

# Hi-Fi WORLD

FEBRUARY 1992 £2.00

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PREVIEW!**

**HEYBROOK  
SIGNATURE  
AMPLIFIER**

**MISSION 761i  
LOUDSPEAKER**

**WILMSLOW KIT  
LOUDSPEAKER**  
Building a  
mini-monitor

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**A PAIR  
OF KEF Q90  
LOUDSPEAKERS**



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naim audio



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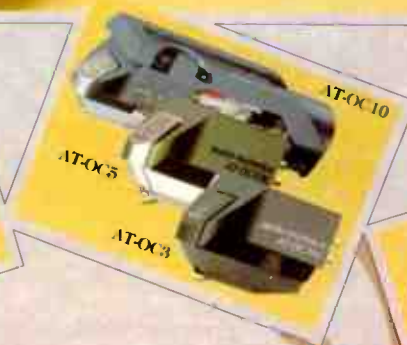
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# A Refining Of The PRINCIPLE



Bettini stylus  
from the A-T  
Gallery collection.  
Machida, Tokyo.



Little over 100 years ago Gianni Bettini became the world's first audiophile. As an Italian cavalry officer visiting New York in the late 1880's, he was intrigued by the newly introduced Edison wax cylinder 'phonogram' yet unsatisfied with its poor audio quality. Using his flair for things mechanical Lieutenant Bettini began to turn this business dictation machine into a device which would satisfy music lovers and to ensure the ultimate fidelity he opened his own recording studio on Fifth Avenue. There he made the first realistic recordings of famous contemporary opera singers and built up a fabulous collection of 'celebrity cylinders' including his holiness Pope Leo XIII. His 'micro-reproducer' phonograph was first in a line of successful models and today A-T salutes him as a true pioneer of high fidelity.

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

Meanwhile, please contact the A-T sales office for a complete selection of press review copies.

	ART 1	OC-30	OC-10	OC-5	OC-3
Frequency response (Hz)	10 - 50,000	10 - 50,000	10 - 50,000	15 - 50,000	15 - 50,000
Output voltage (1kHz, 5cm/sec)	0.35mV	0.4mV	0.4mV	0.4mV	0.35mV
Channel separation (1kHz)	30dB	30dB	20dB	27dB	27dB
Output balance	1.0dB	1.0dB	1.0dB	1.5dB	1.5dB
Vertical tracking force	1.4 - 1.6g	1.25 - 1.75g	1.25 - 1.75g	1.25 - 1.75g	1.25 - 1.75g
Coil impedance (kHz) / DC resistance	12Ω	12Ω	12Ω	12Ω	12Ω
Load resistance - Head amp/transformer	>100Ω / >20Ω	>100Ω / >20Ω	>100Ω / >20Ω	>100Ω / >20Ω	>100Ω / >20Ω
Coil inductance (1kHz)	50μH	50μH	50μH	50μH	50μH
Static compliance (cm/dyne)	30 x 10 <sup>-6</sup>	35 x 10 <sup>-6</sup>	35 x 10 <sup>-6</sup>	35 x 10 <sup>-6</sup>	35 x 10 <sup>-6</sup>
Dynamic compliance	8 x 10 <sup>-6</sup>	9 x 10 <sup>-6</sup>	9 x 10 <sup>-6</sup>	9 x 10 <sup>-6</sup>	9 x 10 <sup>-6</sup>
Stylus profile	Micro-linear	Micro-linear	Micro-linear	Bi-Radial	Bi-Radial
Magnet type	Special	Neodymium	Neodymium	Neodymium	Samarium-cobalt
Vertical tracking angle	23°	23°	23°	23°	23°
Dimensions L x W x H mm	22.2x16.8x17.3	25.7x16.8x17.3	25.7x16.8x17.3	25.7x16.8x17.3	25.7x16.8x17.3
Weight	9.7g	8.0g	8.0g	8.0g	8.0g

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to Stereo'  
- Real/Welch



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## DOUBLE DOLBY FROM AIWA

Aiwa, who suggest that there is still a future for the Compact Cassette in an ever-changing digital world, have launched two high quality cassette decks, both with Dolby S. The £549.99 XK-S7000 and the XK-S9000, which costs £699.99 have features never before seen in a cassette recorder. Both models sport a built-in eighteen bit, eight times oversampling digital to analogue convertor which can be switched out, for direct connection to a digital source. The DAC is not a low-bit device because Aiwa claim that these have a 20kHz RF output that affects the Dolby circuitry.

In addition to the DAC, the two Aiwa units have a wooden chassis base and Aiwa's Super AMTS cassette stabilising mechanism both designed to minimise vibration. On the more expensive XK-S 9000, the recorder has a four motor transport, using higher grade components in some areas of the audio path. Finally, the XK-S9000 has wooden side panels, to further damp the cabinet and a gold finish.



## ROCK SOLID BASS

The curvaceous Solid speakers from B&W, or more accurately from their "Rock Solid Sounds Inc." division, are now joined by The Bass Station. It is 47cm square by 20cm deep. The sub-woofer box contains eight 95mm drivers with a central reflex port claimed to go down to 34Hz. Combined, the Solid speakers and Bass Station can handle up to 500w, but Rock Solid Sounds say, can run off a stable 40w amplifier. Cost of The Bass Station is £349.95; a pair of Solids is £199.95.



