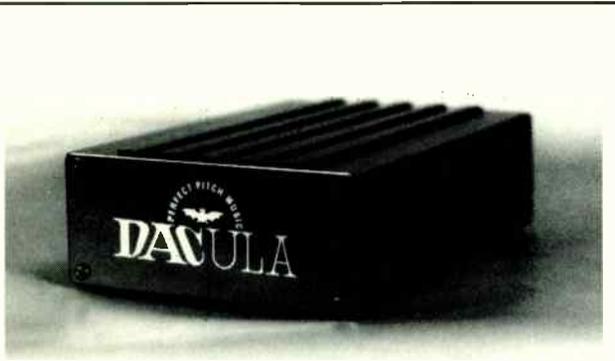
**Distortion 1kHz**



**Distortion 10kHz**



The distortion plots at 1kHz and 10kHz both show strong third harmonic distortion, but the surprising thing is that distortion has not increased at higher frequencies.



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### AER EQUIPMENT RACKS

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	Height (exc. spikes)	Number of shelves	Distance between	Price
AER 2	515mm	2	380mm	£110.00
AER 3	515mm	3	180mm	£128.00
AER 4	660mm	4	165mm	£156.00
AER 5	845mm	5	165mm	£170.00
AER 3TV	515mm	3	190mm	£150.00

(\* depth 395mm)



AER 4

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	Height (exc. spikes)	Number of shelves	Distance between	Self Assembly	Welded	Price
TTW1	Wall	1	—	—	—	£ 53.00
TTW2	Wall	2	305mm	—	—	£ 65.00
TT2	490mm	2	380mm	£ 67.00	£ 70.00	£ 70.00
TT4	620mm	4	155mm	£102.00	£115.00	£115.00
TT3	795mm	3	325mm	£ 88.00	£100.00	£100.00
TT5	795mm	5	155mm	£115.00	£138.00	£138.00
TT5T	995mm	5	205mm	£127.00	£150.00	£150.00



TT4

### BETA "B" SERIES RACKS

Tubular welded construction with adjustable spiked feet. The upper shelf is supported on 4 adjustable spikes for improved decoupling. Shelf size 465mm x 355mm (W x D). Optional castors kit £9.99 extra. Finished in black ash effect.

	Height (exc. spikes)	Number of shelves	Distance between	Price
B1	65mm	1	—	£ 60.00
B2	480mm	2	380mm	£ 90.00
B3	455mm	3	155mm	£110.00
B4	645mm	4	155mm	£130.00
B5	840mm	5	155mm	£150.00
B5a	840mm	5	200(2)/110(2)	£150.00



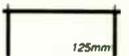
B5

### MODULAR "M" SERIES RACKS

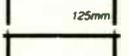
A very versatile system with options allowing modules to be added to suit varying equipment heights. Finished in black ash effect or glass shelves. Select the base module and add shelf modules as required. Supplied with spiked feet (optional castors kit £9.99 extra). Distance between columns 465mm x 395mm depth. Supplied in flat pack for easy self-assembly.

#### SHELF UNITS

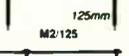
Type No.	Distance between	Single Shelf Price	Single Shelf Glass	Type No.	Double Shelf Price	Double Shelf Glass
M1/90	90mm	£38.00	£50.00	M2/90	£70.00	£90.00
M1/125	125mm	£38.00	£50.00	M2/125	£70.00	£90.00
M1/165	165mm	£38.00	£50.00	M2/165	£70.00	£90.00



M1/125



M2/125



M2/125

#### BASE UNITS

Type No.	Distance between	Wood Shelves	Glass Shelves
MB3/125	125mm	£100.00	£130.00
MB3/165	165mm	£100.00	£130.00
MB3W/165	165mm	£160.00	—



MB3/165



MB3W/165

### TR SPEAKER STANDS

Medium mass double pillar stands supplied with adjustable spiked feet and top spikes. Can be sand or shot filled.

	Height	Top Plate (W x D mm)	Price
TR30	300mm	240 x 240	£ 55.00
TR40	400mm	190 x 190	£ 55.00
TR50	500mm	160 x 160	£ 55.00
TR60	600mm	150 x 150	£ 55.00



TR50

### HS SPEAKER STANDS

Medium mass single pillar stands supplied with adjustable spiked feet and top spikes. Can be sand or shot filled. All base plates 250 x 305mm (W x D).

	Height (exc. spikes)	Top Plate (W x D mm)	Price
HS8	200mm	240 x 240	£ 67.00
HS12	300mm	240 x 240	£ 67.00
HS16	410mm	200 x 200	£ 68.00*
HS20	510mm	165 x 190	£ 68.00*
HS24	610mm	165 x 190	£ 72.00*
HS28	710mm	160 x 160	£ 72.00



HS16

\*Asterisked models can be supplied with Tannoy 600 series mounting top plate for £4 extra — please state speaker model No. when ordering

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Ever since Gilbert Briggs founded Wharfedale in Yorkshire, the area has acted as a magnet for others wanting to tackle speaker design. Castle were a spin off and now Keswick Audio Research have set up shop in Wakefield. The Arias are their second model, designed for bookshelf use and retailing for £209.

The Arias use a 19mm polyamide dome treble unit to cover the higher registers and comes as an interesting and potentially attractive alternative to the now-common metal dome tweeter, which can give a rather bright quality. Polyamide is a soft plastic possessing a more amenable sound in this role.

The 6.5" bass/mid-range unit is loaded by a reflex cabinet with a front firing port, necessary for shelf mounting to avoid interference from a close rear wall.

The Aria is bi-wireable, providing both screw terminals and 4mm sockets. It was reasonably well finished, with satin black paint and complementary black cloth grilles fitted with a Keswick badge.

After several hours of running in, the first impression I had was of a concise and neutral sound with a very flat mid range, free from selective emphases. The Arias produced good results even at high volume and they had no difficulty dealing with the varying pace of quite demanding Rock music. The bass response was good and well proportioned, but it sounded a little too regular and did not build up sufficient atmosphere.

Tasmin Archer's vocals were well reproduced and the sound was both bright and flowing, but there was a little roughness in the treble that could, at moments make the speakers sound a little peaky. While listening to Tom Petty I felt that the speakers had good instrument separation; they balanced the guitar and his vocals very well. With midrange information the Arias were most at home, having a fast and coherent approach.

With Grace Jones' 'Slave to the Rhythm' I found the bass performance satisfactorily detailed. The speakers had little difficulty reaching down to low frequencies, retaining reasonable definition and clarity whilst doing so. The bass was still a touch un-tuneful and resonant, but the



# Solo Song

**Jonathan Jordan attends the first performance of Keswick's Aria.**

overall impression was favourable all the same.

The Arias responded well to transients, sounding dynamic and powerful. Stereo imaging was, however, not as good as I would have liked. Removal of the baffles improved this slightly and gave the sound better freedom, but it also made the speakers sound a little too bright.

A slight lack of depth became apparent while listening to Chopin's Scherzo No. 1. It was here that the Arias produced a flat sound, weak on both interpretation and transparency. The low frequencies also seemed expressionless; no real feeling of

warmth or harmony was present: I felt.

My overall view was of a fairly competent loudspeaker that can handle power without too much difficulty. The bass can sound a little routine but the midrange performance and the speed of the Arias are strong points. The top end can come across as a little bright too. In spite of these gripes the speaker's perform well with most music, even if they do lack a little emotion. At £209 they are well worth an audition by the music lover who enjoys a fast and detailed sound - especially at high levels ●

## MEASURED PERFORMANCE

Although the tweeter response of this speaker is a bit ragged, especially since our type of third-octave analysis tends to disguise high frequency peaks and such like, it integrates well with the output of the bass/mid-range unit. There's just a slight dip at 2.5kHz, but otherwise the response characteristic of this speaker is surprisingly smooth; it is well engineered.

The Keswicks are meant for shelf mounting. The usual way of accommodating this is to over-damp the drive unit and to reduce output below 200Hz or so, to compensate for wall reinforcement. The Keswicks roll off below 100Hz and have a well sustained output down to this frequency, so against a wall they are likely to

sound a bit fulsome in their bass. Their lower limit is 63Hz (-6dB), quite a respectable figure for a small reflex enclosure. Ideally, I suspect that these speakers will sound best 6in or so from a rear wall.

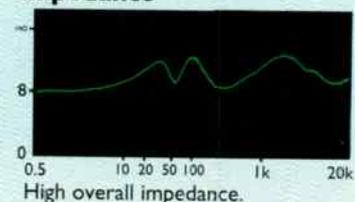
In spite of having a high overall impedance of eleven ohms, meaning they do not draw power, the Arias go loud with little input (volts to be precise). They produced no less than 87dB sound pressure level for a nominal watt (2.84V). The impedance curve is normal for a two-driver, reflex loaded box, sinking no lower than six ohms.

The Aria's are well designed and balanced in every respect. Their measured performance suggests they will at least display a smooth, civilised sound. **NK**

## Frequency Response



## Impedance





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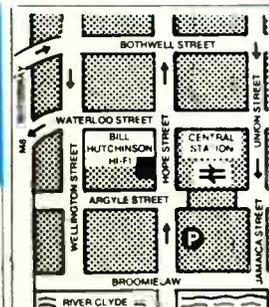
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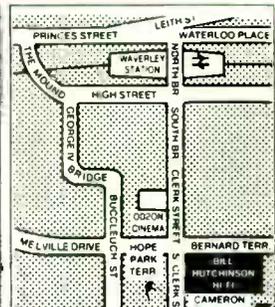
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We started producing DIY supplements in response to a steady stream of requests from readers. I think there was some trepidation at this end, because of the amount of work they involve. Now we are getting into the swing of designing and building and, although it gets no less problematical and time consuming, the work is becoming progressively more interesting and involving. Jonathan Jordan remarked on this as he was soldering away, building the Audiokits disc preamplifier stage: "You know, it's one thing listening and writing about hi-fi, but another to actually build it. I'm really enjoying this."

At this end of the pen, I think we all have more than a few designs for novel items of hi-fi in our heads; how they got there is what I'd like to explain, as well as what we are working on for future projects.

Loudspeakers are everybody's obsession, but I'm not over impressed by the constant regurgitation of a few simple ideas, constantly reworked for commercial release. I mean, just how many twin-driver box loudspeakers can the market stand before becoming totally sated? We don't need to contribute to this part of the market though, due to the enormous amount of innovation brought to bear in this field over the years, there's a surfeit of good ideas awaiting further investigation.

A fascinating idea with great potential, everyone agrees, yet

one that has lain curiously dormant over the years is the use of motional feedback to improve bass quality. I decided to knock up a simple motional feedback system one murky weekend and the results were staggering. The motion of the bass cone is sensed and fed back to the input of a drive amplifier, much like negative feedback, so that motional errors - which are considerable in bass units - can be eliminated. In other words, a correction signal is applied, using feedback, to force the cone to follow the applied drive signal. It results in impressively tight bass, of a quality and evenness quite beyond that available from conventional loudspeakers.

Good ideas like this get abandoned for a reason of course and there's nothing like a bit of experimentation to discover just what that reason is. Just as the system was up and running and sounding completely superb - crash! The cone would suddenly burst forward or backward with frightening force, wrecking the connecting wires. At the time I thought the unit was just being forced to follow transients; the effect seemed like a good thing. However, after the cone had tried to leave home for the fifth time - and each time I had to repair the lead-in wires - I was forced to give up. In the short time the system worked though, I managed to get results from it so impressive that I knew motional feedback was an idea to be pursued. The feedback was variable and as it was dialled in, bass problems just vanished. Magic!



enough for our - and DIY purposes, if not for the broad marketplace that demands more civilised behaviour. So go out and order your flak jacket now; it may save you from the awful fate of being knocked senseless by an errant high speed cone.

I've become dedicated to single-ended working; Tim de Paravicini's Yoshino's (don't ask the price) are undoubtedly the very best amplifiers I have ever heard. Ludicrously esoteric and specialised, they're breathtaking. So we've come up with a poor man's Yoshino, a single-ended valve amplifier that anyone can build, without the threat of a 1000volt HT line that amps like the Yoshino bring to the home constructor. High speed speaker

## Reflections from Noel Keywood kaleidoscope

What was going wrong? Relating my experiences to Gordan Bank, chief engineer of Celestion loudspeakers, he laughed. The system was unstable, he explained; you have to bring cone position into the correction system. There's been a lot of discussion about this at Hi-Fi World and we think that a simple system can be devised that will work more than well

cones are enough excitement for you to contemplate; 1000 volt HT lines are a bit over the top.

Have I told you about the GEC 1100watt valve amplifier? Hmm. With 2,500volts on the HT line I'd better not or, as usual, we'll get a torrent of letters pleading with us to publish the design and build it. Then Jonathan Jordan might change his mind about "enjoying this"! ●

# Coming in our July Issue . . .

### HEYBROOK QUARTETS

Beautifully fashioned with walnut fillets these two-way stand mounted, super sensitive loudspeakers are ideal for valve amplifiers.

### AURA CD-50

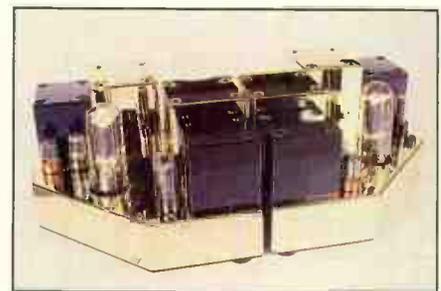
This competitively priced CD player boasts a Phillips CDM-9 transport mechanism and claims it was designed with an audiophile ear in mind. We establish if the sound shines to the same degree as its chrome finish!

### DCC OR MINIDISC!

The latest instalment in the battle between Philips' and Sony's rival products is investigated; Jonathan Jordan determines if there is a war and if so, who's throwing the blows.

### COMPETITION

Do you enjoy going to the cinema? How about bringing the cinema to your living room? We offer you the chance to win the excellent Kenwood KA-VB500 Audio/Video amplifier and a state of the art speaker system from Celestion.



### YOSHINO'S

These mighty valve monoblocks are designed and manufactured by the almost legendary Tim de Paravicini. They use the massive 845 triode valves in single ended mode making them very special, we ascertain how special!

### LOUDSPEAKERS WITH A CERTAIN "JE NE SAIS QUOI"

Apart from the 'industry standard' box speaker, plenty of manufacturers produce items which deviate from the norm, for our comparison test we review some fat, thin or just plain different loudspeakers!

173 STATION ROAD, EDGWARE  
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I hope you'll forgive me from straying this month from the world of recording and studio technology, the usual remit of my column, to the world of music. It seems to me that, as a nation, we do not appreciate our artists and composers as much as we should. We freely laud our sportsmen and women, our explorers, our actors and actresses, our television personalities even our politicians (once they are no longer in office anyway).

But, considerable though the achievements of our footballers, racing car drivers, pole pedestrians and Oscar winners are, there is a peculiar (to use George Meredith's phrase) "disrelish of brainstuff" in our treatment of our thinkers, over the treatment of our doers. All the more important then, when an appeal like the one launched this year by the Elgar Foundation, acts to preserve a part of our national musical heritage and to bring us closer to the life and works of one of Britain's greatest composers.

My interest in Elgar (and perhaps more importantly in Elgar's music) was recently rekindled when I attended a concert of his oratorio, *The Apostles* performed by the London Gala Orchestra and Ashted Choral Society with Helen Pritchard, David Johnston, Laurence Whitehead, Caroline Stomer, Graham Titus and Martin Robson as soloists all under the baton of Arthur Diamond. Performances of this huge work are relatively rare and there only exists two recordings of the work: EMI's reissue on CD of Boult's 1973/74 Kingsway hall recording with the London Philharmonic and Hickox with the LSO on Chandos.

Sadly *The Apostles* has never achieved the impact or reputation of *The Dream of Gerontius* and it seems unlikely that this situation will improve much as *The Apostles* slips from the repertoire - aided and abetted by Novello who have taken the work out of print! From the performance I heard last Saturday, that certainly seems to be something of a shame. I would be lying to you if I said I spent two and a half hours in rapt attention because the work does flag a bit in the middle. But the setting of the Beatitudes and Peter's Denial

and the last few pages of the work must rank amongst the finest Elgar ever wrote. Especially the last crescendo comprising, the huge orchestra, full chorus, semi-chorus and four of the six soloists. This builds into a "wall of sound" stretching from the earthly soloists to the heavenly semi-chorus. No less remarkable is Elgar's modern treatment of his subject matter. This is a very human work. Jesus is not central to the piece. Instead the composer explores, with very un-Victorian sensitivity,



# recorded message

Left by Richard Brice

the flawed characters of the prostitute Mary Magdalene and the disillusioned revolutionary Judas.

## Mary Magdalene:

*Have pity upon me because I have sinned before Thee. My tears run down like a river day and night. Whatsoever mine eyes desired I kept not from them. I withheld not my heart from any joy....*

*Hide not thy face from me: put not Thy servant away in anger.*

Judas: (following Jesus' exhortation, "Blessed are the poor in spirit for theirs is the kingdom of heaven.")

*He poureth contempt upon princes.... The poor is hated even of his own neighbour, the rich hath many friends.*

And when Judas hears the people call for Jesus' execution,

*Mine end is come - the measure of my covetousness. Over me is spread an heavy night, Yet am I unto myself more grievous than the darkness.*

*The Apostles* is a piece that should not be allowed to suffer neglect - and neither should its creator. The concert performance was complemented by an exhibition mounted by the Elgar Foundation who have launched an appeal for £1M to enable it to provide a visitors centre at Elgar's birthplace in Worcestershire. Couched in the countryside that inspired so much of his music, the cottage at Broadheath where Elgar was born has been maintained as a memorial to the composer since the establishment of the Elgar Birthplace Trust in 1936, two years after his death.

The appeal is aimed at providing a proposed new building close to the cottage and for the conversion of an existing building into an Elgar library where the composer's manuscripts can be preserved and safeguarded under proper conditions. Thankfully the proposed Elgar Centre is intended to blend in with the character of the surrounding countryside and is designed by the architects Fimstone and Co.

The centre will include, not only an Exhibition Hall, the Library and Archive Room, but also a large room for audio-visual educational presentations and for live music events. The new building is intended to

release the original cottage from the many roles it is presently required to house and for which it is unsuited. The new centre, if it is built, will enable scholars and lovers of Elgar's music from all over the world to appreciate further the life and work of one of Britain's no - hold it, the world's great composers.

Of course, there is an argument which says, "What's the point of preserving a great persons birthplace? Does it illuminate the visitor by showing the room in which the

master worked/ate/slept? Is it not simply a curiosity?" I do not subscribe to this argument. I assiduously visited Mozart's birthplace in Salzburg and enjoyed every moment of it, despite the fact that Mozart hated Salzburg. I visited Leonardo's birthplace north of Vinci, Thomas Hardy's, Shakespeare's and a host of others. And I did it because there's a special fascination in visiting the houses where the famous were not famous - where the great and the good were little and indifferent. It is in the houses where the great and the famous were born that each of us is reminded of our own vanity and humility. It is there that we find the mighty were made low.

If you don't know *The Apostles*, try to get hold of a copy on CD - both recordings are passionate accounts of the work. If you would like to contribute to the Elgar Birthplace Appeal, write to:

The Hon. Treasurer  
Elgar Birthplace Appeal  
c/o KPMG Peat Marwick  
Peat House  
2 Cornwall Street  
Birmingham B3 2DL ●



Is the U.K. hi-fi industry dying? Recent conversations with several U.K. manufacturers have led me to believe that the answer to this question is possibly yes. Since the late Eighties hi-fi sales and magazine circulations have spiralled downwards, indicating a declining interest in what was once a popular hobby. Of course the recession hasn't helped, but interest had been dropping off long before the recession took hold. The question, is why?

At the moment very few manufacturers are doing well and the majority of those who are have overseas sales figures of 90% or more. Some even express a distinct lack of interest in the U.K., suggesting that it is simply not worth bothering with a market that demands ten budget amplifiers a month, when one overseas is ordering twenty of the next model up. Especially when to get anywhere with hi-fi dealers in the U.K. you need a sales rep. on the road to make regular calls, taking orders and putting right faulty products. I know of one manufacturer who is considering producing a £20,000 DAC. This may seem an insane move to make in a recession, but not when a Taiwanese retailer is confident of selling one a month! It all becomes clear: how many U.K. dealers could claim to be able to do this in Britain?

### Recession

This is perhaps a narrow view taken by the manufacturers, but it is easy to see their point. The more worrying prospect is that as we pull out of the depths of recession, hi-fi will remain stuck, the new generation preferring to spend their money on Nintendo systems and satellite receivers. At the moment the U.K. industry seems unaware of the impending doom that could befall their market. However, I am confident that the situation can be turned around.

During a recession that new £300 pair of loudspeakers you were considering becomes a £130 pair of budget miniatures. The competition at this end of the market has now become so fierce, as manufacturers fight for the few sales that will keep them in business, that for your money you are getting better value than ever before. Look at

the excellent Goodmans Maxim 3 and the Celestion 1 for example. Perhaps this is partly the reason why manufacturers have so much success abroad. We are so competitive at the budget-to-mid priced end of the hi-fi market that they just can't respond.

The other thing that appears to be happening is that the consumer is becoming more and more interested in tweaks and DIY. We have a huge stack of letters from our readers who have done everything from making their own cables to modifying or building their own system. If funds aren't available for a new



Dominic Baker

## dB on the level

amplifier, many are quite willing to re-wire them with higher quality cable, replace standard metal film resistors with precision or bulk foil types and replace cheap capacitors with high quality polypropylene varieties. It takes relatively little knowledge to replace one component with another of the same value, the ability to solder neatly in order to make a good connection being the most tricky operation necessary. The resulting increase in performance is often far greater than would be obtained by simply trading up to the next model in the range.

Kit loudspeakers have always been popular but over the last few years their appeal has increased to the hi-fi enthusiast. It is now quite possible to buy a kit loudspeaker for £400 that uses the same high quality drive units and crossover components that are found in commercial loudspeakers costing twice as much - or more. The constructor has the opportunity to tune the loudspeaker to his system, room and personal taste.

When it all works and sounds fantastic, the feeling of satisfaction and pride of ownership is far greater than when unboxing a finished loudspeaker consist-

ing of two cheap drive units in a rectangular box.

The point of all this is that there are a large number of hi-fi enthusiasts out there who would love to build or modify their own equipment. It is up to the industry to serve their needs, not to blindly fight on at a tangent to the consumer. When hi-fi began it was entirely a DIY hobby: if you wanted a system you had to build it. Right up to the late Sixties, hi-fi was all about building and tweaking to get the best results. Nowadays, the hi-fi system has become an inanimate object, there is nothing left that can be easily tweaked. You used to be able to spend days setting up a record deck, experimenting with the huge number of variables until you got exactly the result you were after. This has been replaced by the CD player, a black box with buttons on it and nothing to tweak.

Fortunately the consumer is fighting back and their demands are now so strong that they are becoming harder for manufacturers to ignore it. Hi-fi is reverting back to a hobbyist interest, where it belongs and where you have more choice about the sound of the system

and its presentation than any one manufacturer could provide. The saddest thing is that all the masses of knowledge and information that was available in the Sixties has to some extent been lost and will need to be re-learned. Especially when it comes to valves, which were forgotten with the arrival of the transistor. Now it seems we are beginning to see our mistakes and many are returning to this sonically superior device, myself included.

So, in some ways hi-fi is getting back to its roots, it is becoming more of an enthusiast interest again, which will

surely strengthen it. As the recession lifts we could emerge with a stronger, more involved and interesting hobby that may prove more attractive to newcomers than plugging one black box into another. In addition, because of the fierce competition that exists between manufacturers, there is now a lot of very competent equipment on the market for reasonable prices; the quality has been pushed up and the price down.

What we have to keep doing is coming up with more innovative products that are attractive to the consumer. And the most important consumer to the industry is surely the younger generation. At the moment they are being brought up on midi systems and Nintendo/Sega computer games, whose advertising and marketing is so aggressive they have created a highly desirable product that must be affecting sales in other areas, hi-fi for example.

Hi-fi and especially DIY hi-fi has a lot going for it, it is creative, educational and fun, but what we need to do now is market it in a desirable manner and maybe once again hi-fi will become a major interest ●

The Heybrook Sextet is a loudspeaker that treads its own, very distinctive and exclusive path. Named after the total number of drivers in both speakers the Sextet exhibits a standard of imaging good enough to make an electrostatic fan update his opinion about box loudspeakers.

The distinctive Tonigen ribbon tweeter is a notable feature, both visually and aurally. Its smooth but extended high frequency response is achieved by the use of a lightweight Mylar ribbon diaphragm, as opposed to the more commonly used soft or hard dome. This particular drive unit provides superb definition in the high frequencies and also contributes to the excellent imaging properties these speakers possess.

Balanced accompaniment is provided by a dedicated 140mm polypropylene mid-range unit, mounted in a sealed enclosure filled with absorbent long haired wool and acoustic fibre.

The bass unit has a 180mm doped paper cone loaded by two reflex ports that exhaust through the base of the cabinet. To ensure they are

unhindered the Sextets are mounted on miniature floor stands; to keep them sufficiently clear of the ground.

The black ash veneer of the tall, slim cabinets is well complemented by vertical walnut fillets on each side of the front panel, helping the speakers blend into typical room surroundings. Bi-wiring is possible, to improve sound quality. The Sextet is an easy amplifier load and fairly undemanding in its power requirements: amplifiers from 30-200 watts are recommended. However, it is very revealing of its sources and must be driven by a high quality amplifier, fed from a good source.

Heybrook get their name from a bay just to the East of Plymouth Sound, Devon, that their first premises overlooked. Loudspeaker manufacture started in 1978. Over the last fifteen years they have successfully developed a variety of amplifiers, turntables, loudspeakers and stands. An integrated amplifier is to follow later this year.

A distinctive design flair and excellent sound quality has enabled Heybrook to become well established both at home and abroad. The newest additions to their range are the Prima loudspeaker which is fully shielded for AV use and the Quartet, a smaller stand-mounted sister to the Sextet. The signature range of pre and power amplifiers are also available

When we reviewed the Sextets in October 1991 their strengths were described as revealing, dramatic, fast and very entertaining. They also came close to scoring, perhaps appropriately, a 'perfect six' for their projection and imaging properties. Noel greeted them as one of the few box loudspeakers that could really produce a plausible sound stage, one thrown well forward with strongly etched images and as defined in the centre as it is at the edges.

In addition to this, the Sextets manage to offer wide frequency response; not only do the snap of a snare drum, the ringing of a cymbal or the high harmonics of an orchestra sound wonderfully real, but they also convey the intent of bass lines with good, solid note placement. Boasting above average sensitivity and an impedance of around eight ohms, these speakers make gratifying partners to a wide range of audiophile components and will undoubtedly add to the lucky winners listening pleasure.

# SIX OF

## HEYBROOK SEXTET COMPETITION ENTRY FORM

1. Heybrook Hi-Fi is named after?
 

<input type="checkbox"/> A breed of long-haired sheep	<input type="checkbox"/> The surname of the proprietor
<input type="checkbox"/> A bay on the South Devon Coast	<input type="checkbox"/> A First World War poet
  
2. How many drive units do a pair of Sextets possess?
 

<input type="checkbox"/> 2	<input type="checkbox"/> 5
<input type="checkbox"/> 3	<input type="checkbox"/> 6
  
3. What material is used in the ribbon tweeter diaphragm?
 

<input type="checkbox"/> Dacron	<input type="checkbox"/> Tetrafluoromethane
<input type="checkbox"/> Polyamide	<input type="checkbox"/> Mylar
  
4. Which of the following is NOT, or has never been a Heybrook product?
 

<input type="checkbox"/> Prima	<input type="checkbox"/> Sextet
<input type="checkbox"/> Quartet	<input type="checkbox"/> Launderette
  
5. In what year did Heybrook Hi-Fi start making loudspeakers?
 

<input type="checkbox"/> 1969	<input type="checkbox"/> 1990
<input type="checkbox"/> 1985	<input type="checkbox"/> 1978
  
6. How many Heybrook 'speaker names have been mentioned on this page?
 

<input type="checkbox"/> 5	<input type="checkbox"/> 4
<input type="checkbox"/> 3	<input type="checkbox"/> 2

### TIEBREAKER (Obligatory)

Heybrook Hi-Fi plan to launch their new integrated amplifier later this year. This product is without a name so please suggest an intelligent, marketable and fitting name for this new product.

\_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Postcode \_\_\_\_\_

Daytime Tel.No: \_\_\_\_\_

# THE BEST!

Win the highly successful Heybrook Sextet Loudspeakers worth

# £1099



Please send your entry form, completed in block capitals, to arrive by 28th June 1993, to:

HEYBROOK SEXTET  
COMPETITION,  
Hi-Fi World Magazine,  
64 Castellain Road,  
London W9 1EX

In the event of more than one entrant submitting all the correct answers, the winner will be decided on the tie-breaker. We will endeavour to publish the results in the August 1993 issue.

Audio Publishing reserve the right to publish such entries or parts of entries as the company sees fit. Heybrook Hi-Fi reserve the right to use the answer to the winning tie-break as the company sees fit. We regret that photocopies of the entry form cannot be accepted. No correspondence about this competition will be entered into and the Editor's decision is final. Employees of Heybrook Hi-Fi and Audio Publishing Ltd. may not enter.

## DPA COMPETITION WINNER

The first correct answer drawn from the hat was Steven Bell from St Andrews in Scotland. The full DPA prize consisting of a T1 transport and Sync-locked Bigger Bit Digital to Analogue Convertor will be working its way to Bonny Scotland! Congratulations to Steven and many thanks to the hundreds of other entrants whose entries did not manage to find a way out of the hat. Please keep trying!

## MONITOR AUDIO GOLD DELIVERY

Colin Snook was keen to welcome these fabulous floorstanders to his home in Welwyn Garden City. As a Software Quality Assurance Consultant he was quick to notice the quality of the '1200's and said that he was "amazed how the music increased in detail and dimensionality!" Colin now plans his to upgrade his amplification with our very own Valve Monoblock DIY kit!



**ARISTON AND ON AND ON . . .**

In my ceaseless and mostly fruitless quest for 'high-end' Nirvana at low-end prices (or less) I have just purchased an Ariston RD90 Superior turntable from Richer Sounds for £199.95. I did this in the full knowledge of Ariston's recent demise and the uncertainty



The Tannoy 603s are an excellent starter loudspeaker.

over spares, etc. The logic behind my purchase was that a deck which sold for £598 in 1989 ought to either:

- a) massively outperform my Rega II, or
- b) be worth a few quid for the several hundredweight of non-ferrous metal in the platter and arm-plate.

As far as I can determine, this deck was a direct rival to the Sondek (which as we all know is the best turntable in the universe . . . yawn) and if it was fit to be seen in the same company as 'the great one' it should be a fair deal still.

My obvious first choice would be to stick the RB250 arm from my Rega on the Ariston or maybe trade in the whole Rega against some other arm. What is certain is that I am not in the market for an SME V, Linn Ekos, etc. unless they too find themselves in Mr Richer's clearance sales.

As far as possible I would like to configure the deck/arm/cartridge to provide a neutral sound and would really appreciate any suggestion you could make involving sensible prices. Also any information about the Ariston (reviews, etc.) would be very useful.

For the moment the rest of my system is based around an Ion Obelisk I amp (MM only) and Tannoy 603s on dedicated, mass-loaded stands bi-wired with Linn K20. Any ideas?

**Colin Berresford,  
Billinge,  
Lancs.**

I shouldn't think the metal would fetch much. It's a fair while since I heard the Ariston in question, but I did track down a review: in Hi-Fi Choice, No 48, the old A5 'paperback' type. I have no recollection at all of the arm that was then fitted, but I see no reason why the Rega shouldn't work well, preferably with a Goldring 1042, I think.

I'm not convinced it would be neutral, though - I suspect it would err on the warm side. Bearing in mind the construction of the turntable, and its suspension, I imagine the best partnering arm would be an Alphason Xenon MCS, though this is no longer cheap. The

armboard might need a bit of work, because this uses a Linn fixing. It works well with Ortofon MCs - but since the amp is MM, try the high-output MC15 Super. **EB**

**GERMAN COLUMN**

Your magazine is available in Germany too - I bought it at Wiesbaden Central Station, where Hi-Fi News and What Hi-Fi? are also on sale, at very high prices, like your magazine.

I have two questions: 1) Does it really make sense to buy Dr Brooke's Pentacolumn loudspeakers? They look nice, and following the test reports published in English magazines are well made and do a very good job. But they are very expensive and need lots of amplifiers, which suggests to me that Dr Brooke should

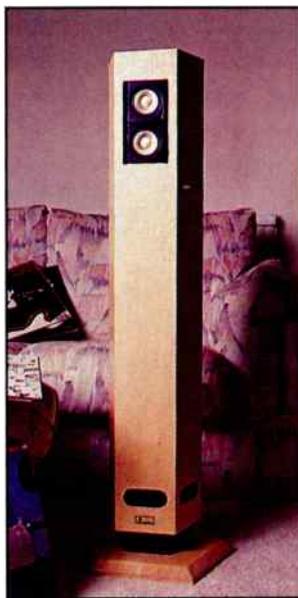
take the last step and offer an active version with the amps and crossovers built-in. These days we look at a nice column surrounded by lots of - more or less - little black, red or grey boxes with lots of cables too.

Is that nice to look at? I say no. 2) Can you recommend the use of Ruark speakers (Talisman II or Templar) together with a John Shearne Phase 2 integrated amp (or with EMF Audio Sequel)? I'm looking for the right partners to match my Philips CD614, my listening-room (25m<sup>2</sup>, 2.5m in height, with carpets), my eyes, my wallet and my musical taste (jazz, but not Jazz-Rock; Classical: piano, symphonies and church organ).

I know that hi-fi equipment can only offer an illusion of what real music is, but I think there are things which come closer to live music than others.

**Rolf Lauer,  
Wiesbaden,  
W. Germany.**

The Pentacolumns are now supplied with the very decent - and small! - Moth power amps to drive the bass. However, I'm not certain they would suit a taste for full-blown organ music. The price in the U.K. (£2,486) suggests that the cost in Germany



The Pentacolumns are now supplied with Moth power amps for the bass.

could be beyond your pocket and your Philips source perhaps would not be up to it. A better bet would, I believe, be to take on the Shearne, which would provide (if reports are correct) the kind of balance your type of music requires.

You don't mention an LP source, so presumably the fact that The Phase 2 has no phono input would not matter. Of the two Ruarks, the Talisman would probably be the better choice for your purpose. Please, then, cast around for a better CD player: Arcam Alpha Plus,

Marantz CD-72 or Rotel RCD 965BX at around £300-£400 plus (in the UK); or if you are particularly attracted by the Philips 600-series sound, the Mission DAD/DAC5 package. **EB**

**HIGH ON A HIGHPHONIC**

I've recently got a Highphonic MC-A5 cartridge (output level



The valve integrated Copland CTA-401.

0.135mV and impedance 40ohm. It will substitute for the current Denon DL103 (Van den Hul re-tipped) which is connected to the MM phono input of my Copland CTA-401 amp through a Lentek pre-amplifier (gain 28dB). The turntable is an ST903 by CEC with its own tonearm.

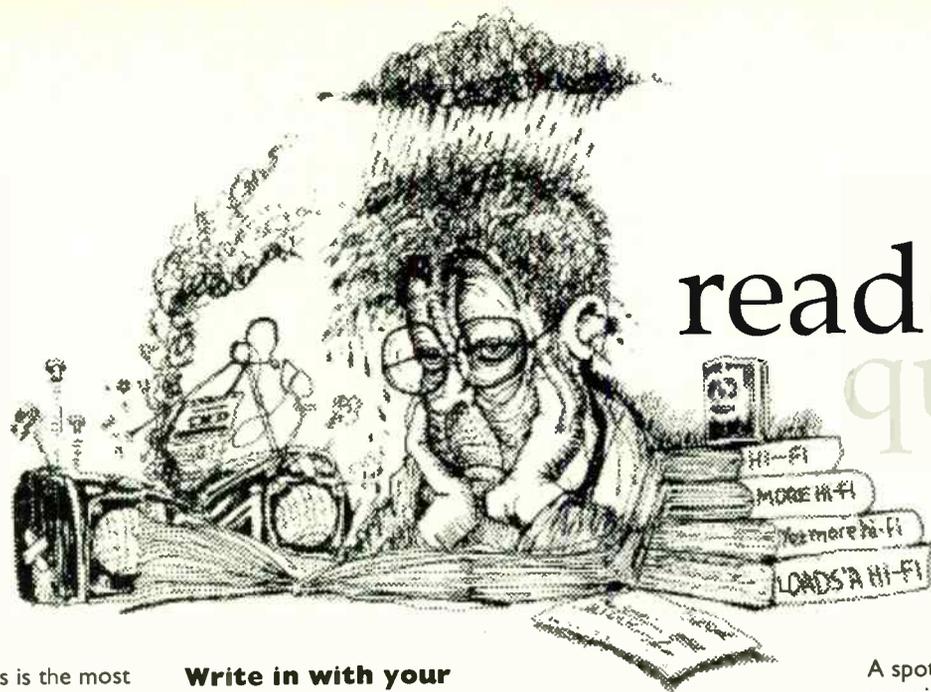
Which is the better way to take advantage of the qualities of both the Denon and Highphonic cartridges?

- a) Replacing the Lentek pre-pre with a high-quality phono stage (Michell Iso, Linwood, DPA) setting aside the phono stage of the Copland? Is it worthwhile to make the phono input useless?
- b) Use the MM phono input with the right step-up transformer for MC cartridges like the Audio Innovations or Ortofon?

Which is the better way to take advantage of the qualities of both the Denon and Highphonic cartridges?

**Jordi Milia Romero,  
Barcelona,  
Spain.**

I love the continental 'pre-pre', so much more concise than our clumsier 'MC head-amp' or whatever. Ideally, I would suggest a Hera powered Iso, feeding into a line input of the Copland, but there is an interesting alternative. Sentec of Denmark make a 'pre-pre' which can be switched internally by the user for moving-magnet, low-output moving coil and high-output moving coil cartridges, with the chance of matching the Highphonic's impedance rather more precisely. Active, with a line-



# readers' queries

level output, this is the most flexible design I know. It doesn't have the special airiness of the Iso, but would be a marked improvement, though with a similar fundamental sonic signature to the Lentek. I had one of those once, but found it very susceptible to RF interference, I recall, which made it occasionally sound somewhat lifeless. **EB**

It might be useful if I point out that no low output moving coil cartridge has a coil impedance of 40ohms; that's the minimum load figure that the preamp (sorry, pre-pre-amp!) should present. The Michell Iso is the best head amp I have ever heard. It's as spacious sounding as a valve amp, yet without the hiss and warmth. It's an expensive option, but certainly the best by a long margin in my view, if you want all the qualities of the Highphonic brought out. **NK**

## FRENCH LESSON

Being a French citizen of British origin and a teacher of English in France, I now and again get the opportunity to buy your magazine and enjoy watching the evolution of hi-fi, particularly being as sensitive as I am to the criteria used by the British to judge it.

I bought my present system in 1976 when I was an Assistant in a school in Chelmsford, Essex. It consists of Quad 33/303 combination with FM3 tuner, a Luxman PD750 turntable and MA1 Series 2 speakers. Later I added a Teac 3300 reel-to-reel machine and a Philips CD350 player. I must admit that I've

**Write in with your problems to Hi-Fi World, 64 Castellain Road, Maida Vale, London W9 1EX. Our panel of experts will endeavour to solve them or at least offer some practical advice.**

been fairly satisfied with the equipment but I now realise that it's time to change a few things.

First, my Quad 33/303 produces a little noise through one of the speakers when I switch it on and I must say I miss a second tape input - I forgot to mention my Sansui cassette recorder - and a headphone socket, so:

- 1) I keep this combination, but where can it be checked, either in France or Britain? Can it eventually be bettered by changing any of the amplifier's components?
- 2) I change the 33 pre-amp; in that case do you know any well-equipped and decently-

priced pre-amp that would match the 303 (how about a NAD or Rotel?).

3) Replace it by such equipment as a Pioneer A-400, Denon PMA-450, Aura VA-50 or NAD or Rotel pre-power combinations.

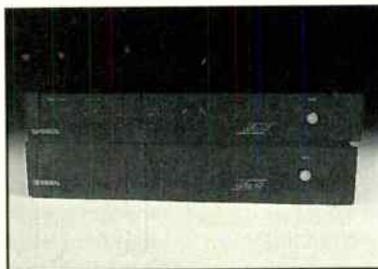
Then the speakers. My MA1 Series 2 deliver a fine sound but occupy too much space. So: either I use them in another room (but are they compatible with any of the amps mentioned before) and buy a cheap pair of wall-mounted speakers for my living room such as Maxim 3s, Celestion 1s, Mission 760s, Solids, or even Linn Index on stands? Or buy an expensive pair of small speakers such as Linn Kan IIs or Rogers Studio 3s? My living-room is 3m wide, 5m long and 4m high.

As for my Philips 350 player, it now appears a Middle Ages product and I am

now open to suggestions in the £200-£300 bracket - or eventually a cheap CD player to match the QED Digit convertor.

To sum up, would you be so

kind as to recommend a shop in Kent that would be likely to supply the equipment you advise who would be able to service it effectively if needed. **David Marshall, Tourcoing, France.**



Sugden's bargain priced AU41C/P.

A spot of noise suggests the capacitors need replacing in the 303; Quad's agents in France are:

ATL,  
104 rue Louis Ampere,  
BP 77 ZI Les Chanoux,  
9330 Neuilly-s-Marne.

Despite some scepticism on my part, a London dealer suggested to me some years ago that a Quad 34 pre-amp was a good partner for a 303 and so it proved. However, a more effective upgrade for your purposes would probably be Sugden's AU41C/AU41P pre/power combination. This should drive almost anything, but if you like the idea of Kans, the Rogers Studio 3s could be a very good choice, with them being unobtrusive in size and of true monitor quality.