## DANISH VALVE POWER

Copland of Denmark, whose CTA 401 integrated valve amplifier is reviewed in this issue, have brought out a power amp with a difference. While it has a pre-amplifier input, it will also behave as a CD/DAT line amplifier, with volume controllable via one of the three knobs on the front panel. Either line-level source or direct input can be switched in. Designer Ole Muller has opted for running pentode valves in ultra linear form "close to Class A" configured similarly to the CTA-401. Valves are selected and tested Shuguang Golden Dragons. Power is up nearly twenty per cent over the '401, at 30w per channel. Price is not far divorced from the CTA-401 Integrated, at £1498.



# trade winds

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

trade winds

trade winds

trade winds





**IMPROVE YOUR HEARING.  
FIT GROOVE TUBES.**

If you can hear the difference between a solid state amp and a tube amp, wait until you hear the difference Groove Tubes can make to your hi-fi.

Groove Tubes are much more than simply matched sets of valves; each one is precision tested in an amp circuit linked to a computer to the highest levels of performance under actual operating conditions. Clean true sound quality balanced sustain and even decay rate are amongst the qualities Groove Tubes engineers test for. The result is a perfectly balanced set of tubes that will work harder and sound infinitely better than conventional valves.

Whatever kind of music you prefer, you'll appreciate it better with Groove Tubes. Simply changing valves can create a whole different set of tonal characteristics to suit any style of music.

Hundreds of professional musicians from The Allman Bros. to ZZ Top use Groove Tubes in their stage amplification. Acts like Tina Turner, Genesis and Chris Rea. Now you can appreciate the same standards of reproduction as on the actual production in your own living room. So, fit Groove Tubes, sit back, and hear the difference.



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*No one was ever sorry they bought the best!*



## NEW GOODMAN'S MAXIM

The successful Goodman's Maxim 2 loudspeaker, which dominated the budget bookshelf market since 1986, has been redesigned. The ingeniously-named Maxim 3 only has its name, the exterior dimensions and its rear firing reflex port in common with its predecessor.

Goodmans have radically changed the Maxim, having spent two years at the drawing board. The metal dome tweeter is a new design which uses ferrofluid damping, while the paper cone bass driver has been replaced by a polypropylene unit. All the upgrades to the Maxim have not dramatically affected the price, which has been increased only slightly to £109.95

## LIGHT WEIGHT, HEAVY BASS

A portable CD player from Akai, the PD X81 is their first personal weighing in at 77 grammes and £109.99. This has twenty track programming with Intro Scan and repeat play. Complete with in-ear headphones and AC adaptor, the bass is enhanced via a "Super Bass System."



## KOSSETTING THE EARS

Shown for the first time at the Penta Show, Koss's first - and also the world's first, they say - portable electrostatic headphone system is now in the shops. The system comprises the cans themselves, Energiser/AC adaptor and battery case and cables, including an eight foot extension cord.

Two years' research have resulted in a novel power supply which can use batteries, and an ultra-thin polyester diaphragm. Frequency response of this ear-cushioned circumaural design is rated 8Hz to 35kHz. A serious in-ear Reggae beat... The system comes with a calf-skin carrying case, and so it should with a price tag of £1995.



## AKAI'S NEW CD PLAYERS

Akai have added two new Compact Disc players to the crowd. The £159.99 CD 27 offers 1-bit technology and three-beam laser pick-up complete with 32 track programming and remote control. Included is an optical digital output along with the analogue. This is a cheaper version of the CD57 reviewed in December, but lacking the variable output and numerical pad on the player itself.



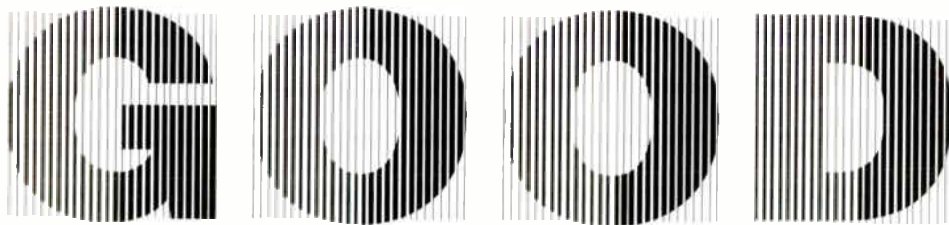
## AKAI IN TUNE

A new offering from Akai on the tuner front is the quartz-synthesised AT 27L. Three bands - FM, MW, and LW - are on offer with a twenty preset memory. Tuning is either manual or automatic, and each preset can be sampled for a few seconds to remind the user which station was memorised in case the envelope it was written down on is lost. Price is a remarkably low £99.99.

## TOWNSHEND'S TROUGH

Remember the Cranfield Rock turntable with its damping trough? Originally developed by Professor Jack Dinsdale at Cranfield Institute of Technology it became a feature of the Townshend Avalon, Rock and Rock Reference turntables. Intended to damp unwanted resonances in the audio band, a paddle fixed to the headshell is immersed in a trough of silicone fluid which is swung over the record and locked in place. Claimed benefits are cleaner and deeper bass, less coloration throughout the frequency spectrum, improved tracking and greater image stability. The damping trough, complete with paddle, fluid, base plate and nuts and bolts for fixing is now available as a self-fitting upgrade for turntables at £79.95. There are two provisos: the turntable must have a solid plinth and the distance between the top of the headshell and the top plate of the plinth should be 45mm or more. As the UK agents, D. P. High Fidelity of Crewe, point out, permanently fitting a trough will invalidate the original manufacturers' guarantees. D. P. High Fidelity can be contacted on (0270) 211091.





Only the very best loudspeakers can deliver the full width of the audio spectrum. Most of the lesser models fail, not in the bass, but in the vital high frequency area around and above 20,000 cycles, which is so essential in providing the stereo imagery needed to re-create the sense of 'being there'. Wharfedale's all new 25mm ceramic dome tweeter takes you 'there' effortlessly, offering perfect piston behaviour beyond 40KHz for super sweet treble performance.

*C' class*

And for once this brand new, high-flying technology doesn't cost the earth – the 'C'-class precision 515 can be making your system hit the highspots for less than £260 per pair.



PRECISION SERIES



**WHARFEDALE**

Wharfedale Loudspeakers Limited, Sandeas Way, Crossgates, Leeds LS15 8AL Telephone: 0532 601222 Fax: 0532 600267

World Radio History



## QED RESCUE LP

Anyone who is drowning in a sea populated by midi or mini systems with no provision for plugging in a turntable can heave a hearty sailor's sigh of relief. Those old fashioned black things with a hole in the middle need not lie idle. QED have produced the Discsaver, a phono pre-amplifier which will amplify and equalise the output from a cartridge to line level so a turntable can be wired into the Auxiliary input. Self powered by a PP3 battery, the little DS-1 costs £29.95, the optional 12v power supply an additional £14.95. The vinyl rescuer should be obtainable through dealers who already sell QED accessories.



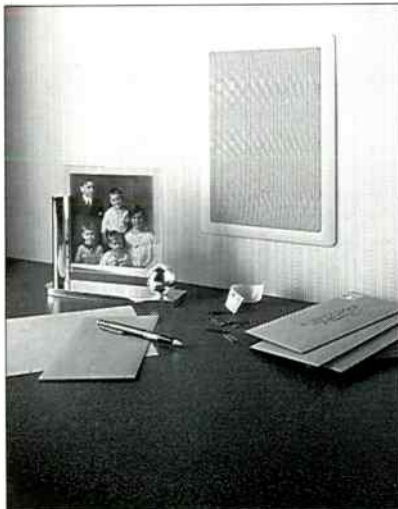
## ANOTHER NORMAN CONQUEST

French companies are sneaking into the U.K. even before the Chunnel is completed, courtesy of Northern Irish distributors Kronos. First on the list is French loudspeaker company Triangic, a big seller at the Calais end of the tunnel with a range from £225 to £2850. Returning to the U.K. is Y.B.A., Yves Bernard Andre's amplifier and CD player range. Now available in the U.K. are the Y.B.A. 1, 2 and 3 pre/power combinations (£6750, £3249 and £2125 respectively) with MC stages available for the 2 and 3. A more affordable prospect is the £1099 Integre integrated amplifier, and new on the scene early in 1992 will be two CD players.

Kronos are also distributing Audiomeca (Pierre Lume) turntables - the Romance, reviewed in December, and the J1, at £2050 less arm or £3625 with Lume's parallel tracker. From a little further out in Europe come Austrian Pro-ject Audio Systems' 1 and 2 turntables. If anyone doubted that the Single European Market is a reality, these match Regas in the marketplace for price. Cost is £175 for the 1 with a one-piece arm, £245 for the 2 with the same arm, a two-piece metal/glass platter, record clamp and phono termination for upgradeable arm cables. Kronos Distribution can be contacted in Northern Ireland on (08687) 67110, or GT Audio in the U.K. on (0895) 833099.

## UP AGAINST THE WALL

Boston Acoustics have developed the Designer series of in-wall loudspeakers. With grilles fitting flush against the wall, which can be painted to match the decor, the entire wall or ceiling is enlisted as an infinite baffle. The cheapest, at £119.90, uses a 3/4 in coaxial dome tweeter and 5 1/4 in polypropylene main driver and is only 6 3/4 in square. The other units, priced from £149.90 to £219.90, are a little larger and use dome tweeters. Maximum depth is a slim 3 1/4 in. Boston Acoustics speakers are distributed by Portfolio Marketing.



## PINK WAVE

In an effort, they say, to catch the final analogue wave and keep the LP user afloat in the CD sea, Pink Triangle have announced two "GTi" upgrades to The Little Pink Thing. First is a more sophisticated split-phase power supply based on the Pinnk Link which will be available from retailers in January for £85 including fitting. The second upgrade, available later, will be a new top plate for the LPT made of the same honeycomb material used for the PT Export and Anniversary. "GTi" when applied to a Pink motor apparently stands for "Great Turntable Improved."

## IN BRIEF

### CLEANER, SHINIER VINYL

The British Audio Dealers Association (BADA) have put together a list of dealers throughout the country who offer a record cleaning service. Charges are usually from 75p to £1, and the cleaned up record is returned in a new inner sleeve. The list is available free of charge from BADA (Rec. Clean list), PO Box 229, London N1 7UU.

### OCM IN UK

Studio Acoustics of Newton Abbot are importing the American OCM range into the U.K. This includes two stereo power amplifiers, one the 100w OCM 200, the second the 200w OCM 500, a stereo line pre-amplifier the OCM 55, and a MM/MC phono line stage, the OCM 10. Tel 0626 67060.

### RINGING THE CHANGES

Tannoy - and Creek, being part of the TGI group - have had a change to their Coatbridge, Glasgow head office telephone number. To avoid the number unobtainable tone, Melvyn (or his mum) should call 02236 420199.

### PICTURE DISC

As part of their publicity build up on Photo-CD, Kodak have sponsored an audio silver disc. Photo-CD is the one which stores 35mm slides so they can be viewed on television, and should be on the market in summer 1992; audio CD is the one we already know about. The music is Berlioz' Symphonie Fantastique performed by the Royal Philharmonic Orchestra conducted by Andre Previn on RPO Records. After two pages explaining that Photo-CD players will also play ordinary CDs poor Hector the composer just creeps in with a mention on the last line of the press release. It's good to see recordings - and the players - sponsored, but whether the world needs another Fantastique remains to be seen. Or heard, rather.