The Philips CD player is now about due to be pensioned off. While you should aim for the best possible, within your price range look at the Yamaha CDX-860, Rotel RCD-965BX and Kenwood DP-7040.

It's not our practice to recommend particular dealers, but among others, Sevenoaks have branches in Kent with a reasonable range and they have service facilities. **EB**

I once owned a 33 and 303, way back in the early Seventies. I had suffered three Cambridge P50 blow ups, then a Lux amp keeled over and died on me. The dealer thought I was jinxed, so he suggested I buy Quad instead. He was right; those Quads soldiered on beautifully for

years. In the end they were replaced by more lucid sounding components.

What I have always regretted however, is the fact that I then passed the Quads on, rather than keeping them (as I did a Garrard 401). The 33 is, for me, the best designed and built preamplifier I have ever encountered. Its sculptural front panel (a one piece casting), that illuminated Quad light, the big drum volume control and the sheer dependability made a lasting impression. I've been a died-in-the-wool Quad fan ever since. The moral of this tale is: **don't throw your Quads away. That's sacrilege! Give them a happy and appreciative home or consign to loft or even consider having the circuits replaced.** **NK**

**A GOLD DELUSION**

My current system consists of a Micromega Solo CD player, Sound Organisation table, QED passive pre-amp feeding the power-amp section of a NAD 3020. I realise that this is a very modest amp and I have tried a number of more expensive amplifiers of the transistor/MOSFET variety.

In short, I find that, particularly with a CD source, so many amplifiers urge you to go for the 'Off' button after a



The reference grade, Audio Synthesis Passion.

while! I read your Mullard kit article with great interest and would very much like to try valve amplification. (Construction would not be a problem.) Is there a particular high-quality volume control better than the QED?

Having used a variety of speakers, including LS3/5as, I found myself inheriting a pair of good-condition Tannoy 10in Little Gold Monitors. They

came complete with solid, sand-packed 22in high, 9in square, MDF spiked stands.

So often one hears unfavourable comments about this range of relatively modern Tannoys, hence I wasn't in a hurry to try them. When I did, I got a surprise! Even with a modest amplifier they sound well-detailed, clean with a good sense of scale and attack. The feeling of stereo imaging and depth is good. I thought that they would be just 'big and loud' but it seems that fed with the right source these loudspeakers can sound good in hi-fi terms.

Is this something that you can confirm? Am I deluding myself? Is the imaging really that good? How should they be positioned? I realise that Tannoy now make a new model, but they are, after all, still standard in many studios. My musical tastes include Rock, Jazz and orchestral music.

**Rupert Robertson, London W14.**

**Yes, there is a better passive pre-amp than the QED: it's the Audio Synthesis Passion, which by repute has the virtue of seemingly not to exist at all. As a kit, it costs just under £500 and allows for input selection. If you want to take another approach, and restrict yourself to one source only, you**

**could acquire a Penny and Giles pot (10kohm or 15kohm), install it in an aluminium case and hardwire the output cables from CD into it.**

**Either would outclass the pre-amp section of the NAD, but possibly not the Mullard design. Why not try it?**

**I agree with you about the Tannoys, but I've never heard them in**

**a domestic environment. If you're hearing good imagery, then whatever you've done, you must have done it right. I don't think you're deluding yourself.** **EB**

**A Penny and Giles potentiometer will cost you around £70, they have a wonderful feel to them and are very reliable but for £20 or so you can purchase an**

**Alps 50kΩ that reputedly sounds every bit as good. This particular pot is used by Quad, Naim, DPA Digital etc which is as good a recommendation as you could ask for. As Eric points out an aluminium box can be used to mount the pot in, which will shield out RF noise. But if hum is a problem, steel can be used as an effective screen.** **DB**

**IMPROVING MISSION**

I would like to improve my CD sound quality and am considering the likes of the Sony CDP-X339ES, JVC XLZ-1050, Micromega Logic, Marantz CD52SE and Arcam Alpha Plus. I would like better transparency, imagery, clarity etc. and a well-timed, tuneful, clear bass. This all has to be



The Cyrus I Series 8 is not electronically similar to the Cyrus 2.

done within the limitations of my amp, speakers and budget. I listen to most types of music, but especially soft rock, acoustic blues and reggae. My system comprises NAD 5325 CD, Cyrus II amp, Tannoy 605s, Furukawa speaker cable and Ixos interconnects.

Also, could you tell me if the Series 8 circuit board as found in the Cyrus I is in the new Cyrus II, as I am unsure if I have been sold an old II or a new one. Mission themselves said the II does not have the board, so if not, why not?

**Alan Scott, Hemel Hempstead.**

**One reason why not, I suppose, is because the Cyrus range has just been re-worked. Of the CD players you mention, I would favour the Micromega, with the JVC second.** **EB.**

**The circuit board in the Cyrus I is completely different to the one in the Cyrus 2. The 2 offers considerably more power and can be upgraded with the addition of a PSX**

**power supply. If a series 8 board was fitted to your Cyrus 2 it would sound identical to a Cyrus 1 with 2 written on the casework. I wouldn't worry too much about which version of Cyrus 2 you have. The upgrades are minor and in many cases simply aesthetic. I have a friend who owns a Cyrus 2 that he bought in 1988 which still sounds fantastic when compared to many more modern alternatives.** **DB**

**JAPANESE TRANSLATION**

As a matter of record I am 32, currently work for an Italian Merchant Bank and have been involved with hi-fi since 1990. Before that year my ears only understood Japanese.

I listen to music (Classical, Rock, acoustic Jazz) in a wide and irregular living room which possesses a lot of corners. The floor is carpeted and furniture is sparse. I have always experienced bass control problems, therefore this has been one of the key factors in system building.

An upright piano is located roughly between the speakers and I can assure you I was not able to find a different location. (My wife would not allow any change in the room layout and heartily hates cables, stands, speakers and generally anything resembling hi-fi equipment.)

Until January 1993 my system comprised the following equipment: Rotel 965 BX player Audio Synthesis SilverBlue cable (co-axial input) Orelle DA 180 DAC (offered only a marginal improvement over the basic Rotel) Audioquest Turquoise analogue cables Musical Fidelity A120 amp Van den Hul CS 122 speaker cables Snell K II speakers (Blue-Tak'd on Target stands)

The sound coming from the A120 was generally appreciated, even if some weakness in the low band were present (by the way, my wife loved its styling) and sound tended to become harsh at high volume. (Maybe the amp did not like

become harsh at high volume. (Maybe the amp did not like the Snells' 4 ohm impedance.)

In December I started visiting almost all the (few) hi-fi shops in Rome, looking for an amplifier more balanced in the bass, always bringing with me the A120, the Snells and, sometimes, also the Orelle and some friends. It was a really painful process, which I remember with discomfort.

After having auditioned fifteen integrated and pre/power amps I decided to purchase an Exposure XV, which, at least in the dealer's room, in two listening sessions offered the best balance between bass performance and upper-mid detail. Runners-up were the Triangle Nemo Ailion and the Audio Innovations 500. On both occasions, maybe I made the error of not taking the Orelle with me (the dealer had run out of the DA180), therefore the Exposure was fed from a Marantz CD62.

Once at home, however, I was frankly disappointed. The Exposure is capable of depicting bass frequencies with a level of detail and control that simply can't be compared to the A120, but - and here is the downside - the midrange is absolutely veiled and pushed to the back of the stage. As a consequence - for example in Rock tracks - vocals and drums have a smaller presence, cymbals lose crispness, singers seem to be concealed behind a curtain. In very few words, the overall sound is dark and somewhat lifeless.

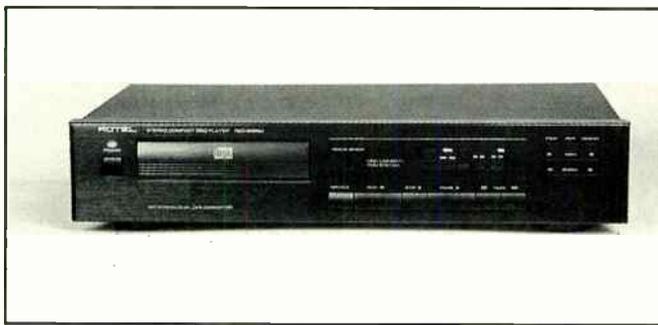
Eliminating the DAC, swapping cables, moving the speaker around or adjusting the tweeter output did not help. Moreover, my system is now very dependent on record quality, in the sense that poor recordings sound harsh and disarticulated.

So I ended the second Exposure week exposed to my wife's blame, deep in frustration and rather annoyed about the time and money spent. (In Italy Exposure is one of the most expensive brands - the XV costs £1,090. Yes, your sight is fine!) My frustration is further compounded because, excluding the mid-range 'hole' the system shows the potential to perform much better than previously. My problem is therefore to find a way - if one exists - to 'restore' the mid-range which, in my estimation,

has lost 30-50% of its impact.

It could seem that this type of music presentation has something to do with one or both the following factors: my living-room exaggerates low frequencies, so bass tends to mask mid-range, which consequently falls back at any given volume level; the frequency responses of both the Orelle and the XV somewhat attenuate the mid/high frequencies so that the effect is compounded.

I am currently thinking



**Rotel's 965BX CD player was not significantly improved by the addition of an Orelle DA180 DAC.**

about three alternatives which all involve the replacement of some equipment, namely 1) the amp, 2) the DAC, 3) the speakers.

I would replace the amp only if absolutely necessary, because it could turn into a costly deal. Within the same price range, the Exposure dealer only stocks the YBA Integre, which I never auditioned, and the Audiolab 8000C/P, which I do not like. Then there is the mid-price stuff from Arcam, Creek, Mission, Orelle and QED. Tested in my home, the Audiolab 8000A sounded too similar to the A120 to be worth a replacement. Taking the Exposure to another dealer to swap it for the Triangle Ailion would cost me £550: I think my wife would appropriately ask for a divorce.

The second alternative is to replace the Orelle DA180 with a convertor which presents some emphasis in the mid-range. This could be necessary, because as mentioned above, connecting the Rotel to the XV did not bring any improvement. Moreover, I think that buying a quality transport would help the overall picture, but not the specific point. So, the question is about a brand/model of DAC, provided that it can bring about a tangible effect.

The last choice is speakers. I generally appreciate my Snells (90dB, 6 ohm - 4 minimum), even though I think my hypothetical deficiency in their mid-range delivery could possibly have been masked by the A120's impressive mid-range performance. I thought about replacing them with a smaller 'quality' speaker designed with a so-called 'forward' midband. Here I am referring to models like the Acoustic Energy AE1 or Monitor Audio Studio 6;

maybe the LS3/5a has too low a sensitivity for the 35watts of the XV. Since, however, these speakers are quite expensive, I am very reluctant to take a blind step. (No dealer would allow me to take any equipment home, even upon depositing the price.) Moreover, I cannot figure out what kind of improvement I should expect from a passive component like a speaker: if some information does not pass through the amplifier, how can a speaker recreate it? **Mauro Benedetti, Rome, Italy.**

**What a pickle! There are two problems, here; one is that you have inflicted upon yourself a degree of transparency which you were not aware of before. Some recordings, alas, do indeed sound as you have described. Changing the DAC I doubt will improve matters; digital replay is much less susceptible to the kind of mid-band enhancement you are after. A DPA Bigger Bit might offer an improvement on the Orelle, in this respect, but this kind of fiddling is unlikely to change the overall balance enough. To save your marriage - and your bank balance - I think you should consider a change of speakers. Not knowing what**

is available in Italy, it's difficult to advise, but I would try the Rogers Studio 3s.

That piano of yours is in a confoundedly awkward place, I must say, and I'm sure it is partly responsible for the problem. Since you live in Italy, it occurs to me that the Sonus Faber Minuetto - which has an excellent mid-range - could be worth trying. Either should appear more forceful and bring the Exposure's current too laid-back sound more forward than the Snells, hopefully handling the room resonances better. No loudspeaker - being essentially a mechanical design that moves air - is actually transparent. As you have correctly diagnosed, some do indeed 'hide' some areas of the frequency response while illuminating others. In this case, the various compromises obviously don't come together. This is all rather unfortunate; at worst, how do you feel about giving up hi-fi and taking up the piano? **EB**

I believe that I am correct in saying that Exposure strongly recommend their own loudspeaker cables. Bearing in mind that the amplifier will have been designed with these in mind and vice versa I too would strongly recommend that before you change anything, change the loudspeaker cable. If you are lucky this may bring about the change you are looking for at a price that just might save your marriage. **DB**

#### TO EXTINCTION

My current system is as follows: Linn LP12, Ittok LVIII, K9; NAD 5420 CD player with Linn interconnect, Arcam Alpha amplifier (old model) and Linn Index Plus speakers (old style) on Target stands connected using Naim NAC4 cable.

The LP12 is a recent upgrade from a Rega Planar 3 as my music collection consists mainly of vinyl, which I hope to purchase 'till it becomes extinct.

However I am a little uncertain how to proceed with future upgrades. With a budget of £1000 would I be advised to continue to improve the LP source by adding a Lingo power supply and a modest amplifier such as an Intek or



Once more, for good measure, the Epos ES11s may provide the solution.

my budget or a pre/power combination such as a Naim 62/90 or 140 or a Linn Pretek/Powertek or LK100?

Although traditional views would suit the former route, my feeling is that it is the Arcam's lack of real power and control that is letting the side down at the moment. I also feel that improving the turntable source alone does smack of putting all my eggs into one basket and does nothing to assist in getting the best out of my other source components.

Alternatively, I could purchase the Intek/Nait and spend the rest on a pair of speakers such as Epos ES11s or ES14s, Rega Elas, Linn Keilidhs or Tannoy's floor-standing Sixes. Would such an improvement in amp and speakers begin to embarrass the capabilities of the NAD CD player or get the best out of it? By the way, I do not intend to improve my CD source in the foreseeable future until I have a large enough CD collection to warrant it.

My musical taste is very varied, but my current favourites are Mary Black, Gregson and Collister and Nancy Griffith as well as more mainstream artists such as REM and the B52s.

**A. Hawkins,  
Rochdale,  
Lancs.**

As you suspect, your amplification is already outclassed by the LPI2 front-end, though since you concentrate on vinyl, I would suggest an amplifier upgrade. That will

leave your CD player in the cold, but unless you feel a sudden urge to splurge on silver discs, the NAD can wait.

I would go the whole hog and take on a Pretek/Powertek, a better upgrade than the Intek. This is, of course, providing the sound with the Indexes suits - since they belong to a different Linn era. I wouldn't

like to guarantee it, but they should suit.

However, erring more on the side of caution, and gaining two upgrades instead of one, I understand that the Intek and Epos ES11s together balance each other well - more so than the Epos and Nait combination. I would certainly try to audition this combination, as I suspect it will suit you and your choice of music well. It has the Linn strength of a good phono stage, too, which is all-important here. **EB**

**CASSETTE QUERY**

Can you help me with a small problem that my brain can't fathom with reference to cassette tape. The way I understand it is like this: when we make a recording the machine attenuates the high frequencies and then boosts them again on playback. 120µS giving the greatest amount of cut and boost and 70µS giving the least. I am given to understand that the reason for this is to help prevent tape and head saturation. But it has a downside, in that by amplifying the treble on the tape back to its former glory we also amplify the tape hiss.

Enter Dolby B noise reduction to compensate for this additional hiss.

So now the story reads like this: to record, Dolby boosts treble, EQ cuts treble. To play back, EQ boosts treble, Dolby cuts treble.

All-in-all I can't see the point. Please help just so that my mind is at rest. To me it just seems that a lot of

processing is going on for no good reason.

And what does '120µS' and '70µS' mean (related to dB cut and boost)?

**D. Pitts,  
Crawley,  
W. Sussex.**

This is a confusing subject, because the replay equalisation curve incorporates various compensations. It is the overlaying of replay head high frequency loss compensation with basic music energy spectrum compensation, applied to reduce hiss, that results in an overall lift characteristic. Taking out head compensation, the replay equalisation curve of a cassette deck cuts treble frequencies, 120µS providing less cut than 70µS and therefore less boost is needed during the record process. As a result, noise is greater, by around 3dB in practice. These various characteristics are shown in the diagrams, replay equalisation without head loss compensation being shown at the bottom.

The amount of high frequency record boost is decided when tape standards are set by committee - these days usually the International Electrotechnical Commission.

The rough order of things with Compact Cassette was that when released in 1963 by Philips a replay treble cut curve of 120µS was specified. This was tailored to complement the limited boost that could be applied to ferric tapes of the period, treble overload due to magnetic saturation being a severe limitation in the recording process.

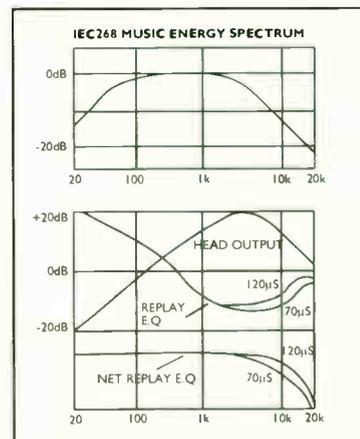
The introduction of chrome tape, able to accept higher stronger treble signals whilst recording, caused the 70µS standard replay curve to be introduced, which introduces more cut (in fact less boost) in the replay amplifiers. Therefore more boost is needed in the recording amps and hiss is suppressed by a commensurate amount. That's one reason why chrome tapes are quieter than ferrics.

So the equalisations applied have sought to progressively reduce tape hiss over the

years and they do act in concert with Dolby noise reduction, which works in a different fashion.

What I haven't explained, for fear of turning all this into a fearsomely complex technical explanation, is the reason for using 120µS, then 70µS, in the first place. Because the treble energy in music falls off progressively with rising frequency, as the IEC268-1 energy spectrum curve depicts, hiss becomes more obvious. Boost is applied to keep high frequencies well above the hiss floor. When an equivalent amount of cut is applied during playback to restore the signal back to its original balance, hiss is cut by an equivalent amount.

There's always an argument about this process with tape, since various compromises have to be decided upon. When metal tape was introduced, which has greatly improved treble overload headroom, a third EQ curve was not introduced. This had the effect of offering no improvement in hiss level, but allowed the full improvement in overload headroom to be exploited, one being tradeable against the other. By allowing higher treble recording levels

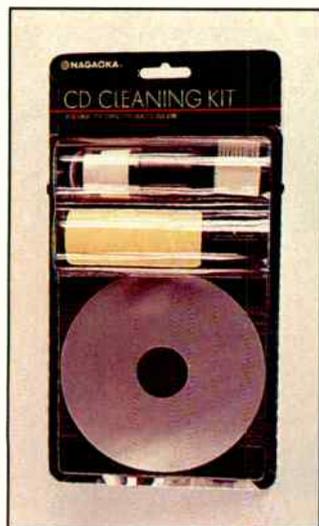


Top: the typical energy spectrum of music. Bottom: head output response is also compensated for by the replay E.Q.. The net result is treble cut.

to be used, hiss has effectively become less noticeable all the same though.

The time constant specification in microseconds (abbreviated to µS) refers to that of resistor/capacitor network that will produce the required electrical boost/attenuation characteristic. **NK**

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LP SLEEVES (50) .... PRICE £7.50

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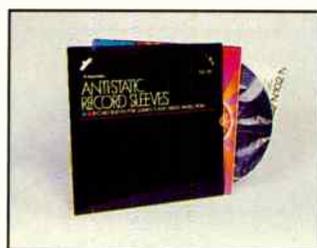
Careful manual cleaning is the most effective way of removing surface contaminants. Nagaoka's kit includes a solvent and chamois leather pad to bring back a pristine shine to Compact Discs.

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this interference, improving sound quality.

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Keep your stylus sharp and bright for perfect tracking without using fluid. Cut a strip about the size of a matchbox striker off this sheet of card and draw it gently under the stylus from back to front.

One sheet of this card, with its aluminium-oxide micro-abrasive coating, should be enough to clean your stylus at least forty times.

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Made in the UK, this simple record cleaner uses a replaceable roll of sticky tape which lifts dust out of the groove. After use, the dirty length of tape can be peeled off, reducing the risk of any gritty particles picked up being ground back into the vinyl.

When the tape runs out, a new roller is simply clipped in.

PIXALL MARK II ..... £10.75  
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# Hi-Fi World AUDIO ACCESSORIES

accessory offers



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A simple but effective cleaning kit, consisting of a stylus brush and cleaning solution. Used carefully, it will keep your stylus sparkling.

**STYLUS CLEANING KIT**  
£2.50

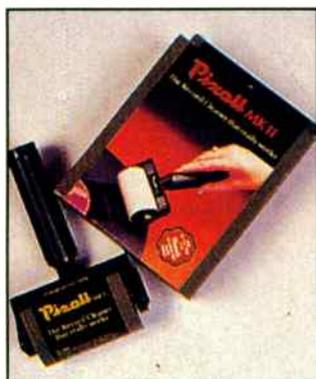
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TDK's CK-A1 head cleaning kit offers two bottles of cleaning fluid, one for the heads, the other for the rubber pinch wheels, and cotton buds for applying them. The CK-TB kit has a single bottle of dual-purpose fluid.