### AUDIO ART GALLERY

London dealers Grahams have found their way into the art market. Their reception walls are currently lined with "monoprints" by St Albans artist Peter Mullins. Grahams intend to display the work of professional artists in exhibitions lasting three or four months. What with Rega turning to cookery, what next?

**ATC - A BIGGER LEAP THAN CD**

We think the comments in your review of our SCM-20 loudspeaker (January 1992 issue) are fair, objective and expected; in many ways ATC is a bigger leap than CD and we all know what a hiccup that caused some segments of the fraternity.

We are slightly less happy with some of Noel Keywood's comments however. The brighter sound of the ATC was not caused by a rising response above 2kHz which does not exist, he had probably ignored the instructions and measured the speaker with the grilles removed. The result is a series of bumps caused by diffraction and which are eliminated by the radiused section of the grill frame.

ATC's will sound clearer (brighter) than conventional speakers because they have better low frequency control, better dispersion and less time domain distortion. To Quad ESL63 owners they will appear bright; because Quads are much more directional than a box speaker the total energy level at middle and high frequencies in the listening room will be lower. In other words Quads sound a bit dull and Mr Keywood prefers it that way.

There is always a problem using a true high fidelity loudspeaker with popular music, most of which is mixed to sound loud and clear on cheap loudspeakers; it will tend to sound too bright.

We were aware when we released the SCM20's that they would be a "Culture Shock" and that some people may have difficulty adjusting to them. This has happened, but nothing like as much as we expected, in fact they have been remarkably successful, having won several awards even in Japan. They are our best selling loudspeaker. Despite your observations on their suitability for recording studios the vast majority actually sell to hi-fi enthusiasts: the ratio is 25 to 1.

Our last point is to do with your comments on power handling. As a general rule, how much power a loudspeaker can handle is dictated by (first) its voice coil diameter and (second) its mechanical integrity. A 25mm voice coil

(most of the speakers in the review will have 25 to 32 mm voice coils) should handle a 25 watts sine wave. Since music contains less energy it is generally safe to use an amplifier of around 100 Watts. Most loudspeakers will survive with greater power inputs but will be less reliable as a result of overheating.

It is also worth bearing in mind that as the voice coil heats up, so its resistance increases, changing the way the crossover behaves. Although some models now have larger voice coils, most are not really intended to handle large amounts of power; 150 watts per channel is about right for most two-way systems.

The SCM20 is a very different animal, it has a 75mm ribbon wire voice coil, very special suspensions, black plated metalwork, tiny clearances and a very short coil (8mm) in a long gap (20mm), its cone can move + or - 20mm which is twice as much as some.

I claim it will go 6dB louder continuously than the others in the test, which is desirable if we are to get as near to the full dynamic range of music as possible.

**Ashley James,  
ATC, Stroud,  
Gloucestershire.**

**As stipulated by most speaker manufacturers, the loudspeakers were measured with their grilles off, but auditioned with their grilles on.**

**A grille cloth is supposed to be acoustically transparent; I'm surprised yours is not. This is the first time I have heard of cloth being used to tailor frequency response.**

**As stated and shown, the ATC SCM-20 has a rising high frequency response. Our measurements are extremely accurate. We use equipment similar to that of the best acoustic measuring facilities in the UK and our results correlate perfectly with them too.**

**Anyone interested in listening to the SCM-20 to check your modest claims should, however, be warned not to take the grille off. I found them bright sounding with the grilles on, but I am very treble-sensitive. Eric and Alan found it less disturbing, as we were careful to point**

**out. The great advantage of a group view is that it takes into account differing tastes and sensitivities, giving a breadth of opinion.**

**Wide dispersion puts more sound power into a room and results in a brighter balance, but it also produces more confusion from absorption-modified, time delayed reflections. Without front grilles, the Quad ESL-63 is substantially flat to 20kHz. Experiment has shown that back-damping to cancel rear radiation eliminates treble muddle from wall reflections. Spraying treble around a room does produce brightness; it also produces an unpleasant muddle. NK**

**ALL THAT JAZZ**

Now that you have expanded the Record Review space, isn't it time that you got someone (like me) to do Jazz reviews?

**James Taylor,  
London N22**

**Thanks! - but the missing musical link had already been identified. In response to a number of pleas, readers can now expect to see Jazz reviews. As with our Rock and Classical music pages, we have been scouting for someone with depth of knowledge, coupled with the ability to write in normal human-speak. We think such a person has been located!**  
**EB**

**EXOTIC PAIN**

Your article by Richard Brice in the December issue inspires me to write to you upon a subject which has frustrated me, caused untold misery and cost me a fair few quid: my stereo. My Grandad was a Rank Cinema sound engineer and his influence must be genetic, because I only heard his record player recently and had been searching for that sound for years. From one drive unit (Westrex edge wound 12") and 4 watts, his Philips/Thorens turntable filled the room with beauty, warmth and loud, deep double bass.

The nearest I came is with an old Pioneer record player - or a rubbish stereo off the council tip. These both have big mains powered motors which distinctly hum. They kick

the platter into a spin and are mounted directly to the sub chassis, as in a Garrard 301 et al.

Is my predilection for this sound explained by Richard's very astute observation that "we don't want, we never really wanted, true hi-fi"? Is the plethora of exotic, technological and F'ing expensive hi-fi just a pain in the arse?

Yours in retaliation,  
**Paul Evans  
Aberdeen**

**FRANGLAIS STYLE**

I was very interested by Peter Yates' letter in the November issue. My goal in hi-fi is realism - I want to have Miles Davis at home when I'm playing a record.

Recently I've started a new system with a £3000 budget. I'm French, but I'm studying in London so I know both the English and French markets well. During the year I've been listening to many different systems in London and Paris and in my opinion most of them were hi-fi madness. I remember listening to Apogee speakers powered by Krell pre and monoblock power amplifiers with the new Krell CD player. The sound of this expensive combination was miles away from real music. Clarity, detail and stereo are not enough to reach realism.

The best system I've heard is the one I bought, based on horn-loaded speakers from a small French company called Audio-Dynamic. These are quite tall, and heavy at 80kg each, but they manage to achieve a clarity and weight in the bass that makes listening to music a dramatic and stunning experience. I paid £1200 for a pair in kit form (they sell for around £3500 finished) and I use a 200W Perreux pre-power amplifier from New Zealand. I also bought a Rotel 855 CD player.

All this, with decent cables cost me £3200 and gives me a satisfaction that AE1 speakers - whatever the amp and the source behind will never achieve. I do believe that big and sensitive speakers are the best friends of musical emotion.

**Bertrand Fleuret,  
London SW11**



**FRENCH TEST MATCH**

Your "World Favourites" lists three pairs of speakers enjoying the same dimensions and in the same price bracket: the Rogers LS3/5a, Linn Kan II and Harbeth HLP3. Can I expect Hi-Fi World to publish a test match in the near future of these three speakers used with a high quality integrated amplifier like the Audiolab 8000A, Cyrus 2/PSX or Rega Elicit?

Just a word of warning: a friend of mine purchased a pair of HLP3's. It took a few months before they started to sing.

**Yves Pinton,  
Vincennes, France.**

It's tempting, but the three loudspeakers, despite superficial similarities, are liable to appeal to quite different tastes. The LS3/5a is the classic 'polite and refined' BBC monitor; it is easy to forget that they were designed as professional near-field monitors for a specific purpose, but found domestic devotees.

The Harbeths and the Linn Kans were designed to show their strengths in different domestic markets and with differing tastes in view, the Harbeths favouring Classical music and the Kans Rock. Although much the same in size and price, these speakers are in actual fact all very different in purpose. **EB**

**LEAK RECAPPED**

Earlier this year I had the pleasure of listening to the Audio Innovations 1000 series pre and power valve combination at The Music Room in Glasgow. Needless to say I found them to be a very impressive combination, but unfortunately out of my price range. They did give me an insight into the performance that valves are capable of.

I read with interest the article in the June issue about the Leak TL10 power amplifiers. I therefore decided to try and track down a Leak Stereo 20 power amplifier which the contributor quoted as one of his favourite Leak amplifiers. A few weeks later I was lucky enough to come across two of them in good condition at a local market and managed to get the pair for thirty pounds,



FREDDY AHMET

buying the second mainly for spare parts.

Following your published routine for old power amplifiers I found both of them worked fine. Using my Audiolab 8000A as a pre-amplifier, I found the Leak gave superior results to the Audiolab on its own.

I then decided to replace all the old capacitors with new high quality ones and the resistors with Holco Metal Foils and a complete set of new Golden Dragon valves in one of the Stereo 20s. I then made a comparison between the two and I found the Leak with the new components was vastly superior to the original in all areas - dynamic range, clarity, separation, etc. A few weeks later I was lucky enough to get a second hand Beard P500 valve pre-amplifier. Substituting this in place of the Audiolab really showed the Leak at its full potential.

I therefore have to disagree with your contributor that only components that have failed should be replaced. From my experience this wouldn't let the full potential of the Leak show through. I consider the Leak/Beard combination to be not as good as the Audio Innovations, but close enough and a fraction of the price.

I would certainly recommend any reader who is competent with a soldering iron who has an old Leak or similar valve power amp to try this simple upgrade themselves.

**Patrick Smith,  
Glasgow**

**MISSING VINYL**

I have recently returned from a holiday in Tenerife, and, while there, had occasion to read the 28th September issue of Music Week in which it was stated that Compact Disc now has 42.8% of the current market sales. The same publication also said that Dire Straits' new album 'On Every Street' had sold 62% on CD and 9% on LP.

I decided to write to you on these facts as I found three record shops in the area where we were staying bursting at the seams with, guess what, vinyl!

The reason CD is out-selling LP is because most High Street shops don't bother to stock the black disc (i.e. Woolworths and W. H. Smith) and it seems to me that the 'Great British Public' is once again being conned by the media into buying what they want you to buy without the choice we should have.

You, as a magazine for Hi-Fi people don't help. For example, the November issue had John Lee Hooker's Mr Lucky as Record of the Month. Was it stated that an LP is available as ORE LP519? No, just CD: ORE CD519. Come on Hi-Fi World, let us know when we can get albums on LP or lots of people won't look for them and CD sales will climb even higher.

Anyway, after the gripes, thanks for good recommendations on LP - John Lee Hooker and Christy Moore are both great records.

**N. G. R. Turnbull,  
Sandown, Isle of Wight.**

# readers' reply

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

**Whoops! We do like to quote LP if possible and we scout around to find LPs for our mail order music section. I can confirm that they are very popular. NK**

**IS VINYL DEAD?**

On reading your recent article in the December issue on "The Last Vinyl Christmas" (without a question mark!) I must say I was left with very diverse thoughts. On the one hand I was pleased to see an article on vinyl and it undoubtedly contained some interesting information. On the other hand, I felt you had been unnecessarily pessimistic, treating the whole situation as a "fait accompli" rather than accentuating the positive side.