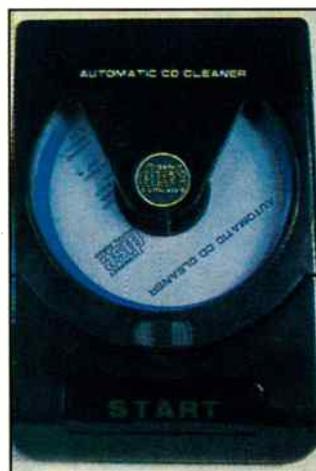
**TDK HEAD CLEANING KIT CK-A1** ..... £5.50  
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## AUTOMATIC CD CLEANER

About the size of a portable CD player, this battery-operated disc cleaner spins the disc while two replaceable sponges clean it radially. Spray the CD with the cleaning fluid supplied, insert it into the



**Record storage cubes**



machine, and the cleaning cycle is completed in twenty seconds. Supplied with washable foam cleaning pads and cleaning solution (but not batteries) the cleaner can be powered by any standard transformer like those used for Personals with a 3v dc 350mA output.

**AUTOMATIC CD CLEANER**  
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# Hi-Fi World

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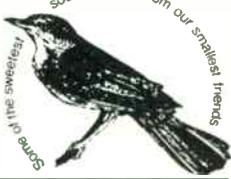
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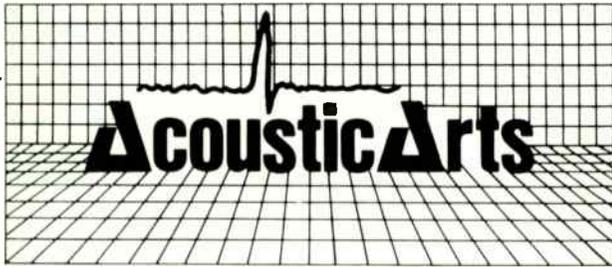
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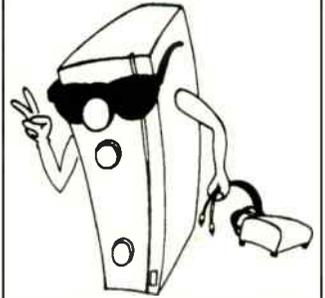
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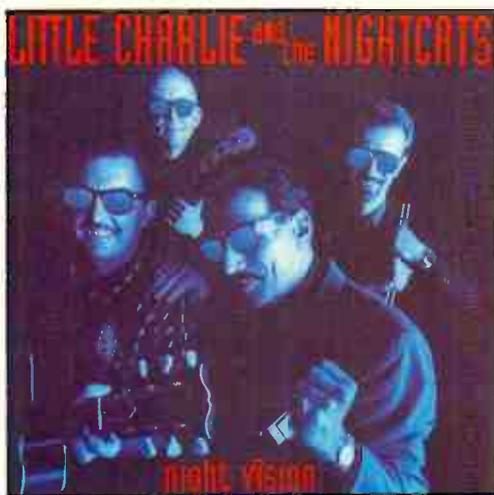
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# Blues Music Days

EDITED BY  
JONATHAN JORDAN



**LITTLE CHARLIE AND THE NIGHTCATS**  
**Night Vision**  
ALLIGATOR ALCD4812

● Little Charlie and The Nightcats' record company describes them as a blues band that takes having fun very seriously. The Chicago Reader spoke of their music as "party exuberance in a context of superb musicianship - these guys have the ability to have a notous good time and still not compromise either intelligence or musical seriousness." I wouldn't argue with either sentiment.

Guitarist, Little Charlie Baty, leads his band through a selection of thirteen songs on this album produced by blues legend Joe Louis Walker. This is their fifth for the Alligator label, now distributed in the UK by Topic Records.

Baty is an eloquent player: Robert Cray is said to be a fan and John Lee Hooker is reputed to have told Baty "You're dangerous with that guitar, man. They're gonna put you in jail."

The scope of his playing ranges from the dextrous flash of tracks like 'Buzzsaw' to the tasteful and considered acoustic grind of 'Cryin' Won't Help You'. The music itself, although blues-based throughout, shows a similar diversity, drawing on strains of jazz, jump-jive, rockabilly and all points in between.

In this respect Charlie has much in common with another of my personal favourite players, master craftsman Duke Robillard. His playing isn't monochromatic, nor is it derivative or predictable; he leaves himself open to melodic and dynamic divergence rather than doggedly treading the well-worn pathways of traditional blues guitar.

Far too many players' idea of improvisation is 'aping' the mannerisms of an established stylist rather than allowing their instrument to say something original. Baty avoids this trap. His influences shine through his music but they don't dominate it. His solos can be real eye-openers: he'll take a line to the point where one careless move would cause the whole thing to tumble; then he rescues it from the brink of disaster with change of direction. And the beauty of it is he doesn't flaunt his dexterity with an air of practised showmanship - there's no contrivance in his playing and his sense of humour and devotion to having a good time is evident in every note and phrase.

Baty is a 'guitarist's guitarist' but his skills don't mean that his playing is impressive but boring. Listening to him work a tune is fun; it's not a brain job.

**Malcolm Steward happily ventures between such extremes as Country 'n' Western and live African Dance music while also encompassing Grammy Award winning producer Daniel Lanois' latest album.**

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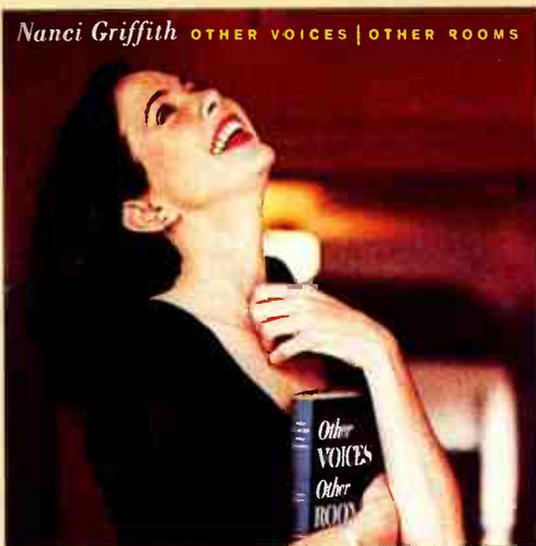
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Rock + Pop. ▶▶

Record of the month

**NANCI GRIFFITH**  
**Other Voices Other Rooms**  
**MCA**  
**MCD10796**



● I'm not particularly keen on Country music but I'll admit to liking some of the stuff that falls under the New Country banner - people like Steve Earle, Lyle Lovett and Joe Ely. I also have a special affection for Nanci Griffith, one of the genre's few female practitioners I can appreciate. Fortunately, we're not talking implausibly large chests here: Griffith's appeal stems not from silicone implants but from her voice, which could melt the most cynical of hearts.

A common thread linking the songs featured on her new album, *Other Voices Other Rooms* - a title lifted from Truman Capote's first novel - is that they're all old songs that Nanci wants to keep in circulation. In the accompanying booklet she recalls a conversation with Emmylou Harris where the latter remarked that for songs to stay alive they need "new voices to sing them in places they've never

been sung." Those here are all personal favourites stemming from Nanci's childhood days right up to the present and her performance reflects her admiration and respect for their writers.

The collection includes music written by luminaries such as Kate Wolf, Townes Van Zandt, Bob Dylan, John Prine, Ralph McTell (not, I'm pleased to say, the woeful 'Streets of London'), Tom Paxton, Woody Guthrie, Janis Ian and others. With the notable exception of one track, I wouldn't question the

inclusion of any of the seventeen selections: but I would like to know why she chose to resuscitate 'Wimoweh'. This song sounds especially dismal when it's in the company of far more worthy material like John Prine's 'Speed Of The Sound Of Loneliness', Tom Paxton's 'Can't Help But Wonder Where I'm Bound', and Woody Guthrie's 'Do Re Mi'.

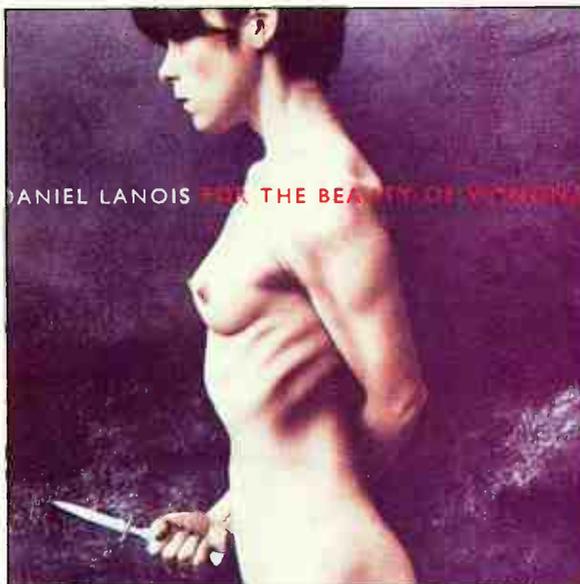
Even Leo Kottke's twelve-string and the combined vocal talents of Odetta, The Indigo Girls, John Prine and a multitude of other voices can't

salvage this dirge, which I'd love to see buried along with 'Granddad', 'Shaddupa Your Face' and anything that was ever recorded by James Last!

That minor quibble aside, I love this old-fashioned recording of old-fashioned songs played by old-fashioned musicians - the Country New-Wavers seem to appreciate that real-time recording and conventional instrumentation can still do stuff that synths, samples and post-production can't improve upon.

**DANIEL LANOIS**  
**For The Beauty Of Wynona**  
**WARNER BROS. 9362-45030-2**

● The last time I typed the name Daniel Lanois I followed it with a stream of vituperation. I was reviewing Lanois' production of U2's 'Achtung Baby' and my comments went along the lines that there were a few respectable songs on this album but they were having trouble fighting their way through Lanois' treacly, swimmy production. Everyone except me, it seemed, viewed the album as a new age masterpiece; I



that Lanois' latest album in his own right isn't as wet as a boxer's socks. It sounds relatively dry and natural - although he seemingly couldn't resist recording the drum beat that punctuates the opening track, 'The Messenger', by sticking the instrument in the Grand Canyon and dangling a microphone over the edge. Atmosphere junkies will love it but it'll infuriate pedantic purists who like the sound of drums played in a room - not at the bottom of an abyss!

The music that constitutes "Wynona" is easy-going and melodic;

thought it sounded pretentious and impotent.

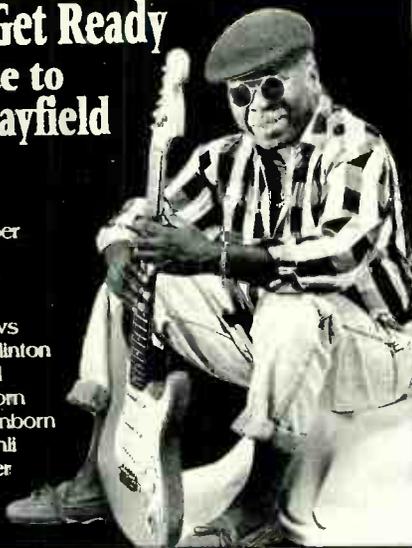
I'm not saying that I dislike Lanois' production methods, full stop. I respected and enjoyed his work on Robbie Robertson's 1987 eponymous album, but I found that particular U2 annoying; what I term a definite case of music killed by over-generous reverb and sound effects trickery. It comes as a pleasant surprise to find

rather like the Rain Tree Crow album but without the electronics and found sounds. Lanois emerges from the recording as guitarist and singer of some taste and discrimination. It's probably not the sort of disc you'd use to enliven a flagging party but it has its livelier moments that add a little piquancy to what is generally a relaxed, contemplative but engaging set of songs.

Rock

## People Get Ready A Tribute to Curtis Mayfield

featuring  
Jerry Butler  
Don Covay  
Steve Cropper  
Lani Groves  
Michael Hill  
Huey Lewis  
& The News  
Delbert McClinton  
Vernon Reid  
David Sanborn  
Jonathan Sanborn  
Angela Strehli  
Bunny Wailer  
Kim Wilson



### VARIOUS ARTISTS People Get Ready - A Tribute To Curtis Mayfield SHANACHIE 9004

● I'm not an uncharitable soul, but it takes more than just a good cause to persuade me to buy a record. Faced with the choice between simply mailing a cheque to some needy organisation or buying a disc of dubious worth, from whose proceeds a deduction will be made, I'd sooner send a contribution direct. Let's face it, most benefit discs aren't worth the shelf space they occupy, but here's a genuine exception to that rule.

Fifty per cent of the royalties from this record will help Curtis Mayfield, who has had more than his fair share of bad fortune recently. He faces huge medical bills after an on-stage accident left him paralysed and confined to a wheelchair. To make matters worse, a fire then destroyed his home and forced him to move his family to a hotel.

The disc acts as a forceful reminder of Mayfield's prodigious talents as a songwriter - along with those he enjoyed as a performer and producer. Since the sixties his music has influenced generations of musicians across the world, from the founding fathers of reggae to today's rappers and hip-hop descendants. His writing and vision have influenced all manner of music, from film scores to funk. Eleven of his compositions are performed here by a cast that includes Don Covay, Delbert McClinton, Huey Lewis, Vernon Reid, Steve Cropper, Lani Groves and Bunny Wailer.

Each chose the song performed on the album and the selections lose none of their impact despite the diverse treatments they're accorded: compare Huey Lewis and The News' acapella version of 'It's Alright' to Vernon Reid and Michael Hill's Hendrix-inspired rendition of 'We People Who Are Darker Than Blue'.

The extraordinary quality of Mayfield's writing is reinforced when you try to pick favourite tracks from the album: do you choose the unabashed romanticism of 'Um, Um, Um, Um, Um, Um', the perceptive social commentary of 'Choice Of Colours', the beautifully articulated argument of 'We People Who Are Darker Than Blue', the inspirational 'People Get Ready', or the

straightforward soulfulness of 'I'm So Proud'. It's near impossible to make qualitative judgements.

This is one disc that's not to be missed. Buy it and bask in the satisfaction of listening to truly great songs and helping out the truly great artist who wrote them. No matter which way you view it, you won't regret this purchase.

### KANDA BONGO MAN Soukous in Central Park HANNIBAL HNCD 1374

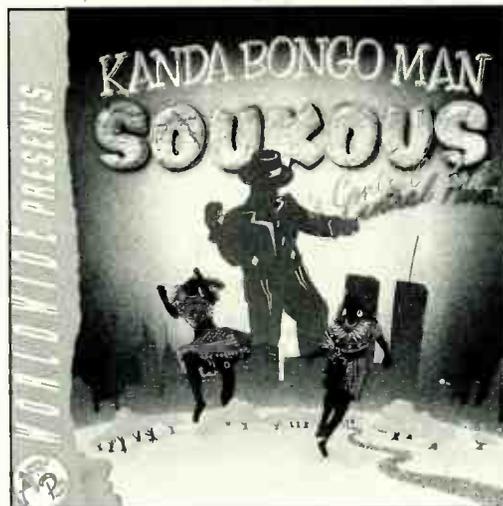
● I had plenty of pinches of salt to hand after reading on this CD's liner notes that the disc featured "The greatest showman of African music in a scorching live set... Kanda Bongo Man's show is non-stop ear-to-ear gnn, hip-gyrating dance music". What do you expect to read on an album - that the artist's not bad and the show recorded here was just about passable? You expect - and normally get - some degree of exaggeration.

However, on this occasion you can believe the hype. What you'll hear on

this live recording suggests that Kanda Bongo Man probably is one of Africa's top showmen. While you can't see him in action - I'd love to see a video of this gig - the images conjured by his exuberant performance suggest he's giving the audience exactly what it wants and a good deal more!

The set cooks from the high energy opening, 'Liza', right through to the athletic 'Lela Lela' that closes the eight-track disc. Even the slower rumbas like 'Yesu Christu' have a rhythmic urgency that guarantees you won't be able to sit still for long. Most of the credit for the infectious drive goes to guitarist Nene Tshakou; this guy's playing is magnificent, animated but superbly fluid. Bassist Ahmed Bary doesn't get the same prominence in the mix but he makes his presence felt nonetheless. With drummer Fio, who scatters beats with an audacity that's remarkable, Kanda's rhythm section has to be one of the hottest you'll hear.

If you've never sampled the music of Zaire there couldn't be a better introduction than this. One hour, two minutes and thirty-two seconds' worth of unadulterated joy!



Rock + Pop.

Giovanni Dadomo

Rock + Pop.



**DEACON BLUE**  
**Whatever You Say, Say Nothing**  
**COLUMBIA 473527 4**

● I have to confess that if I had been asked out of the blue, I would have dismissed this lot as a bunch of Gaelic geezers who seemed to have spent more on their hairstyles than on their recording sessions...!

Happily, this is not the case and I am more than happy to instantly remedy the potential injustice. 'Whatever...' opens with the scathingly lyric'ed 'Your Town' and it gets just better and better. 'Only Tender Love' is like U2 with a testosterone injection: all passionate vocals and anguished guitars and bass. 'Peace & Jobs & Freedom' is all funky gee-tars; more wonderful heartbeat bass and aching vox!

And so it goes. Graeme Kelling on guitars, Lorraine McIntosh and Ricky Ross supplying vocals, Dougie Vipond drums and percussion; Keyboards by James Prime and Ewen Vernal on bass.... I take off my Tam o' Shanter to you! But one last piece of advice: Listen to more 'Keef' Richards and less Dire Straits and the next album will be even better.

Speaking of the spirit of the great early Stone, if 'Hang Your Head' isn't a hit I'll eat my proverbial hat! Bobby Gillespie, come on down!

**FRANK BLACK**  
**Frank Black**  
**4AD CAD 304 CD**

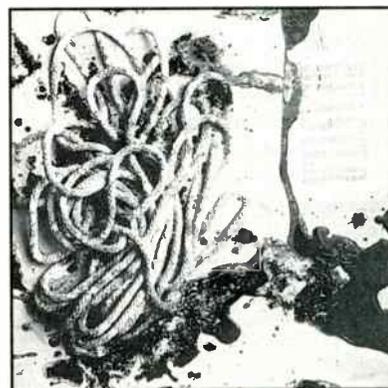
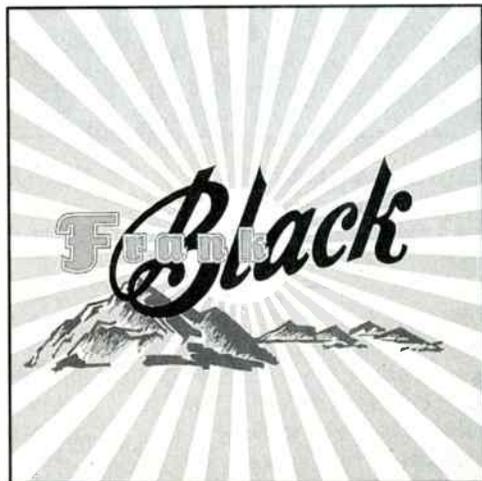
● This is a magnificent debut solo album from Frank Black who was the crux of indie giants The Pixies, whose 'Surfa Rosa' was one of the-oo-er, Missus, - Seminal albums of the last ten years. All their later work paled by comparison

(inevitably so) but this new platter is an amazing return to form for Mr. Black. There are thundering guitars to die for, there are wild and wacky lyrics galore and there are consummately brilliant hooks by the cart load!

Who else in current popdom could write a song about a moustache and make it work? Frank does exactly that with the sublime 'Fu Manchu'. Who else could take an obscure Beach Boys song and give it a heart-thumpin' new lease of life? Frank does just that again with 'Hang On To Your Ego', an alternate version (modified lyrics) to a Brian Wilson classic.

There's the disarmingly titled 'Tossed' - a somewhat sublime instrumental- all fat horns and mutated Chuck Berry guitarings; there's the heart-wrenching 'Adda Lee', which has to be heard to be beloved and there are such bizarre outings as 'Parry The High Wind, Low'. Black's typically quirky tribute to the Ramones: 'I Heard Ramona Sing' is achingly beautiful and as far as I can hear any musical similarities are purely coincidental.

There's just so much good - no make that GREAT- music here that I'm to:ally flabbergasted (what the hell does that mean!). But seriously folks, this is definitely an Album of the Year, no mistake. Or as the dyslexic Dalek used to say: "Investigate! Investigate! Investigate! Amen!"



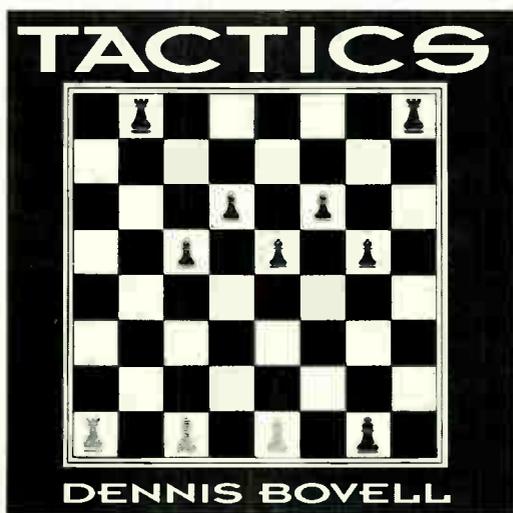
**SUGAR**  
**Beaster**  
**CREATION CRE CD 153P**

● Sugar's outstanding debut album 'Copper Blue' was nominated for record of the year acclaim by numerous critics (including this one). Now, surprise, surprise, there's a sudden second instalment in the Sugar story. The band is the Brainchild of Bob Mould, who as the creative figurehead of Husker Du was one of the eighties most vastly influential and important songwriters and performers. It has been said that he is the godfather of Grunge - whatever that is. But whatever, it is an obscenity to deny Mould a place in the rock 'n' roll pantheon. After all, the man is to put it simply, a god.