I presume that as a magazine dedicated to hi-fi, you support the continuance of all formats that are capable of bringing high quality music into our homes, and that the LP still falls well within this criterion.

Continued on page 79...

One of my reviewing colleagues has suggested that I am an 'anachrophile' - out of step with the world today. I suppose that his theory stems from my appreciation of vinyl and valve amplifiers, as well as the respect that I have for bygone equipment. This has little to do with nostalgia as I intend to prove.

Simple nostalgia suggests that the person is absent-mindedly thinking back to a romantic ideal of what the past was like; this often has no bearing on reality. The mind has a great ability to gloss over the bad, remembering the good fondly. In hi-fi, the nostalgic remember the rich sound of valve amplifiers like the Quad II, but forget the shrill



but cheaper, device. By the time we get down to Person Z, there may be little of the original design left.

If this were 'survival of the fittest', with the better sounding amplifier begetting the next product along the line, then by Person Z we would have a truly superb design. There are, however, other elements involved which create changes in an amplifier that have no bearing on the sound quality. Price constraints are the most obvious of these, but other factors like reliability and aggressive marketing can create a success out of a product that is sonically no better than its predecessors.

This can create a stagnation in design, where products do not

no-feedback designs that use directly-heated power triodes in their output stages. This rare amplifier design (I can only think of a handful of power amplifiers which use this method of operation), has more in common with the 1930's than the later Leaks and Quads of the 1950's.

When the power triode fell from grace, it was replaced by pentodes and finally by transistors, FETs and even op-amps. The power triode has the ability to cope with far greater input voltages than the later designs and it needs no feedback circuit.

The suggestion is that the use of a feedback circuit affects the amplifier in the time domain, blurring transients and actually setting up a distortion-creating loop in the power amplifier. As it is not possible, as yet, to perform any form of objective measurement on this, it remains a hypothesis; but one based on a solid foundation.

From a subjective standpoint, the no-feedback design gives a sense of a musical performance that effectively side-steps any criticism that can be levelled at its measured performance. Good solid-state amplifiers have the ability to 'disappear', making it sound as if the source alone is driving the loudspeakers. With a good no-feedback amplifier, especially when sourced with a good recording, the entire system falls away, leaving the listener with an uncanny sense of 'being there'.

As if to add credibility to the time distortion problems of amplifiers with feedback, they all cope with transients in a near instantaneous fashion that highlights the sluggish dynamics of almost all other designs, either valve or solid-state. These amplifier designs are not perfect, but they are being constantly refined and (hopefully) improved as new advances are made, or old, forgotten advances are found in antique reference books.

So, in reply to my colleague's accusation that I am an anachrophile, I feel that too many people introduce changes that are either merely cosmetic, or just for the sake of change itself. New technology appears almost daily, allowing company after company to jump on the latest band-waggon. It's good to see this technology appearing on the market, but we should also never forget that because it is new does not mean that it has to be better ●

## Feedback from Alan Sircom

# sircom's circuits

transistorised amplifiers that took over the marketplace in the 1970's.

There are many things out of the past that should stay there. Those who have been hi-fi enthusiasts for a long period can remember a few of the industry's mistakes: Quadraphonic sound, for example, or the Sinclair amplifiers. Their like should never see daylight again.

There are, however, many things lying in the past that have great potential. But why did these products falter and disappear in the first place? Fashion is one reason. A product, or genre of product, can go in and out of vogue, changing with the views of the public. Amplifier designs that were popular five years ago may be less likely to find favour today. Often, these trends have more to do with marketing than they do with sound quality.

Secondly, our technological world has moved ever forward; major developments in the fields of electronics, materials science and production engineering occur regularly. A design that was too difficult to apply fifty years ago could be readily implemented today.

Finally, the product itself may have been used in a different application, without its full potential being observed at the time. Some of the finest line-level amplifiers of the 1930's, such as the Westrex, rarely made it out of the cinema

projectionist's booth. The ability to look at products retrospectively cannot be underestimated.

In many respects, it is the early products that the designer should look at for inspiration. There are precious few true 'inventors' in the hi-fi industry; most adapt from what is already around to produce their own innovation. In the days when the business of reproducing sound was still in its infancy, the designer had a blank page to design the recording or reproduction chain on - one had to be an 'inventor', as opposed to merely a 'designer'. This industry has had its fair share of inventors in its early stages; Edison is an obvious example, but later ones include Voigt, who held more patents than any other.

While some of these early devices are severely flawed, many of the early products are the source of today's designs, albeit in a very distilled manner. This is why the budding designer should look at the original product, as much as the nth distillation of the design.

As time passes, so equipment develops in an evolutionary manner. Let us say that we are dealing with an amplifier. Person A invents, from basic electronic principles, a crude one, which Person B refines, manufactures and markets with some success. Person C wants into the audio 'game', so he further 'refines' Person B's amplifier, changing it to produce a similar sounding,

improve, in an empirical and objective sense, but merely produce 'more of the same'. In fact, if more and more corners can be cut, we see that over the years the sound quality could actually worsen, although the designers themselves believe that improvements are taking place.

Another area that can misguide the designer is that of measurement. Again staying with amplifiers, they are all measured with a steady-state signal, such as a sine wave. Music is rarely steady-state and could be more accurately described as a series of transients at differing frequencies and amplitudes. The large discrepancy that can occur between an amplifier's performance in a steady-state measurement environment and a real-world musical one, suggests that designing for better and better measured performance might not have been the best avenue the amplifier builder could have taken.