Whereas Copper Blue used a broad, varicoloured almost pap palette (it's what artists keep their

paint on, not the thing at the top of your mouth, rival mags please note!) Beaster is an altogether more simple version of the Mould vision. His sleeve notes refer to the darker side of his nature as the source here; this must be true as Beaster features some of the hardest, angriest guitar and vox ever committed to record! It has much more in common with Husker Du's work than practically anything on the last album: primal scream vocals and froth-mouthed guitar being the dominant themes.

Well, its effing great! Check out the manic 'Turn It Tilted', 'The Judas Cradle' in its almighty thunder: "I'm you Jesus Christ I know", Mould hollers. I know one thing: if redemption is possible through rock 'n' roll, then Bob Mould is a saviour! Have a nice Beaster!



**DENNIS BOVELL**  
**Tactics**

LKJ RECORDS LKJ CD 010

● British based reggae artist Dennis Bovell is highly regarded as both a musician and producer - and quite rightly so - as this cream of the Caribbean-flavoured new release ably demonstrates. Bovell can sing, play keyboards and bass, but that hasn't stopped him from bringing in collaborators for practically every other track. The semi-legendary horn genius Rico for example, provides an electrifying spine to 'Backbone'; the ragga-flavoured heart attack rap of 'Thief' come courtesy of Lamin, undoubtedly a future force to be reckoned with.

The classic reggae title track has a touch of girlie back up vocals, a semi Ska beat- I'm reminded of Desmond Decker's immortal '007' and other mod era standards- and the most exquisite horns. Bovell occasionally takes the lead vocals himself: on the brill' 'Oh Mama Oh Papa' he does no mean job.

This is classic West Indian pop, its lyrics replete with a smattering of

artfully incorporated cliches ("Jack and Jill", "Spare the rod and spoil the child", etcetera ) while the arrangement is a sumptuous mix of horns and flute. The vocals on 'Woman' are very Sixties, very jazzy, très warm- a touching tribute to the joys of love and marriage. This is a warm and

**JESUS JONES**

**Perverse**

EMI 7806472

● Perverse is Jesus Jones' third album, and following the success of Doubt it is subsequently their first album that is aimed at their new found audience of millions. It would seem that the music scene has caught up with Jesus Jones; their sound now fits in easily with the

Techno-club's records, radio stations and any other band (using the term loosely) that have happened in the two years since Doubt was released.

Yet they still claim they aren't Techno, just eclectic, experimental and progressive ground breakers! They also like to stay on top of technological innovation, utilising samplers, sequencers, computers, drum machines and the like, recording their labours onto floppy discs. Is it possible that their music may have suffered from

this emphasis on innovation, technological and well heck, just being different? Maybe!

Perverse is quite simply monotonous and dull. It lacks variation in sound and style and is completely devoid of humanity and humour. It is possible to be technology based and dance orientated without being plain dull - Stereo Mcs, the Shamen and even Arrested Development have managed it! It is almost as if Jesus Jones' attempts to be innovative made them forget to be interesting and listenable.

The single release, 'The Devil you Know', is quite catchy, danceable and

has a big epic sound, but the problem is that this is the strongest track on Perverse. The other tracks have none of the immediate appeal that graced 'International Bright Young Things' or 'Right Here, Right Now.' Mike Edward's voice is very, very limited and by the middle of the album it quite simply grates on the nerves. 'Magazine' is boring, weak and a 'filler'

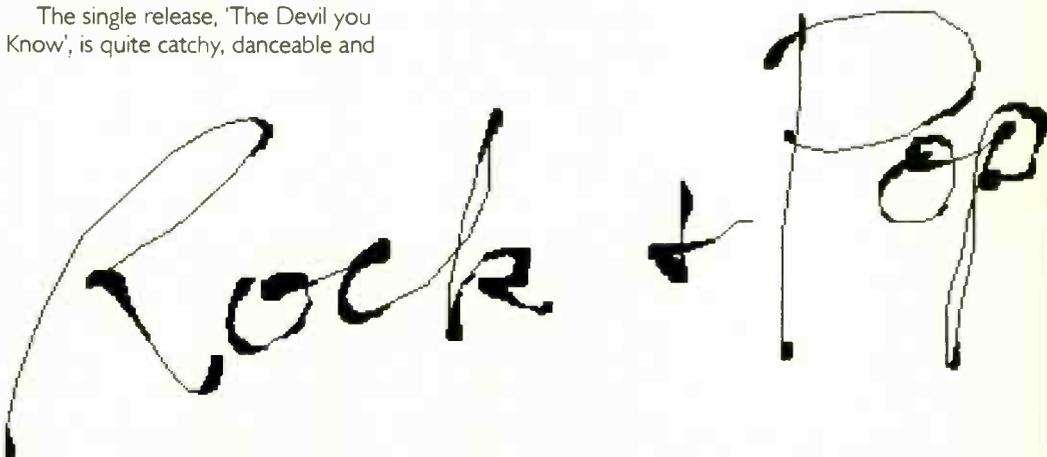


if ever there was one, with crap lyrics too. 'Your Crusade' is like a messy EMF.

In fact virtually the whole album is messy; messy and boring and for me a chore to listen to with only the odd track like 'Zeroes and Ones' providing some relief. It is unfortunate this is the opening track, it promises standards which are only intermittently reached: 'From Love to War', a homage to Depeche Mode, is passable, quite atmospheric and pleasant.

Perverse has its (few) moments of glory but is ultimately a great disappointment. This is not the album that will change rock music in the '90s, a sad contradiction to Mike Edward's motivation. Too often 'Perverse' sounds like ten other bands, but worst of all it is comprised of a few singles revolving around filler material.

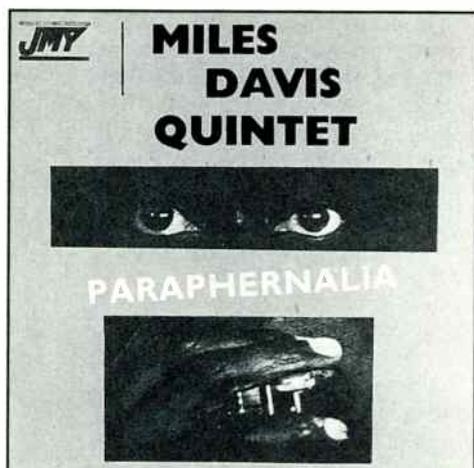
Teresa Bolster



**A transitional Miles Davis in Paris kicks off this month's reviews with Gary Peacock's Paradigm and Pastorius' Jaco also making welcome reappearances, while a debut album by The Shaking Ray Levis takes them into the limelight.**

*Simon Hopkins*

*Jazz*



**MILES DAVIS QUINTET  
PARAPHERNALIA  
JAZZ MUSIC YESTERDAY JMY1013-2**

● Recorded at Paris' Salle Pleyel theatre on November 3, 1969, and only now seeing the light of day on CD, the unofficial and somewhat law-side-stepping *Paraphernalia* is an essential addition to any Miles collection which purports to be even half-way complete. This is a raw, live recording of a genuinely transitional band, a band which goes some way to explaining the monumental leaps forward that Miles would make in the months and years after this date.

From about 1964 onwards, Davis had assembled around him a legendary band. Fronting it was pianist Herbie Hancock, tenor and soprano saxophonist Wayne Shorter and a

rhythm section considered by many to have been jazz' greatest time-playing rhythm section ever, bassist Ron Carter and drummer Tony Williams. Together they begat, defined and then made unimprovable a kind of driving post-bop which gradually dispensed with the chord changes of popular song (the route map which had got most listeners through even the most abstract be-bop).

Replacing them with static, modal harmonies or jettisoning defined harmony completely became their hallmark, but always the rhythmic drive at the music's heart was never lost. This is abstract, freewheeling music, but a music which was still recognisably one which had been, at some point in its dim past, the music of the dancefloor rather than of the conservatoire. It could arguably be termed the finest acoustic jazz music ever recorded.

**Acid**

By the start of the 1970s, Miles was taming a very different beast: an all-electric band still hanging on to the last scraps of static one-chord harmony left behind by the great Sixties band, replacing any element of jazz rhythm with those of funk, any hint of jazz instrumentation was wiped out with acid-rock guitar and science fiction keyboards. They were a band desperately endeavouring to weld Hendrix and Sly Stone and even Stockhausen onto Miles' increasingly apocalyptic music.

The albums like *Ahgarta*, *Dark Magus* and *Pangaea*; albums generally overlooked by the ignorantly smug 'Miles-went-badly-wrong-when-he-went-electric' critical hegemony. These reveal one of the the most significant groups to have played not just jazz, but any music, anywhere, anytime. *Paraphernalia*, like I said, gives some clues as to how the band got there.

By this stage, Williams and Carter had left the band, replaced by the English Free Jazz bassist (the 'Free Jazz' bit is vital, read on... ) and drummer Jack De Johnette. Shorter is still in the band, and a twenty-nine year old Chick Corea has joined the band on electric piano. On this selection, the band plays songs like "Directions", drawn from the previous line-up's canon. New material performed like 'Bitches Brew' formed the cornerstone of all the wild, wonderful music to come. But what's important is that a newcomer wouldn't hear any essential difference between the two bodies of work.

From the very opening bars of "Directions" the energy of this group is overwhelming, never letting up through almost seventy minutes of music. Wayne Shorter (who went on to co-front his own supergroup, *Weather Report*), always

a mercurial talent, is on great form, his lines all angular and jagged. The rhythmically steady eighth and sixteenth-note lines of post-bop saxism are utterly dispensed with, but the overblowing, squonking and squawking sound-for-its-own sake of his Free Jazz and New Thing couterpoints were not yet embraced. He is one of the few musicians I can think of to be instantly accessible to all but the most cloth-eared, and yet one whose solos remain satisfying over and over.

Then, where Williams- even at the centre of the fiercest storm, had always swung, Jack De Johnette (himself destined to be one of the most influential drummers of the 70s, working alongside great innovators like Keith Jarrett and Jan Garbarek) is altogether more free. He can often drop timekeeping altogether; an infinitely less ferocious drummer than Williams, but arguably more lyrical.

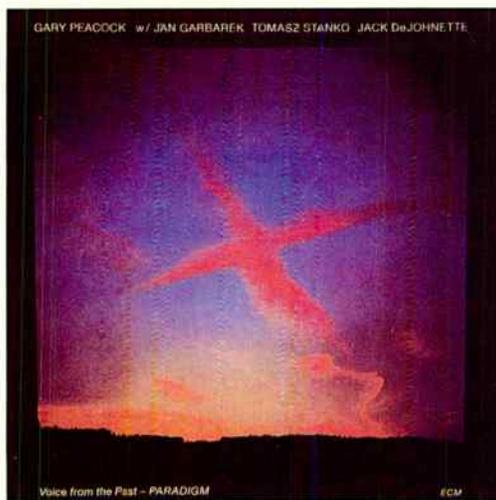
As for Corea, he is something else. Now known either for his vaguely prog-rockist jazz rock 70s epics, or his chamber jazz work on ECM, or even his recent, hugely popular, but utterly vacuous Elektrick Band (one of the worst examples of music-for-other-musicians I can imagine) is awesome on this set. His solos are by turns fluid and fractured, with great, dissonant, spiralling lines thrown up seemingly out of nowhere. His dense tone clusters underpinning everyone else's forays into the limelight (and just for the record, his sound here is superb, his Fender Rhodes electric piano destroying forever its reputation as a tinkling or 'syrupy soundmaker'; on *Paraphernalia* this thing is bad - all distorted and malevolent).

**Fresh**

Also as hinted, Dave Holland, fresh from his mispent youth on the British Free Jazz scene, brings to the band a willingness to step beyond the parameters of meter and pulse, which makes this band almost totally unique in over thirty years' worth of recorded Davis.

Not to forget, there's Miles himself. Not just the master of ceremonies, but the band's trumpeter of course; his sound ever more bleached and desolate. The explosiveness of this band brings out from him the sort of acerbic lashes of sound which would become more and more just another percussive voice in the band. Once again, it's not to extravagant to think that that also starts here.

So, a pivotal record, not just in the canon of this great musician, but in music's history overall. In some way or other, and often unconsciously, every musician who's tried to fashion something creative out of that over-lambasted thing- jazz rock, has done so in the shadow of this band. Buy this fantastic record, and understand!



**GARY PEACOCK**  
**VOICE FROM THE PAST -**  
**PARADIGM**  
 ECM ECM1210

● The talents of Jack De Johnette on the drum stool appear once again in a selection that, once again, has not previously been available on CD: the American double bassist Gary Peacock's 1982 masterpiece, Paradigm. By the early 1980s Peacock had spent twenty-odd years kicking around the international contemporary jazz scene, his deep sonorous tone and searching, explorative lines gracing work by revered artists as diverse as Bill Evans, Keith Jarrett, Albert Ayler and Don Cherry.

For Paradigm he assembled a quartet which could easily - and quite brilliantly - accommodate the aggression of the avant garde, while retaining the the pastoral lyricism in the genre of European jazz so eagerly sponsored by Manfred Eicher's ECM label. That quartet, then: himself; the Norwegian Jan Garbarek on tenor and soprano saxophones; the Polish trumpeter Tomasz Stanko; and, of course, the American De Johnette on drums.

The set of six songs they recorded - almost an hour's worth of stuff, furthermore all Peacock's own compositions - is superb. In his entirely subjective, highly contentious and utterly brilliant "The Freedom Principle", the American critic John Litweiler argues that the two strands of jazz this band scught to mesh: the urban and the pastoral, the explosive and the lyrical are not just incompatible but mutually hostile camps, fighting for their hold over the music. Litweiler feels that any attempt to 'pastoralize' jazz is to betray the great strides forward made by the avant gardists of the 60s. I'm sure that Litweiler has heard Paradigm, and I

don't imagine it caused him to change his mind, but it's hard to see why that should be the case.

Garbarek in particular revels in the avant-lyrical struggle at work here; where his own recent work has erred on the side of caution. He never lets his own playing get in the way of the gorgeous, layered music he creates around him; on Paradigm he's totally unhampered by such care. His solos rip the music apart with his characteristic consonant, folkish lines exploding into

the sort of searing and protean stuff that illustrates clearly his purported love of Ayler and even Coleman.

Stanko, an underrecorded musician even by contemporary jazz standards, makes an appearance that leaves you wishing he were only more prolific; he has an unmistakably strident sound and approach that makes him the perfect foil for Garbarek. Underpinning all this, a rhythm section to rival that on Paraphernalia. (Well, half of it's the same in any case!) A cracking re-issue.

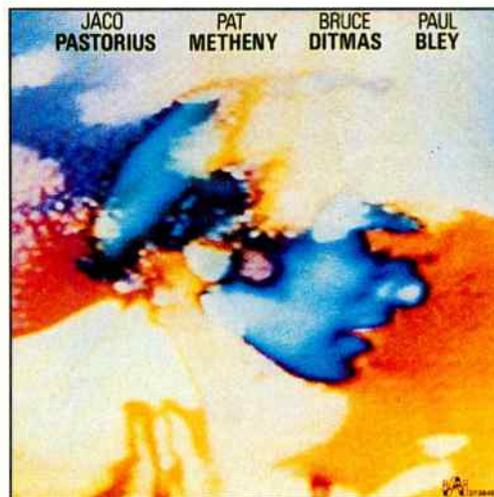


**THE SHAKING RAY LEVIS**  
**FALSE PROPHETS OR**  
**DANG GOOD GUESSERS**  
 INCUS INCUSCD13

● The Levis are percussionist Bob Stagner and keyboardist Dennis Palmer. They are known - if at all - for their work with fringe improvisors like cellist Tom Cora, multi-instrumentalist Steve Beresford and guitarist / Brit-Free-jazz godfather Derek Bailey, whose Incus label False Prophets, the band's debut appears upon. They're a blast. Stagner hits, bangs and scrapes any item he can get his hands on, like any punk who's heard too much European Free Jazz should.

Palmer farts around on two or three synths and that icon of '70s freaky special effects units, the Electro-

Harmonix 16-second delay unit (an essential tool for guitarist Bill Frisell), used so imaginatively here that despite being improvised in real time by just two musicians, Prophets sure as hell doesn't sound like it. And the music? Well, all but improv-freaks and listener-adventurers should steer well clear of this anarchic, sprawling, glorious mess. It is however, without doubt, my record of the month.



**PASTORIUS/METHENY/**  
**DITMAS/BLEY**  
**JACO**  
 DIW 312

● As if to verify my claims about the Paraphernalia band's influence, a vital CD reissue: 1974's Jaco. This is a set of nine songs, almost entirely Carla Bley compositions, explored by Paul Bley on Fender Rhodes, bassist Jaco Pastorius, a very young Pat Metheny on guitar and Bruce Ditmas on drums.

A band which in many ways belies the retrospective expectations of its line-up; far removed from the super-slick, pan-ethnic, neo-classical sounds that have made Metheny one of jazz' biggest superstars. Removed also from the swaggering, virtuoso funk that made Pastorius' name before his untimely death and even from Bley's own abstract, lyrical acoustic piano outings, Jaco is a fine slice of dark, intense and spontaneous jazz rock. Listen, and have your expectations enjoyably scuppered.



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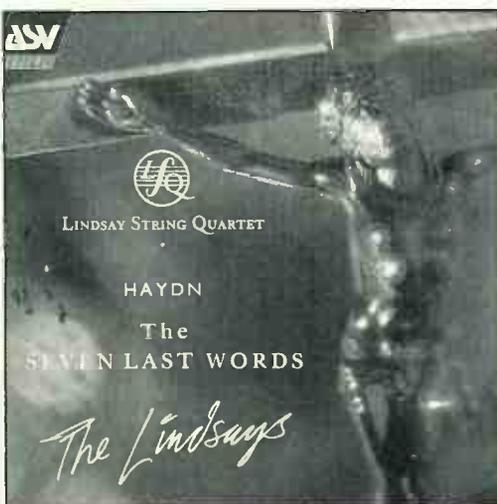
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# Classical



**FRANZ JOSEPH HAYDN**  
**The Seven Last Words (of Our Saviour from the Cross)**  
Lindsay String Quartet  
ASV CD DCA853 (DDD/70.32)

● It was only a question of time before the Lindsay Quartet, with its deep commitment to Haydn's music, would come round to recording this most profoundly devotional and spiritual of his compositions. Anticipation is richly rewarded, with a performance of sensitivity and expressive intensity that mirrors the players' understanding of the meditative yet often anguished and plaintive nature of this unique work.

The request for music to accompany the sombre church services of Lent came from the Canon of the Cathedral of Cadiz. Haydn chose to write music that interpreted and reflected upon Christ's last words (more accurately, sentences) from the Cross, sentiments etched in the Christian consciousness. Here is anger, pain, despair, resignation, acceptance and triumph - a challenge for any artist, but one which Haydn meets with a combination of genius and humanity. The score consists of seven sublime adagios, prefaced by a solemn introduction and concluding with a short, furious presto depicting the earthquake which, according to the Gospels, followed Christ's death on the Cross.

The first version of the Seven Last Words was for Orchestra. Shortly before its first performance in Vienna, in 1787, Haydn sold the score to the publishers, Artaria, giving them extra incentive for sales by producing a version for string quartet. He also produced a piano reduction and an arrangement for soloists, choir and orchestra which used texts prepared by Baron Gottfried von Swieten, his collaborator on *The Seasons* and *The Creation*.

Yet it is somehow the austere and intimate medium of the string quartet which best articulates this quietly powerful music. And, in the arrangement for quartet, this version by the Lindsays must be first choice on all counts: the performance is enhanced by a well-balanced, detailed and atmospheric recording.

While the work can be fulfilling on a purely musical basis, you may - like me - find the reflections of Dr John Taylor, former Bishop of Winchester, a worthwhile adjunct to understanding, not just the words themselves but how scrupulously Haydn has interpreted them. Dr Taylor's meditations are printed in the accompanying booklet, along with an excellent background essay by Robin Golding.

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● A life lived in monastic seclusion seems an improbable background in which to create some of the most strikingly original music of the eighteenth century, but for the last thirty years of his life, Antonio Soler saw little of the world beyond the walls of the great royal monastery of San Lorenzo del Escorial in Spain. Indeed,

**The daring double life of William Byrd and the profound influence his religious beliefs had upon his work are celebrated by the Tallis Scholars while the Lindsay Quartet enhance their devotion to Haydn's music with a recording of one of his most spiritual compositions. Russian Piano music and delicious Baroque selections include excellent material and Eric Braithwaite attends the recording sessions of Panufnik's Cello Concerto.**

*Peter Herring*



Eric Braithwaite

# Classical



## ANDRZEJ PANUFNIK Cello Concerto

Mstislav Rostropovich, cello.  
London Symphony Orchestra, cond.  
Hugh Wolff  
NMC D0105 (CD SINGLE)

● Mstislav Rostropovich has lately been lauded as the world's greatest cellist. Hearing him between takes at the recording session of Panufnik's Cello Concerto in Abbey Road Studio No 1 last year, it also turned out Slava was a great teller of jokes.

The previous summer evening had brought the premiere -but sadly posthumous -performance of what I would term the greatest concerto for the cello since Lutoslawski's at the Barbican. Written for Rostropovich, it requires the whole range of the instrument, the whole of Slava's astonishing technique, and though it was completed just a short time before the composer's death it's an utterly life-affirming work of great joy allied with deep poignancy.

Written in just two movements, lasting about twenty minutes, the Concerto begins sparingly scored (it demands a small orchestra of strings, woodwind and percussion) with low rolls of drums and the cello producing a plaintive melody which will also close the movement in palindromic fashion. Amplified by strings, this reaches a crescendo which is almost Mahlerian in its mysticism, but pared down to the emotional minimum. Panufnik characterised the Adagio as contemplative, but it is immensely expressive of struggle and -successful - attainment. Typically, the Adagio appeals not just to the intellect via its construction but directly, through

Rostropovich's superb, almost vocal, control of the cello, to the emotions.

The second movement, *Vivace*, is, in Panufnik's words, "active, dance-like". It is a vibrant affirmation of life with the strings and woodwind filling in a sparkling tapestry of sound between what is really a dialogue between drums and cello. It has that raw primitive dance energy - with a dactylic rhythm - that shocked the first listeners to Stravinsky's *Rite of Spring*. When this was recorded at Abbey Road, the conductor, Hugh Wolff, asked for "a more primitive animal quality - more abandon - more primitive animal energy" after the first take, which is exactly how the LSO responded. It's like Aztec architecture: geometrical, awesome, inspiring, simply speaking through the orchestra with the cello part observer, part commentator, part riotous, abandoned celebrant.

Suddenly the wild yet controlled dance subsides into a poignant pizzicato cello solo. "That's dance," said Rostropovich delightfully on hearing the take, meaning, I believe, the distilled essence of dance - expressive of longing and hope. "I like the jazzy, wild flavour," said Wolff of this last coda. "I like this very much.



Hugh Wolff (standing, left) discussing the previous evening's premiere with Mstislav Rostropovich in Abbey Road Studio No 1 before the recording session.

Good," said Slava; "like a proper cellist!"

At the Barbican, as in Abbey Road, Slava observably became part of his instrument until it was impossible to think of the two apart. "I feel through the bones of my foot," he said in the control room while there was some discussion of the sound of the cello on the trial takes. Initially, the sound was very reminiscent of the live performance the night before; but Rostropovich - who is no novice in the studio - said of his cello there was "too much air; too much reverberation; it should be more dry, I think."

The answer was not floor-mics - suggested tentatively by Hugh Wolff -



'Slava' (Mstislav Rostropovich), making a point to Hugh Wolff (standing, left) after a playback of the first take of Panufnik's Cello Concerto in the Control Room at Abbey Road.

but a slight re-positioning of the main pair, with a podium placed under the cello. "The drums are a bit out of focus," said Colin Matthews, the producer, so a screen was moved away a foot or two. Suddenly, the drums and cello were sounding as though they were partners instead of two distinct soloists, with the cello sounding bigger, the drums drier. Slava was right: the dance was stronger, with more detail, the pizzicato astoundingly sharp.

Technically, the result is superb. Played at realistic volume, it has extraordinary energy and range. It was difficult not to imagine I was back in the control room at Abbey Road. "A still picture of a moment," was how engineer David Flower defined recording. This is very definitely a vivid

portrait, recorded on a Technics 20-bit professional DAT machine; the company sponsored both the live performance and the recording session. In doing so, this company has performed a great service; it has championed not only Panufnik but supported a number of musicians and financed performances of infrequently heard works, too often unsung. It is to be hoped that sponsorship of this kind can be continued by Technics and that other companies follow this excellent lead.

Panufnik's last composition is a work - sorry to sound pompous - which totally encompasses humanity, which releases everything which is most optimistic from the human psyche while maintaining a Jungian insight into our most atavistic instincts. Rostropovich's cello explicates anguish without anger; striving without doubt of attainment, pathos without pointless pity. Panufnik's Cello Concerto in his hands and those of Hugh Wolff and the LSO is a great life-giving force. It ought to become a classic - and how I wish it would follow Gorecki up the charts. It should. EB

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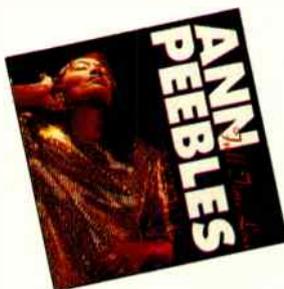
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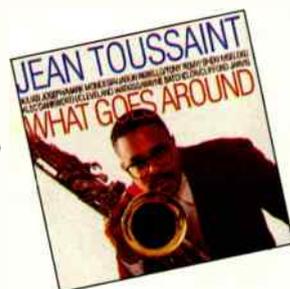
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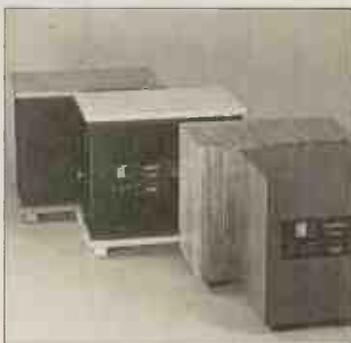


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Keith Howard, *Audiofile with Hi-Fi Answers*, June 1992



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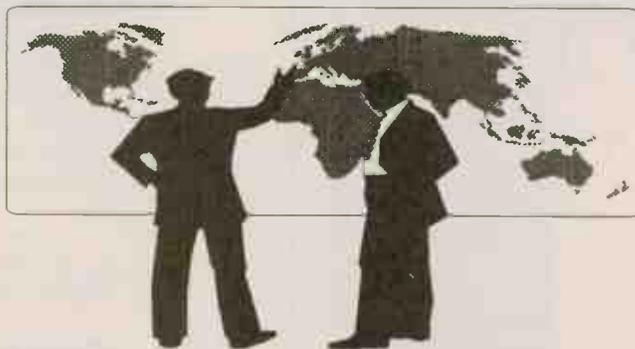
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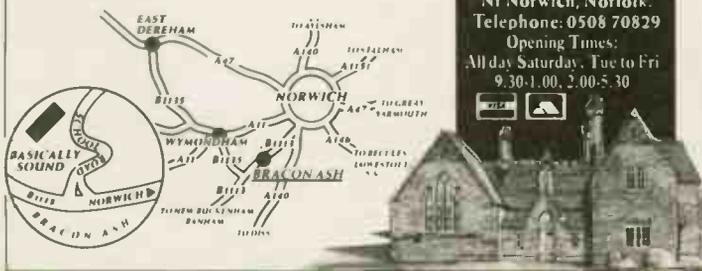
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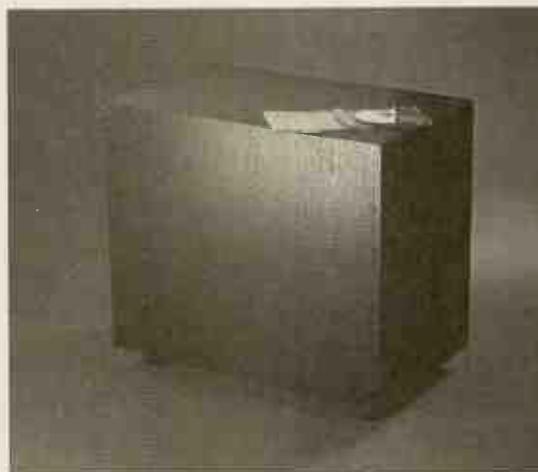
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# Budget Refreshment

**Denon's budget PMA-250III amplifier has been refreshed internally.**

**Jonathan Jordan partakes of the latest version.**

**D**enon have carved a very successful niche for themselves in the budget marketplace. The PMA-250III is the latest in a long line of amplifiers which have become popular with the first-time buyer. At £150 it is firmly placed in a highly competitive market, but Denon have opted for Anglo-Japanese co-operation in this revision of the '250, to help it make its mark on British ears and the would-be audiophile.

According to Denon, the PMA-250III has benefited from the extensive research carried out on the design of the more expensive PMA-450 (reviewed in January '93) and includes similar design features such as an improved power supply. No obvious corners have been cut to keep price down at the expense of sound quality, nothing about its appearance or facilities suggesting that it is a budget model. A headphone socket is provided

which cuts out the speakers through a relay, for example.

More obvious externally is that while the '250 III has tone controls, a Source Direct option is fitted which bypasses them, so removing any influence they may have upon sound quality when set to zero. Hefty speaker terminals are provided, though they make bi-wiring a little tricky. Tone controls with their associated by-pass switch, the selector knob, volume control, and a tape monitor switch are provided on the neat front fascia.

## **Distinguished**

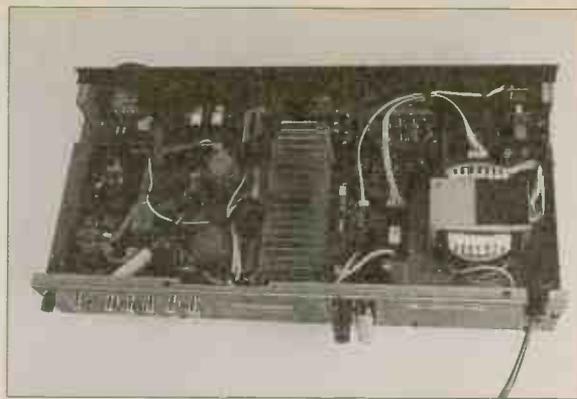
My first impression of the Denon was of a distinguished sound for the price. The PMA-250III gave a good impression of speed and power. Although the speakers the Denon was driving were quite insensitive, it had no problems producing a reasonable domestic volume. Although

its rated power output is not great, its true power output (see our tests) will complement mid-priced speakers, providing the average sized living room with sufficient volume to satisfy most ears. The amplifier also delivered power well: it clips gently before heavy distortion takes hold, so its limit is easily found before damage to loudspeakers could take place.

If you enjoy your music with a good bit of bass I think you'll enjoy the '250. Its bass performance is clean and it delivers a good, kicking rendition of the bass drum and bass guitars, without generating a 'boom boom' effect. Occasionally I found the bass could be a little ragged, sometimes lingering behind the speedier mid-range, but the Denon definitely provided punch, even if it couldn't always manage the last degree of precision.

As it ploughed through Supertramp's

'Breakfast in America' the multiple combination of vocals, saxophone, bass guitar and drums all got too much. While it is quite precise in its reproduction of individual notes, Denon's new budget amplifier sometimes strains in bringing them all together in a constant flow. The mid-range of the PMA-250III is possibly its weakest point in terms of tight tracking of the music over transients; but rather than give up it keeps plugging away and it puts up a fair effort. It did not sound over-happy with Bach's Cantata No 80 either, but it obviously aspired to reproducing the choral and orchestral parts more ambitiously and subtly than many other amplifiers in this price bracket.



Hefty mains transformer and large heatsinks give the PMA-250III a high power output for its size.

### Shouting or Singing

The top end occasionally lacked smoothness, sometimes sounding piercing. With Rock music I found that the amplifier sounded slightly too bright, making the higher vocal notes a little coarse. It also over-illuminated some vocalists; they appeared to be shouting over the music rather than singing along with it. On the plus side, the '250 imparted a continual air of almost breathless excitement that was very refreshing.

For a budget amplifier, the Denon reproduced stage width, height and depth well. It also kept musical instruments and vocalists well separated and with Tracey Chapman's 'Behind the Wall' I felt that everything was detailed quite accurately, with even a touch of drama generated. Only difficult recordings sounded two dimensional. But whilst sound stage depth and stereo imagery were existent in good measure and refreshing to hear, the '250 seemed to produce a series of three or four planes in front of me, rather than a continuous depth perspective.

Denon have included a phono stage, which far from being an afterthought had

me quite happily playing through my record collection. The sound quality was quite neutral, except for a mildness in the treble. Solid imagery and a reasonable degree of stereo separation ensured that there was no wish on my part for the listening session to be abruptly terminated.

The phono stage handled most tracks well, giving them solid bass, but vocal and instrumental transients were not tracked with quite the precision and speed that can be plucked from vinyl recordings. The Denon kept up with all but the most difficult tracks in my record collection. If a budget record deck is already in place or on the shopping list, this amplifier will do it justice.

### Good Value

Denon have done well in producing a £150 amplifier that offers a degree of warmth, depth and a sufficient amount of genuine hi-fi quality to represent good value for money. It is a touch heavy in the low frequencies, a touch squeaky up high, slightly loose and lazy in the mid, but these faults are no more pronounced than in many more expensive competitors. The PMA-250III might not possess absolute finesse, but it certainly has class. ●

### MEASURED PERFORMANCE

Denon's PMA-350 has become popular for its punchy sound. Turning out 70watts per channel there's room below it for an amplifier of lower power output, a niche the smaller PMA-250III has been designed to fill. It produced 55watts into eight ohms under test, a figure that increased to 80watts into a four ohm load. So the PMA-250III has plenty of power for budget loudspeakers and it will handle low loads well enough, making it satisfactorily load insensitive.

The CD input has an extended bass response, but unfortunately our standard checks of volume control behaviour showed that high frequency extension is dependent upon volume control position. This occurs when the changing resistance of the volume control reacts with capacitance, usually from unplanned-for strays introduced by screened cables and such like. I found that between positions 12-14 on the volume control the upper limit fell to just 19kHz (-1dB). This is too low; output started to fall above about 7kHz or so. Since Compact Disc players have a response flatness up to 20kHz that invariably betters that of the PMA-250III, it really needs to be improved in this respect. I would expect it to produce a dulled and 'enclosed' sound over this portion of the volume scale. The volume control also had a bad 'flat spot' at this point, where there was no change in volume at all for quite quite a large movement of the knob. At other settings the high frequency limit increased to a more acceptable 35kHz or so.

Distortion via CD was low right across the audio band, with little increase at high frequencies, except at very high power output. In this the PMA-250III differs from the '350,

the latter having some treble distortion and a certain amount of coarseness in its sound as a result. However, the presence of such distortion suggests the amount of feedback used has been kept in check, which in turn may well account for its apparently improved dynamics. If this is the case, then a likely corollary is that the PMA-250III has more feedback and it may suffer by offering apparently weaker dynamics. Only listening tests can tell. What looks good in a set of basic measured performance figures doesn't always translate into improved sound. And I suspect that the volume control problem has made me a little doubtful about the efficacy of this amplifier's engineering.

The disc stage measured well enough. It has a warp filter, which cuts output below 36Hz, that will give the Denon light-ish sounding bass, but the absence of lower frequencies keeps the sound seemingly fast. Equalisation was accurate, the high frequency limit being determined by the volume control again, reaching no more than 22kHz or so. Hiss was very low and hum negligible. A sensitivity of 3mV and an overload figure of 170mV both suit modern moving magnet cartridges well. There was around 200pF of input capacitance, not enough to cause serious imbalance to the frequency response of budget cartridges. I found no problems or weaknesses, but the '250 will have lighter bass from LP than many Japanese amplifiers, sounding more like U.K. amps which commonly have such a filter.

The tone controls were poor, effectively being after-thoughts. Treble lift only worked at an extreme setting and the whole audio band tilted before lift occurred. 'Treble cut' cut more than treble! The curves were

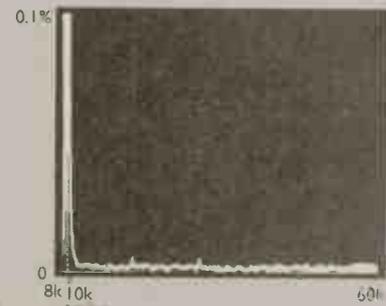
shambolic in comparison to those on British amplifiers. Luckily, Denon fit a bypass switch.

Although the PMA-250III is a budget amplifier and some of its facilities do reflect this, they are a bit of an afterthought. The behaviour of the volume control in particular needs attention. **NK**

### TEST RESULTS

Power	55watts
CD/tuner/aux.	
Frequency response	8Hz-19kHz
Separation	72dB
Noise	-96dB
Distortion	0.004%
Sensitivity	185mV
dc offset	0.2/1mV
Disc	
Frequency response	36Hz-22kHz
Separation	72dB
Noise	-77dB
Distortion	0.005%
Sensitivity	3mV
Overload	170mV

### Distortion



Less distortion than more expensive PMA-350

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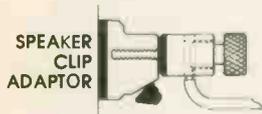
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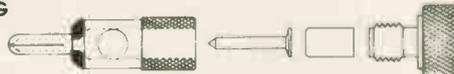
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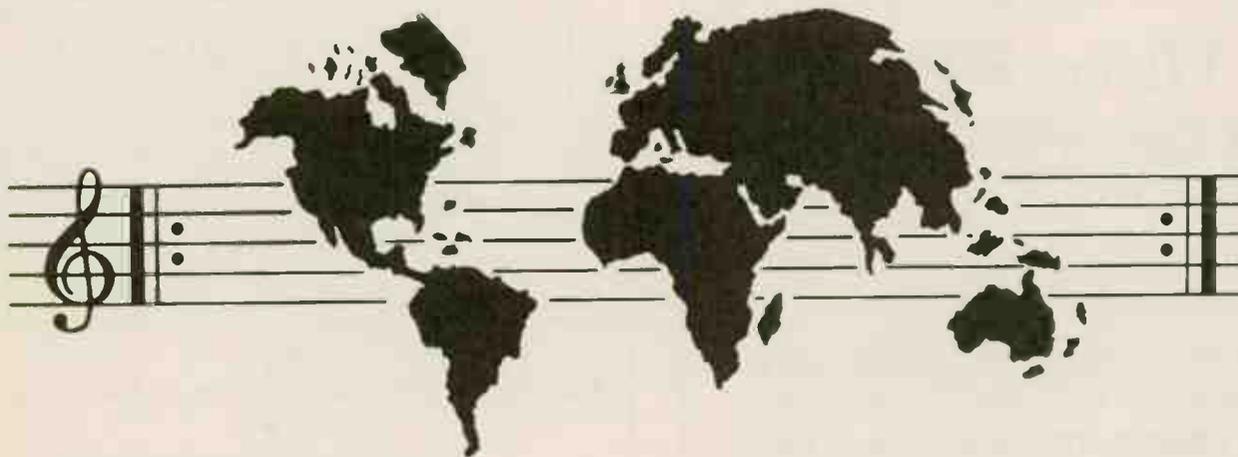
Canada - At a price well below many DACs of similar sound quality it offers real value for money in addition to its sonic refinement.

Germany - D/A converters from the Sugden stable have established themselves on a solid platform within the hi-fi scene.

#### **SDT-I CD Player**

Canada - The combination of excellent transport and high-quality parts make the Sugden a very relaxed and easy player to listen to, with no digital edge.

U.K. - I have to say Sugden's CD player just has to be near the top of any buyer's list.



#### **A21a Class 'A' Amplifiers**

U.K. - A true thoroughbred that will undoubtedly attract newcomers to Sugden's dedicated band of followers. It almost begs you to put on more music and then proceeds to play it with aplomb.

Holland - A concert hall in your living room. The reproduction quality of the amplifier is without any stress and gives total involvement in the music.

#### **A25B Integrated Amplifier**

U.K. - Not only does the little A25B look more refined than many of its peers, it also has a sophistication to its sound that is sadly lacking in most of its immediate competitors.

Singapore - The Sugden A25B will not fail to please in the way it presents the music. It is therefore, highly recommended.

Canada - The quality of sound produced by this amplifier is exemplary.

Australia - We are hard pressed to think of an amplifier quite so musical. A delight to the ear.

France - The general transparency of sound and the punch delivered by the amplifier are really astonishing.

#### **A48 Integrated Amplifier**

U.S.A. - In terms of sound quality the A48 is a revelation. More than any other integrated amplifier in my experience. The Sugden imbues music with a warmth and body that is quite addictive.

U.K. - Coherent and musical, the Sugden A48B is on the warm side of neutral, well suited for those who like the valve sound.

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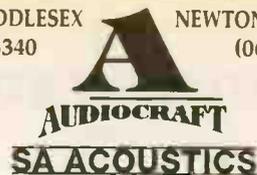
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Mission 761 Heybrook Solo	£334.95	£349.95	£384.95	£389.95
Mission 761 Heybrook Solo	£334.95	£349.95	£384.95	£389.95

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Which is one reason why we only stock a limited range of speakers; that way we know them thoroughly and can get the best out of them. And they all have their own peculiarities. The **Ruark Tallisman**, for example, really needs a better amplifier than most people use on a speaker in this price bracket. And the **AVI Preamp & 90 watt Stereo Amp** is ideal here (with the mono blocks if you can afford the extra). However, the new little **Ruark Templars** and the **AEGIS Model 1**, are far easier to drive and sound amazing with the **Analogue Electronics Jupiter Amp & AMC CD6 Player**. An amazing bargain for £1100. The **Cadence Valve Mono Blocks** are great with the **ATC SCM 10** and **20** models, as an alternative to the **AVI's** while **Quad ESL63** owners really should hear the **AVI Amps**.