My so-called affiliation with valve equipment has no basis either in nostalgia or romanticism. It comes from a genuine belief that the sonic performance of some valve amplifiers is superior to that of solid-state ones. I say some, because most valve amplifiers only offer an alternative view on the way an amplifier performs.

One of the areas where the sonic advantages of a valve amplifier really begin to show is when listening to single-ended,



## LINN LAUNCH COMPACT DISC PLAYER



One of the hi-fi industry's worst kept secrets, Linn Product's first Compact Disc player, has finally been launched. The Karik transport and Numerik digital to analogue convertor have followed on from Linn's forays into the recording business with their studio version of the Numerik processor.

Initially Linn described the player as 'two-bit' - one bit containing the transport, the other containing the D to A convertor. Now, however, Linn have set aside the jokes.

The Karik transport sports a unique four motor mechanism, with a triple beam laser pickup and a new demodulation chipset. This has been designed to be rugged and easy to service, as well as enabling the Karik to track problematic discs.

At the rear of the transport lie both optical and coaxial outputs. The optical output has a data rate of 20Mbps (million bits per second), while most other optical connections (Wadia, AT&T and Deltec aside) have a rate of only 6Mbps. The coaxial output uses a BNC plug, considered to be a better quality connection, in this context, than the standard RCA phono plug. The Karik also has facilities for remote connection in multi-room systems and a diagnostic output. This allows the Linn dealer to monitor the performance of the Karik, showing error rate, alignment and the remaining life of the laser. Linn intend that the adjustment and replacement of the laser should be no more complicated or costly than replacement of a turntable stylus.

The Numerik DAC uses two twenty bit, eight times oversampling, convertors, specially selected by Linn. Throughout the design, Linn have attempted to keep digital noise at a minimum by careful shielding of the crystal oscillator, the digital filters and even the printed circuit tracks

that deliver signal.

While the Karik and Numerik can be used with other DACs and transports, the two are designed to work optimally together. In addition to the BNC Digital Audio Interconnect supplied by Linn, there is a separate CD Sync cable that connects the two sections. This cable allows the clock of the Numerik to control the timing of the Karik transport, thus virtually eliminating one of the major causes of jitter.

I was fortunate to hear one of the first production samples of the Karik/Numerik briefly, in the context of several systems. My initial reaction was that it is easily one of the finest Compact Disc players currently available. I shall be able to validate this statement rather more accurately when the Linn becomes available for review, but it has an emotional, musical quality that has previously escaped Compact Disc.

This is combined with a level of treble insight and image depth that are hard to find in digital audio. I compared the player to several high-end Compact Disc players and even a good quality Linn LP12 turntable. The Karik/Numerik had a very different sound to all of them; not CD, not vinyl and definitely not CD trying to be vinyl. It rose far beyond the performance of conventional CD players in musical terms and even gave serious competition to the LP12 player.

Along with the Naim and Micromega players, the Linn is one of the few CDs that is actually enjoyable, as well as being clear and clean. In the small amount of time that I spent with the Karik/Numerik, I could find no areas of criticism at all.

Initially, the Linn Karik and Numerik will be only available as a pair. Price for the combination is £2590, plus £90 for the remote control, which is unnecessary if using Linn's own £1295 Kaim preamplifier **AS**

The £34,000 Ongaku amplifier reduced me to silence.

You see, it used just one, old fashioned and very simple triode output valve on each channel - one I had never seen before. With the resurrection of other high power triodes similar to that used in the Ongaku we look set to see and hear more about triode valve amplifiers. However, it isn't their appearance that captures my imagination, so much as their sound and some of the questions they pose.

How any amplifier can sound so different from others raises questions about truthfulness and accuracy. It also raises the profile of other, at times more contentious issues. There are those who



opinion

## Reflections from Noel Keywood kaleidoscope

believe we currently know all there is to know about amplifiers and sound quality. They would have it that modern solid state amplifiers, as long as they have no measured imperfections and are operated within their limits, then they will have no sound quality of their own.

Since it has been possible to produce such 'perfect' amplifiers for some time now, and since these not only offer no improvement in sound quality, but actually sound worse than 'flawed' designs, one inevitable conclusion has been that we actually don't like listening to perfection. It is the colouration introduced by various distortions that sounds good or enhances what we hear. It's a simple and highly plausible argument, backed by some apparently cogent tests that can be used in its defence.

The popularity of the new breed of 'old triode' amplifiers, with their radically different sound quality, could well be attributed to small flaws in their unusual measured performance, distortion being the factor usually seized upon to explain any and every difference. The subjective impact of second harmonic distortion, which triode valves tend to produce, is benign and difficult to identify, except when large quantities (more than 5% or so) exist. Even then, it only lightens timbre.

I do often wonder whether the natural microphony of valves adds ambience. The apparent correlation here is much closer; it

is quite easy to see how they might possibly be colouring sound by this method. Just tap a valve and you can hear the metallic ring of its electrode structure die away. If this were happening, then the larger the valve and its electrodes were, the stronger their colouration. Is this why the giant 211 valve sounds so good? It is a possibility I can't dismiss.

The other less easily understood but more likely reason for their better sound, especially in single ended output stages, is the sheer simplicity of the circuitry they bring to an amplifier. Instead of a myriad of small solid state devices, tied together in complex and imperfect configurations that are knocked into shape performance-wise by the use of AC and DC feedback loops, triode valve amplifiers offer stunning simplicity.