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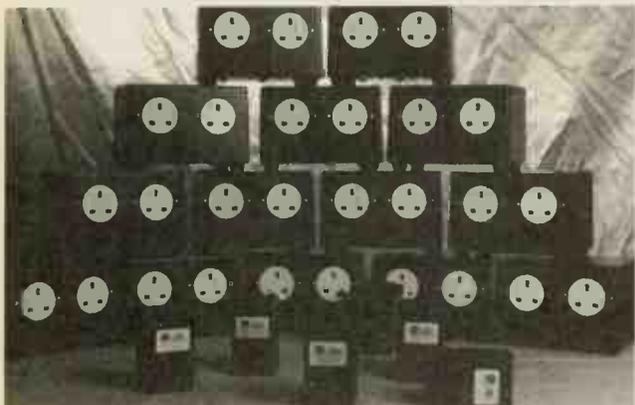
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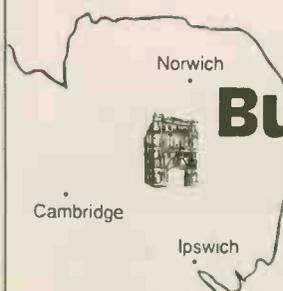
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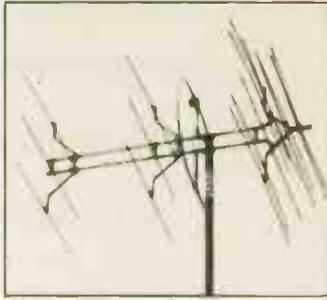
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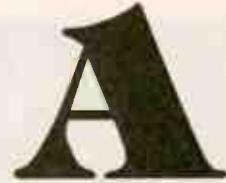
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# WHY A HI-FI TUNER NEEDS A GOOD AERIAL

**For best sound quality, a hi-fi tuner must have a strong signal of around 1mV minimum.**

**The question is: how do you get it?**

## INDOOR AERIALS

Simple pin-up wire types (dipoles) only provide enough signal within a few miles of a transmitter. Otherwise they are noisy and prone to receiving multipath signals that produce distortion.

We've tested powered indoor aerials and expensive hi-tech designs costing up to £50 and find they give no more signal than simple, horizontal dipoles, either of the wire type or of rigid aluminium. Their only benefit is smaller size. It is better to buy a rigid aluminium dipole and mount it high, upstairs on a wardrobe, at the top of a stairwell, or similar.

## LOFT AERIALS

Loft aerials have the advantage of height and, if there are many elements, gain as well, so they provide a stronger signal than a simple dipole indoor aerial. In areas of reasonably high signal strength - which usually means within ten miles or so from a transmitter, a loft aerial may be satisfactory.

Usually with three elements, a director rod (short), reflector rod (long) and dipole element in between, loft aerials are also directional; they must be pointed toward the transmitter. They reject interference and reflected signals better than dipoles, giving a cleaner signal to the tuner.

The best mounting position is high up in the V of the roof, away from metal objects like water tanks. A long downlead will be needed, preferably of good quality to minimise signal loss.

## BALCONY & WALL MOUNTING AERIALS

Balconies in blocks of flats have the advantage of height, giving a much stronger signal. However, the balcony should face the transmitter for good results.

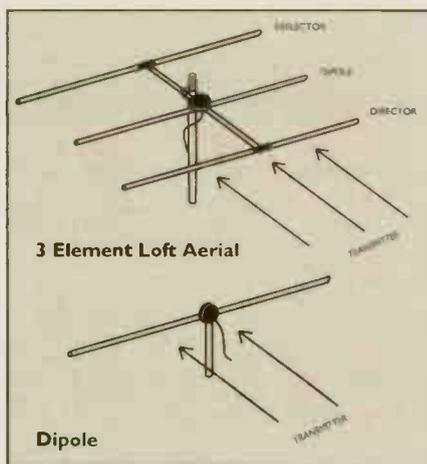
It is often possible, if a little difficult, to wall-mount an aerial on a stub mast outside a window, but you may need consent to do so. Hanging out of a window can be dangerous, so consider using a professional installer. And make sure the wall faces toward the transmitter of course.

## OUTDOOR AERIALS

In most locations, only an outdoor aerial will give a signal strong enough and clean enough (i.e. free from interference and multipath reflections) to provide true hi-fidelity from a good tuner. Benefits are high (the higher the better), crucial for

obtaining a strong signal free of reflections, and number of elements, which determine both gain and directionality.

Multi-element aerials are used in areas of medium to weak signal strength, meaning up to around forty miles from a transmitter. Any further away is judged as a 'fringe' area and will demand even more elements.



## ALL-ROUND AERIALS AND WHIPS

Whip aerials, vertical dipoles and all-round aerials (curved horizontal dipoles) provide less signal than a simple, indoor dipole (i.e. negative gain). They are suitable only for areas of high signal strength.

Although whips and curved dipoles offer all-round reception, this means they provide little rejection of reflections, interference and distant stations. They are not especially suitable for hi-fi use.

## AERIAL AMPLIFIERS AND ROTATORS

Aerial amplifiers are useful only at the masthead to overcome losses in a very long downlead. They are also used to provide enough signal for distribution around a house.

These roles apart, amplifiers boost noise and rubbish from an aerial by the same amount they boost wanted stations, giving no gain in quality, even though the signal strength meter of a tuner might go up. Not recommended.

Rotators are used to swing a directional aerial around, to receive more stations. A simpler solution is to have two aerials pointing in different directions, with their outputs diplexed together or, for more signal but less convenience, twin

downleads with an aerial switch at the bottom.

## ATTENUATORS

When it's necessary to use a directional aerial to cut down reflections from tower blocks, but the aerial then gives too much signal (i.e. more than 10mV), an in-line attenuator can be used to prevent tuner overload.

## AERIAL INSTALLERS

The best and overriding reason for using an installer is personal safety; roof work is very dangerous. Installers are also very quick and well equipped; DIY may take the large part of a day. Local installers should know about area-specific problems, the location of repeat and fill-in transmitters, and such like - all matters that are likely to be a mystery to most people.

Finally, good installers should have a Field Strength Meter that not only enables them to see whether an aerial is giving the required result, but can prove this to the satisfaction of the customer. Around 1mV is wanted, meaning powerful stations will come in higher (say 3-5mV) but weak ones a bit lower (0.3-1mV). If for no other reason, knowing that the aerial works properly is enough reason for using an installer.

Discuss this matter with them first though. In some areas, it may be impossible to obtain such a strong signal, no matter what aerial is used; get a variety of opinions if necessary.

## CONFEDERATION OF AERIAL INDUSTRIES

The CAI has a countrywide list of aerial installers who are members that abide by the rules below.

To find a local service, contact -

CAI Ltd.,  
Fulton House Business Centre,  
Fulton Road,  
Wembley Park,  
MIDDLESEX HA9 0TF

Tel: 081-902-8998  
Fax: 081-903-8719

*CAI members must employ staff competent for the business conducted. They must follow standards of practice, agree to investigation, examination or test at any time. They must guarantee any aerial, equipment and/or installation work for a minimum period of twelve months ●*

# World favourites

Hi-Fi World's revamped, comprehensive, selection of preferred products out of those we have reviewed in the last eighteen months, with the issue in which the test appeared.

## COMPACT DISC PLAYERS

SONY CDP-497	£160	Superb starter CD. Packed with facilities.	Aug 92
DENON DCD-580	£180	Advanced Interpolative 20-bit based player. Rather 'grunty' and rough-edged, but with a good sense of rhythm and fun.	Dec 91
TECHNICS SL-PG500	£200	MASH player. Simply one of the finest CD players on the market, packed with life and detail. Astonishing value.	Aug 92
MISSION DAD5	£300	Bitstream based player. Very even handed, with forceful bass. Some lack of spaciousness.	May 92
PIONEER PD-8700	£300	Single-bit player, with 'stable-platter' CD turntable. Fast and pacy, with good dynamic range. Soon to be replaced with 'Legato Link' version.	Dec 91
ROTEL RCD-965BX	£300	Bitstream based player. Calm, open and sophisticated performer.	Oct 91
PIONEER PD-9700	£400	Advance on the PD-8700 listed above. Very smooth and sophisticated sound, tonally even. Well built.	May 92
ARCAM ALPHA	£420	Offers a warm, full-bodied sound with a big, rich bass.	May 91
CREEK CD60	£500	16-bit player. Excellent rhythmic properties and a superb bass performance.	Apr 92
CARY CAD-855	£900	16-bit Rotel player, with Cary-designed valve output stage. Packed with ambience and musicality.	Feb 92
MARANTZ CD-94 II	£900	16-bit player. Superbly built, with deep bass and extremely full instrumental colour.	Feb 92
SONY CDP-X77ES	£1000	Low-bit player. Very clean, smooth and analytical. Well built, but lacks enthusiasm.	Feb 92
MICROMEGA SOLO	£1350	Philips Bitstream chipset, with distinctive transport mechanism. Very light and musical, but with a deep, well controlled bass.	May 92
NAIM CDI	£1598	Single box, 16-bit player. Close to the two box CDS, very disc dependent, has vital tingle factor.	Apr 92
TEAC X-1	£2300	Superb 20-bit player. Convincing, idiosyncratic and characterful. Has plenty of flair.	Jun 92
NAIM CDS	£2937	Two box, sixteen bit player. De rigeur for Naim-based systems. Musically informative, has both punch and delicacy.	Sep 91

## COMPACT DISC TRANSPORTS

ARCAM DELTA 170.3	£650	Smooth. Draws the listener into the performance. Improves on all the strengths of the 170.	Jul 92
TEAC P-500	£650	Can be too restrained for some tastes, but subtle and highly detailed.	Feb 92
MERIDIAN 602	£1500	Well built, near silent in operation. Strong sound, but tends to blandness with the wrong DAC. Matches 606 DAC.	Mar 91
MICROMEGA DUO	£1745	CD-ROM based transport. Defines refinement and air, but without sacrificing impact.	Nov 91

## DIGITAL TO ANALOGUE CONVERTERS

QED DIGIT	£125	Based on Philips Bitstream. Excellent value, with no rough edges. Co-axial input for CD only.	May 92
MICROMEGA MICRODAC	£299	Philips Bitstream-based. Typical Micromega sound, very musical and refined, lacks the cutting edge of detail.	Mar 92
MISSION DAC 5	£299	DAC7 based. Clean, forward mid-range, capable of portraying real subtleties. Bass lacks firmness.	Jul 92
ARCAM BLACK BOX 3	£360	Fine sounding DAC. Now looking a bit tired against stiff opposition.	May 91
AUDIO ALCHEMY DIGITAL	£376	Tiny Philips Bitstream-based DAC. Very broad and smooth presentation.	Feb 92
DECODING ENGINE	£650	16-bit Philips based. A wide open window for the transport to flow through. Very neutral.	Jun 92
SUGDEN SDA-1	£695	Philips Bitstream-based. Well built and flexible. Typical Audiolab sound, very silent and neutral.	Jan 92
AUDIOLAB 8000DAC	£1221	New DAC7 version. Rather laid back, but also easy going and possessed of a very natural sound.	Jan 92

## TURNTABLES

SYSTEMDEK IIX-900 (NO ARM)	£190	Suspended-chassis turntable, easy to set up. Surprisingly natural sound, if not as detailed as some. Suits Rega, Moth and Helius arms.	Aug 91
PROJECT 2	£245	Czech built turntable with much to offer above the Systemdeks and Regas. Very coherent.	May 92
REGA PLANAR 3	£250	Built to last. Transparent and lucid, although can sound bass light. Sets the standard to beat.	Aug 91
THORENS TD166/VI/UK	£270	Fitted with Rega RB 250 arm. Good basic deck, with tweakability.	Jun 92
MICHELL MYCRO	£397	(with RB300 arm, £539) Falling between the Syncro and the Gyrodec, the Mycro has superb mid-band clarity and poise.	Apr 92
PINK TRIANGLE	£449	Neutral sounding turntable with excellent soundstaging and decent bass. Best with a Linn, Rega or Roksan arm. Improved GTi version also available.	May 91
LITTLE PINK THING	£550	(with arm) Isn't tripped up by unsettling music, the Radius acts a good mid-price turntable.	Nov 91
ROKSAN RADIUS	£650	Arm-less Thorens, good match for Rega RB-300 or Naim ARO. Easy to use turntable that gets very close to the Linn LP12.	Apr 91
THORENS TD-3001BC	£676	Terrific soundstaging properties, good bass and a neutral performance that considerably improves upon the LPT.	Jun 91
PINK TRIANGLE EXPORT	£699	Similar to the Pink Triangle, the two-motor Valdi is an expressive performer, best suited to Audio Innovations equipment.	Jul 91
VOYD VALDI	£785	Highly analytical and exciting turntable. Can be almost CD-like in its presentation.	May 92
ROKSAN XERXES	£1200	Very neutral turntable, but with a lot of magic. Excellent imagery and detail. A natural partner to the SME V.	Sep 91/May 92

## TONEARMS

MORCH DP-6	£665	'Unipivot plus' tonearm. Plays music with a silken and rich quality. Perfect match for the Da Capo cartridge.	Jul 92
SME SERIES IV	£828	Scaled down version of the legendary SME Series V. A precision measuring instrument only bettered by the V.	Mar 92
SME SERIES V	£1232	A masterpiece of precision engineering, with a confident sound.	Sep 91/May 92

## CARTRIDGES

GOLDRING 1012	£45	Excellent value. Well balanced performer, rich and full without warmth. Very spacious and clear.	Apr 91
ORTOFON MC15	£100	Moving coil cartridge at moving magnet price. Has a tight grip on rhythm.	Jun 92
ROKSAN CORUS BLACK	£110	Moving magnet cartridge, based on Goldring design. Exciting and detailed, with great speed.	Sep 91/May 92
SHURE VST-V	£150	One of the finest moving magnets currently available. Excellent tracker.	Jul 92
GOLDRING ELITE	£200	British made moving coil. Good value, smooth and detailed, but can sound a trifle brittle at times.	Apr 92
GOLDRING EXCEL	£499	British made high-end m-c. Refined and lyrical presentation, slightly dull at times.	Oct 91
LYRA LYDIAN	£500	Scan-Tech designed moving coil cartridge. Magical sound, even better nude!	Aug 92
MORCH DA CAPO	£500	Scan-Tech designed moving coil cartridge. Musical and accurate, without any flaw.	Feb 92/May 92
AUDIIONOTE IO	£1295	Very low output cartridge, with high silver content. Needs step-up transformer. Very musical, can show up how poor most cartridges are.	Nov 91

## CASSETTE RECORDERS

TECHNICS RS-BX404	£130	Terrific value and good sound for the money.	Sep 91
TECHNICS RS-BX606	£170	Three head deck. Superb value, capable of seeing off much more expensive machines.	Nov 91
SONY TC-K570	£200	Three head deck. Difficult to tune tapes, but prerecorded tapes reproduce with clarity; excels with premium tapes.	Feb 92
SONY TC-K677ES	£240	One of the first low-cost three head decks. Can be grainy and slightly bright, but makes for stable recordings and playback.	Sep 91
JVC TD-V541	£280	Three head deck. Good for both recording and playback, especially of prerecorded tapes. Easy to use.	Dec 91
DENON DRS-810	£300	Drawer loading cassette - just like CD. Sweet sounding, but a bit expensive.	Jan 92
NAKAMICHI	£350	Makes fine recordings with metal tape. Excellent with pre recorded tapes. One of the finest two head machines about.	Mar 91
CASSETTE DECK 2	£500	Scaled down version of the Cassette Deck 1, without rivals at the price.	Jan 92
CASSETTE DECK 1.5	£600	In the light of the 1.5, this fails to be such good value, but still a sound three head deck.	Apr 91
CASSETTE DECK 1	£600	Very smooth sounding DAT deck, but still slightly coarser than the original source.	Apr 92
PIONEER D-500	£699	Dolby 'S' deck. Easy to use. Very stable sound, with instrumental textures close to perfect.	Jun 92
TEAC V8000S	£850	Dolby 'S' deck. Excellent sound quality, close to the original source. The best Dolby 'S' deck around.	Apr 92
ARCAM DELTA 100	£1500	No 'S', but auto tape tuning that copes with anything. Probably the best analogue recorded sound available.	Aug 92
NAKAMICHI CR-7	£1500	No 'S', but auto tape tuning that copes with anything. Probably the best analogue recorded sound available.	Aug 92

## TUNERS

DENON TU-260L	£110	Excellent budget AM/FM tuner. Easy to operate, good all-rounder with a fine sound.	Mar 92
NAD 4225	£160	Warm sounding, but detailed budget AM/FM tuner. AM poor, looks dated.	Jun 92
AURA TU-50	£230	Superb FM-only tuner. Produces a delightful, three-dimensional sound. A cracker	May 92
YAMAHA TX-950	£260	Fine all-rounder, with a good AM section.	Jul 92
KENWOOD KT-7020	£270	Silky smooth sound, but very insensitive and needs a good aerial.	Feb 92
MUSICAL FIDELITY T1 Mk II	£270	Sweet, delightful FM performance. Distinctive sound, lags behind on insight and can be too warm.	Oct 92
ARCAM DELTA 80	£340	AM/FM analogue tuner. Realistic sound quality, but slightly insensitive.	Jan 92
NAIM NAT-02	£853	Little box, big money, dead good. Try and find better unless it's a . . .	May 91
NAIM NAT-01	£1377	The best tuner currently available. All else is mere artifice. If you want better radio reception, go and live in the BBC's studio.	Mar 92

## INTEGRATED AMPLIFIERS

NAD 3020i	£150	Budget classic, although its crown has slipped a bit of late. Typical warm NAD sound.	Aug 91
HARMAN-KARDON HK6150	£159	Good sounding starter amplifier. Great dynamic range. Excellent bass.	Jun 92
DENON PMA-350	£170	Packs a lot of punch for the money. Phono stage lags behind the line inputs.	Mar 91
PIONEER A300	£180	Slimmed down A-400. Poor phono stage, bit brash, but exciting and glossy.	Apr 91
SUGDEN A25B	£203	Surprisingly warm and well rounded for the price. Worth seeking out.	Dec 91
ARCAM ALPHA 3	£200	Lean and lively, with an astonishing amount of detail. Excellent line stages.	Oct 91

MISSION CYRUS ONE	£200	An excellent all-round performer. Equally good on disc or line stages.	Mar 91
CREEK CAS 4140 S2	£230	Bit soft and rounded, but with a pleasant character. Easy on the ear.	Nov 91
PIONEER A-400	£240	The amplifier that shook up the UK hi-fi industry. Very hi-fi sounding, but can sound good with high-end equipment.	Nov 91
AURA EVOLUTION VA-100	£270	Full of refinement, although not the best measuring amplifier around.	Jul 92
ION OBELISK 100	£299	Plenty of detail and ambience. Good imagery but not the warmest sound.	May 92
MISSION CYRUS 2	£380	Best with PSX power supply (£300). More powerful, dynamic and well balanced than almost any of its price rivals.	May 92
AUDIOLAB 8000A	£430	Very neutral and superbly built. Good bass, great imagery, but can be sterile.	Apr 92
SUGDEN A48B	£460	Gentle performer, but never masks the music with warmth. Tonally very even.	Apr 92
AMC CVT-3030	£500	Valve hybrid amplifier. Has valve and transistor virtues in a reasonably priced package.	Aug 92
AUDIO INNOVS. SERIES 500	£990	Sweet sounding valve design. Good looking, but a little system dependent.	May 91
AUDIONOTE OTO	£1250	12w valve amplifier. More in tune with music than hi-fi. Superb dynamic range.	Jun 92
TUBE TECHNOLOGY UNISYS	£1299	Superbly built chrome valve amplifier. Pacey and musical.	Aug 92
COPLAND CTA-401	£1495	Solidly built Swedish valve amplifier. Very refined and unfatiguing sound.	Feb 92

**PREAMPLIFIERS**

NAD 1000	£180	Wonderful value. Relaxed, smooth and easy on the ear. Best with 2100 power amps.	Jun 91
QUAD 34	£336	Civilised, smooth and unintrusive. Not especially transparent, but relaxing and built to last. Clever tone controls.	Jun 91
AUDIO INNOVS. SERIES 200	£349	Valve preamplifier. Good value, rather colored but very dynamic. Best with Innovations equipment.	May 92
AUDIOLAB 8000C	£375	Superbly made solid state pre, without flaw. Clean sounding, if a touch sterile. Excellent all-rounder.	Jun 91
CROFT SUPER MICRO A	£649	Valve preamp. Great mid-band. Good soundstaging properties, a bit warm & euphonic.	Oct 91
MICHELL ARGO+ISO	£687/£393	(+£155 for optional Hera PSU) Pure detail, incisiveness and the beauty of the highest of high end, at a median price, especially with the Hera power supplies. Line-level only, hence an Iso required for vinyl replay.	Oct 91/Jul 92
CONCORDANT EXCELSIOR	£900	Valve preamplifier with MM phono + 2 line stages. Magical and realistic sound quality, deep soundstage. Superb for recordings.	Dec 91
JOHN SHEARNE PHASE ONE	£1099	Attractive preamplifier with matching power amplifier. valve-like lucidity and sweetness. Suits neutral equipment.	Aug 91
ALCHEMIST FREYA	£1150	Line level preamplifier, with distinctive styling. Detailed and commanding sounding, may sound too bright in some systems.	Oct 91
LINN KAIRN	£1295	Remote control preamplifier. Flexible, but can sound too forward. Best suited to Linn equipment.	Aug 91
FINESTRA	£1399	Very transparent op-amp based pre, which features absolute phase integrity in design to produce superb imagery.	Feb 92
E.A.R. G88	£5246	Exceptionally solidly built valve pre, with a 'bolted down' sound to match. Can sound awesome.	Nov 91

**POWER AMPLIFIERS**

NAD 2100	£290	Matches 1000 pre above. Powerful (150 watts), yet relaxing sound with big bass. Easy to bridge by adding another 2100. Very good value.	Jun 91
QUAD 306	£395	50 watt stereo solid state amplifier, well suited to the ESL-63 loudspeakers. Beautifully built, smooth sound, but can lack bass and transparency.	Jun 91
CONCORDANT EXULTANT	£500	Modified Quad II mono amplifiers. Colder sounding than the original. Good value. Good match with Excelsior preamp.	Jun 92
AUDIOLAB 8000P	£545	Powerful solid state stereo power amplifier. Clean, natural sound with a slick styling to match. Very well made.	Jun 91
CROFT SERIES 5	£548	Stereo 2S watt valve amplifier. Can be bridged. Rich, warm sounding. Good with ProAc loudspeakers.	Oct 91
QUAD 606	£570	100 watt stereo solid state amp. Very smooth and civilised. Similar to 306, but with more power and deeper bass.	Jun 91
LECTERN	£699	50watt solid state power amplifier, designed to match the Finestra. Superbly transparent.	Feb 92
MF P180/CRPS	£799/£499	Stonky power amplifiers. Powerful and refined, especially with CRPS supply.	May 91/Jul 91
JOHN SHEARNE PHASE ONE	£1199	Matching power amplifier to Phase One preamp above. Attractive finish, sweet sound.	Aug 91
AUDIOLAB 8000M	£1190	150 watt solid state monoblocks. Typical Audiolab look, build and sound; crisp and clear but can also be clinical.	Sep 91
ART AUDIO TEMPO	£1398	20 watt triode monoblocks. Attractive looking, vibrant sounding, ambient and subtle.	Dec 91
ALCHEMIST GENESIS	£1400	100 watt valve monoblocks. Powerful sound. Very cable dependent but with plenty of dynamic range.	Oct 91
AUDIO INNOVS. SERIES 1000	£1499	50 watt valve monoblocks. Great looks, powerful sound. Shows just how loud fifty watts are!	May 92
ART AUDIO MAESTRO	£1927	Pentode/Triode switchable valve monoblocks. Beautiful looking, sweet and involving.	Jun 91
E.A.R. 549	£4372	Massive 200watt valve monoblocks, designed for studio use. Awesome sound can be too intense for some, but can produce uncanny solidity of images.	Nov 91
MUSICAL FIDELITY SA-470	£6000	Massive powerhouse that appears to have no limits whatsoever (unlike those who try to lift it).	Jun 91

**LOUDSPEAKERS**

GOODMANS MAXIM 3	£110	Excellent budget small box. Forward sound, without undue box coloration.	May 92
MISSION 761i	£169	Not a perfect loudspeaker, but is full of bass and a lot of fun and entertainment for the money.	Feb 92
MISSION 780	£180	Not without flaws, but the accent is on the music. Good small design.	Sep 91
B&W DM610	£200	Very competent and musical. Loads of life and energy.	Sep 91
ROGERS LS2a2	£209	So far the most correct loudspeaker we have discovered at the price. Sweet and even-natured. A bargain.	May 92
HEYBROOK HBI Mk III	£249	Powerful, efficient loudspeakers. Loads of welly, loads of bass, but somewhat unrefined.	Apr 91
TANNOY 609	£250	Cheapest Dual Concentric loudspeaker in the range. Fast and fun, but occasionally a bit unsubtle.	Jun 92
NAD 8100	£300	Fine floorstanding loudspeaker that goes deep and loud. Terrific sense of fun.	Jan 92
EPOS ES11	£330	Two way reflex loudspeaker with a civilised but giant-killing sound quality. Excellent imagery.	Aug 91
TRIANGLE COMETE	£375	Highly efficient small box loudspeaker with a superb mid-band. Great for valve amplification.	Apr 91/Jan 92
WILMSLOW FOCCUS	£400	Kit loudspeaker, based around DynAudio drivers. Very transparent and detailed for the price.	Apr 92
KEF 101/2	£495	The baby of the KEF Reference range. Very system dependent.	Feb 92
CELESTION 100	£499	Two way box, with metal dome tweeter. Need powerful amplifier and careful positioning, but has insight and good tonal accuracy.	May 91
NEAT PETITE	£525	Baby two-way. Tight, fast, great stereo and good dynamics. Few little boxes come close.	Dec 91
PENTACHORD	£534	(£1059 with subwoofer) Finished in real wood, these Bandor-based units are superbly transparent. With the sub-woofer, they go deep too.	Aug 91
PROAC STUDIO 1 MK II	£612	Two-way reflex loudspeaker. Easy to listen to and well-balanced, although somewhat colored.	May 91
KEF Q90	£649	Uni-Q design with ABR. Efficient, dynamic and capable of going very loud indeed.	Aug 91/Jan 92
REL STUDIO SUBWOOFER	£695	Mono, self-powered subwoofer that works! Very flat frequency response.	Jan 92
B&W MATRIX 805	£795	High quality small monitor loudspeaker. Detailed and fast and capable of playing very loud. Used at Abbey Road.	Jun 92
AUDIOPLAN KONTRAPUNKT	£799	Small box loudspeaker. Very smooth and sophisticated sound, great with a valve amplifier.	Jan 90
AUDIO NOTE AN-J	£799	(£999 for silver wired version) High efficiency loudspeakers using paper cones. Good soundstaging with a very convincing, natural sound. Derivative of Snell design.	Apr 92/May 92
HEYBROOK SEXTET	£899	Revealing, lucid floorstandings. Not smooth, but tight and fast-paced. Need careful partnering.	Jun 91
PROAC RESPONSE ONE 'S'	£918	Excellent small box design. Can convey the spirit, drive and passion in music in a small room.	Oct 91/Feb 92
KEF 103/4	£995	Capable of showing up every detail and defect in hi-fi or recording, the 103/4s image well and go very loud indeed.	Jul 92
MAGNEPLANAR MG1.4	£1190	Electro-magnetic planar design. Needs long room. Can create an open, relaxed and easy musical performance. Lacks detail.	Oct 91
APOGEE CENTAUR MINOR	£1200	Hybrid ribbon design. Great imaging and detail, good value for panel fans.	May 91
ATC SCM-20	£1388	True monitor loudspeaker. Requires powerful, high quality amplifier but virtually indestructable and full of high speed insight. Could be too intense for some listeners.	Jul 92
CELESTION 700SE	£1399	Small box, carved from Aerolam. Excellent imagery, transparency and detail. Needs power and careful positioning.	Jan 91
TDL STUDIO 4	£1499	Need a large room, but can move a lot of air. Best with organ music, the 4's can sound impressive, awesome and frightening.	Mar 92
DYNAUDIO CONTOUR 1.8	£1589	Floorstanding two way ABR design. Highly detailed, studio monitor sound. Need a big power amplifier.	Jul 91
PENTACOLUMN	£1795	Active floorstanding loudspeaker using Bander metal drivers. Best with valve amplification on treble. Stunning imagery, excellent detail. Speakers that excel at everything.	May 92
QUAD ESL-63	£2072	(Pro version, £2240) Legendary electrostatic loudspeakers. Can lack bass, dynamic range and volume but have detail and imagery impossible to better.	Dec 91
TANNOY GRFM	£3500	Giant horn loudspeakers. Capable of awesome sound. Need good valve amplification.	Apr 91
NAIM DBL	£6127	Huge active loudspeakers, capable of producing immense sound pressure levels. Not for the squeamish.	Jul 92
MERIDIAN D6000	£7500	Meridian's statement in active loudspeaker systems. Effortless power and dynamics, but can sound bright.	Mar 91

**MISCELLANEOUS**

AUDIOPLAN DIGITENNA	£55	High-tech coaxial cable, for CD to DAC connection. Highly focussed sound.	Jul 92
AUDIOPLAN MUSICABLE	£VARIOUS	Superb, high quality cables that represent the finest in European cable.	Mar 92/May 92
BEYER DT411	£54	Excellent 'studio' quality headphones. Deep bass, powerful sound, if a bit splashy at times.	Jun 92
CELESTION DLP 600	£349	Digital signal processor for the Celestion 600 series loudspeakers, sounds like a £400 upgrade.	Jun 92
FRANCKSTEIN	£79	CD stereo enhancer, which adds crosstalk to make the sound more 'analogue'.	Jun 92
FURUKAWA FD-11 CABLE	£85	Coaxial cable, for use between CD and amplifier. Good quality, utilitarian cable. Safe choice, easy sounding.	Jan 92
FURUKAWA 7N PC-OCC	£900/£350	per mono metre. Very expensive cables. Highly detailed, sounds like an equipment upgrade.	Jan 92
KONTAK	£22	Space age contact cleaner. Upgrades your system at a single bound.	Jul 92
LASERGUIDE	£15	Coating for a CD surface. Is said to improve clarity, focus and spaciousness.	Mar 91
MANA TABLES	£VARIOUS	Unique glass and L-section frame supports that can transform a system.	Dec 91
SONY ICF-SW7600	£150	Superb 'world' radio. Good reception, simple to use, even has a clock!	May 91/Jul 91/Jan 92
SONY WALKMAN WM-DM33	£90	Simple to use, high-quality playback only Walkman. Excellent, stable sound quality	Aug 91
SONY WALKMAN WM-D6	£260	The famous 'Pro' Walkman. One of the finest cassette recorders at any price, but portable. Superb value, if a little 'touchy' at times.	Aug 91
SONY WALKMAN TCD-D3	£500	Better known as the 'DATMAN', this small, sophisticated DAT portable is a technological wonder.	Mar 91
TECHNICS SL-XP700	£200	Portable CD player. The thinnest and most stylish of the breed, just happens to sound the best.	Aug 91
TDK NF-C09	£10	Designed to lessen Radio Frequency Interference in cables. Works too!	Nov 91

# CREATIVE AUDIO

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



**Is this a record?**

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QUAD : REGA : ROKSAN : ROTEL : RUARK : TRIPOD :

## TIME FOR A NEW AMPLIFIER

My system at the moment is a Linn Basik/Akito/K5, Dual CV 5600 amp, Tannoy M15 speakers. Cable is 79 strand, but not QED.

My room size is 11ft wide by 14ft long.

I want to improve my amp; I have a £300 budget. I listen to Rock music and I like a good bass sound.

Also, do you think my speakers are too big for my room?

**Chris McGarry,  
Widnes,  
Cheshire.**

Although the Dual CV 5600 is a very good amplifier, you have correctly identified it as one of the weaker links in your system. The major problem that you are going to encounter is finding an integrated amp, for the money that you have, which offers a good quality phono stage.

The Magnum IA.120 reviewed in this issue, Eric and Noel between them found to possess a very good phono

# BUDGET QUERIES

**Write in with your problems to Hi-Fi World, 64 Castellain Road, Maida Vale, London W9 1EX. Our panel of experts will endeavour to solve them or at least offer some practical advice.**



isn't there in the first place. Better cables will allow you to hear more of what the system is doing. Some can be used to tune the system for a more neutral result. For example a bright sounding system can be neutralised with a 'soft' cable to produce a more balanced

sound. The Harman Kardon HK6150 and the Arcam Alpha amplifiers are both excellent, the 6150 having the stronger bass, the Alpha slightly faster and cleaner.

The Celestion 3s you are considering have now been somewhat overshadowed by the superb and cheaper 1s. These are well worth an audition, as are the Maxim 3s, which are possibly the most accurate budget monitors around.

When you have selected the items that best suit your taste, experimentation with cables will enable you to fine tune them to perfection. As a starting point for interconnect, try Audioquest and for loud-speaker cable the Furukawa FS-2T07. **DB**

### OLD FOR NEW

I have a Pioneer A300, Sony CDP 497, Leak 2030 speakers (eighteen years old). The Leak speakers are old, very bright, coloured in output, especially when faced with orchestral works, and they also cannot



The Linn Basic deserves an amplifier with a good phono stage.

stage and at £250 this fits your budget. Other amplifiers that have a very good phono stage are the Linns. The Intek is a little beyond your price range at £419 but it would work perfectly with your Linn front-end. The Intek also has the advantage of offering pre-amp outputs, which enable it to be easily upgraded at a later date with the addition of an external power-amp. **DB**

### AMERICAN BUDGET

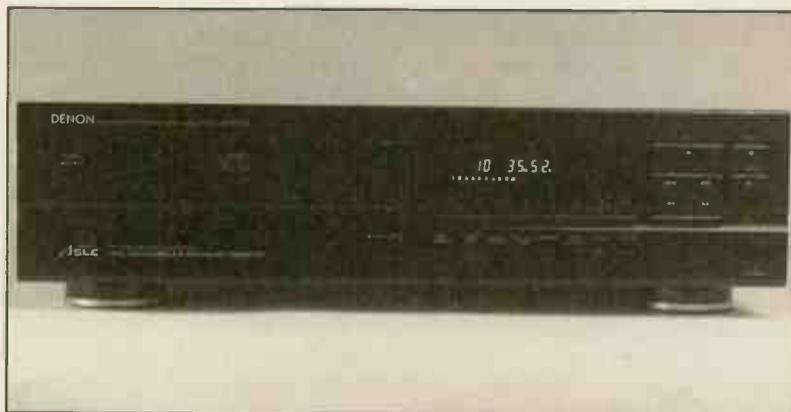
I am assembling the following budget stereo system. Would you please recommend a good speaker cable and interconnect? Will your recommendation enhance the speaker's limited

low-frequency output and existing soundstage (detail and three-dimensional space)?

System:  
Celestion 3 speakers, NAD 5425 CD player, Rotel RA930AX amplifier.  
**Lawrence S. Williams,  
New York,  
U.S.A.**

The cables that you decide to use will certainly enhance the system's existing qualities, but they can't add what

players the Aiwa XC-950 and Denon DCD-890 are my current favourites, both offering



The DCD890 gives a very energetic performance.



deliver high notes from female singers.

Do I buy a kit and refit the rather attractive cases, or replace - if so at what cost (i.e. price range) to match the set. The Leak speakers are 35watt, 4-8ohm.

**Name and Address withheld.**

The drive units and the box of a loudspeaker are carefully matched to give a flat response and reasonable bass extension. If you replaced the drive units, the new ones would almost certainly require a different box volume to give the best results. The speakers would work, but whether the result would be desirable is a different matter.

If you are keen to try DIY some excellent kits are available from Wilmslow Audio. If you are close enough to visit them

## MAINS PROBLEMS

I am trying to solve a problem that has been common to all my hi-fi systems over the years, the problem being inconsistent sound quality.

The fact is that sound quality varies between being musical and enjoyable, through to sounding no better than an average midi system.

The system I am using at present is made up of the following components: Rega 3 turntable, Arcam Alpha CD, Arcam Alpha 3, Infinity Reference 20 loudspeakers. I use Audioquest Midnight cable and Audioquest Quartz interconnect between the CD and amplifier.

This equipment was auditioned along with a selection of other equipment and was finally chosen because I liked the sound.

After initial installation and running in, the sound quality achieved was, indeed, excellent with an enjoyable sound being produced by both vinyl and Compact Disc. However, over a period of time the sound quality began to "go off" and what is more, it varies at the moment between having a warm and inviting sound, through to sounding harsh and brittle, sometimes even completely unlistenable. I have tried a variety of experiments to try to solve

that when my system sounds at it's best the volume control does not need to be turned up as much as when it sounds bad. When sounding good, music flows through the system giving the impression that different components are working together and complementing each other. When the sound goes "off" the impression given is the complete opposite as though all the components are mismatched and the music is being restrained.

The second point I have noticed is that the CD player's sound goes "off" at the same time as the turntable's, so making the problem appear throughout the whole system.

The question is, why does this variation in sound quality happen? Could it be a power supply problem? Is hi-fi particularly sensitive to variation in mains quality?

I am at a loss as to how to cure this problem which has been spoiling my enjoyment of music for a number of years. I have taken dealer's advice and changed components as better equipment has been marketed, but have always found that after the initial improvement in sound quality, the same old problem returns.

You can see from my

fi and have scrapped plans to upgrade my turntable. Changing components seems to be a waste of time and money as the problem will not go away.

The bottom line is that my hi-fi can sound excellent but ninety per cent of the time sounds absolutely rubbish.

I have even heard a system comprising of a Linn Sondek with an Ittok run through Naim amps and Spica TC50 speakers exhibit the same problem. This system costs a great deal more than my own, and in fact I found that the problem appeared to be even worse.

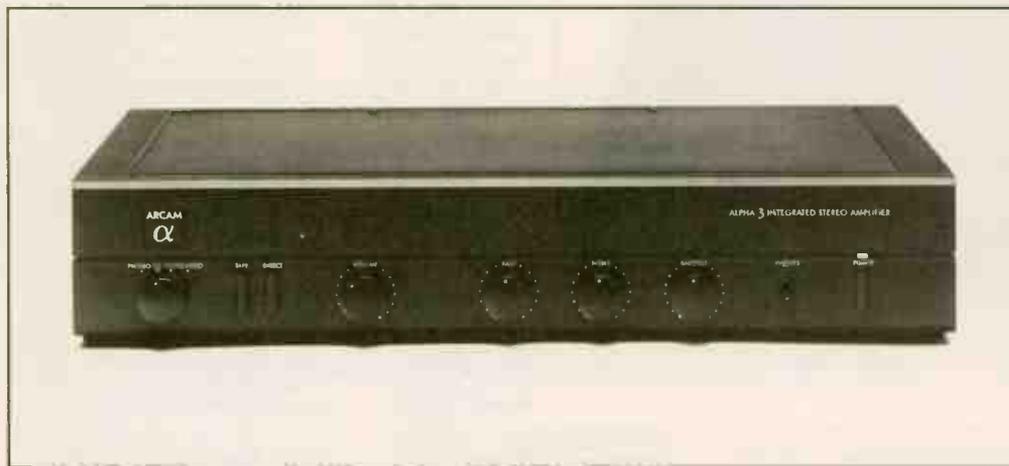
Have you any idea what is causing this problem and how it can be solved? Please help me to start enjoying music again and restore my faith in quality hi-fi.

**D Pyne  
Castleford  
West Yorkshire**

Don't despair just yet, we have a few suggestions that may solve the problem. The comprehensive information you have provided in your letter points straight at a mains problem. You say the systems sound varies, and when it varies it affects all of the components. The only thing common to all components is the mains. You also say that more volume is required when the system sounds bad. This suggests that the mains voltage is dropping under heavy demands giving your amplifier less gain and/or output. If the load on your local sub-station is enough to drop the mains voltage, then there will almost definitely be a lot of noise on the mains which will degrade the sound of your system as you have observed.

One way of removing this noise is to use DPA Digital's RF noise filter which retails for around £100. Lynwood Electronics also make a mains conditioner which will absorb spikes, remove some of the noise and hold the mains voltage up during short drops. Their mains conditioners are available in three versions, Basic, Advanced and Mega, for £49.95, £195 and £295 respectively. I suggest that you arrange to borrow either the DPA or Lynwood mains conditioners and try them at home with your system.

Additionally you could ask a local electrician to check your mains voltage, if it is particularly low you can approach the Electricity Board for an explanation and they should be able to solve the problem. **DB**



The Arcam Alpha 3 may be adversely affected by poor mains quality.

you can listen to the completed kits and then decide which one best suits your system and budget. Kit loudspeakers generally come with high quality drive units that would be found in manufactured loudspeakers of twice the price. On top of this the satisfaction of building something that not only works, but sounds better than the equivalently priced commercial 'speaker you would have bought is more than worth the few days it will take you to finish the kit. **DB**

this problem in my present system. They include cleaning the contacts of all the electrical connections with Goldring Magic and ensuring that all the cables are connected the right way round.

The contact cleaner did improve the sound quality of the system, but it did not restore it to its best performance and the effect was only short lived.

The fact is, when my system sounds bad, it stays bad regardless of what I do. One particular characteristic I have noticed is

equipment list that I have remained in the budget end of the market, regardless of this I would expect £1,300 worth of hi-fi to at least offer a consistently listenable sound.

The system I use, once set up should stay set up as there are no components in it that are difficult to set up and maintain. The equipment is on Sound Organisation stands, apart from the speakers which are on Heybrook stands.

At the moment I feel loathe to spend any more money on hi-

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