The stereo integrated amplifier held by Tsai Hong Jen (see p35) demonstrates this beautifully; it has just two valves per channel! In contrast, solid state amplifiers these days might have around ten to twenty devices per channel in the amplifying chain, or considerably more if integrated circuits are used. Many people feel that the less processing is carried out on a signal, the better it will be for it. I have a lot of sympathy for this view. I suspect it may well be the one of the reasons that amplifiers like the Ongaku sound so spectacularly different. With luck, so will a brace of less expensive rivals shortly to appear ●

I fell in love with the Heybrook Sextet, even though it wasn't perfect. Reviewing it back in our October 1990 issue, I found some blemishes, plus a compatibility problem. Any balanced and revealing loudspeaker needs a fine amplifier and this one in particular displayed so much analysis that amplifiers placed in front of it had their own problems rudely spread out for inspection. Compatibility is always a problem with really good hi-fi products, but especially so with this one I felt.

But we had inveigled an early sample of the Sextet out of the company, one that Heybrook had it in mind to fine tune. They felt that a tendency to brittleness in the treble and some lack of integration could possibly be removed. The difficulty of a matching amplifier was being addressed as well; a new one was under development. Both the revised final production Sextet and the new Signature preamplifier/power amplifier combination designed to match it are tested here.

Offering an amplifier to partner the loudspeaker, both electronically and in looks, should make the Sextet even more attractive. It could remove the compatibility problem at a stroke.

The Signature is sufficiently well thought out not to restrict usage of the Sextet. Whilst being a specialist hi-fi

preamplifiers, because they demand significant extra complexity, especially if top quality results of the sort Heybrook have achieved with this unit are wanted. Other inputs are Tuner, CD, Video and Tape, all selected by a rotary switch.

A second rotary selector chooses the recording source. It's a system that allows recording from one source whilst listening to another. Real time tape monitoring from a three-head cassette deck is also possible.

I smiled at the volume control system; Heybrook have adopted the ruse of using mechanically linked volume controls, something I first came across on the beautifully built EAR G88 valve preamplifier. Two knobs marked 'Volume' confront a user; one controls the left channel and the other the right. Turn either and the other turns automatically, for they are mechanically coupled with a friction wheel behind the front panel. To reset channel balance (i.e. volume in one channel relative to the other) grab one knob and turn the other. It will slip, so taking up a new position and altering the balance. This will be maintained when either is turned to adjust overall volume.

Why the complexity? It is done simply to avoid using the normal balance control, which commonly degrades channel separation. I'm not convinced such perfectionist extremes are

days) and the rotary selector switches felt a bit weak and wobbly (they only need stronger detent springs). The control knobs did not have the same finish as the fascia, but this should be changed in production.

To eliminate power supply hum induction from a compact preamplifier where the mains transformer would be close to sensitive disc circuits, an external transformer for the preamplifier alone is used by Heybrook. The power amplifier has its own external power supply as well, so the Signature is actually a four-box amplifier. Because the boxes are compact though (approximately 16cms high, 23cms wide and deep, not including plugs) they take up roughly the same amount of space as any normal sized preamplifier/power amplifier combination. They can also be split and shoe-horned into small spaces, making for flexibility of placement.

### Matching Style

As our pictures show, the Signature amplifier has been styled to match the Sextet loudspeaker. Strips of rich brown Birdseye Maple adorn the sides of each case and a shiny black acrylic trim runs across the top-front. It's a conservative appearance, but one that will blend in well within many UK homes I suspect. In fact, the Signature amplifier follows the Sextet loudspeaker in this respect, for the latter is very easy to site and blends in well too, taking up little space.

The power amplifier has no controls; it possesses only phono inputs and bi-wire output terminals capable of accepting bare wires up to 4mm in diameter or 4mm banana plugs (or both). The power umbilical is one metre long, but doubtless it could be extended a bit if necessary. Both the power amplifier and its power supply unit could well be tucked away out of sight, a low shelf being the best choice, since this brings it closer to the speaker cables. This would leave just the curiously cubical preamplifier out in the open, its own supply being put on the floor I would suggest.

After measuring and using the early Sextets I suggested around 100 watts of amplifier power was sufficient, since they have a normal sensitivity value of 87dB SPL (sound pressure level for one watt input). Heybrook say amplifiers up to 200 watts per channel are suitable. The Signature power amplifier produces a healthy 144 watts per channel, measurement revealed, enough to produce around 112dB SPL on musical peaks. This is extremely loud in a normal sized room (around 16ft x 12ft), far louder than most serious listeners would want. I normally settle on 100dB SPL for example, which is loud-ish and requires 50 watts into each loudspeaker. I hope this gives you some idea of what volume potential the Sextets have in conjunction with the Signature amplifier.

Measurement suggested that the preamplifier stage for moving coil cartridges was quieter than most; practice confirmed it. When using our relatively

**Heybrook's new Signature pre and power amplifier combination and revised Sextet speakers, autographed by Noel Keywood.**

# signed, sealed & delivered

preamplifier/power amplifier combination, it isn't obstructively minimalist. The preamplifier costs £499.38 without a phono input. LP users will have to add £149.58 for a phono stage externally switchable between moving magnet and moving coil. The stereo power amplifier tested here costs £922.38, but an external power supply is needed, priced at £293. So for CD only the total is £1714.76, which is quite hefty.

The preamplifier has a wide range of inputs, including very good moving magnet and moving coil input stages for LP. Manufacturers are understandably beginning to drop these from modern

necessary, but I'm not certain they aren't either! Little is certain in audio psycho-acoustics. There are no drawbacks, other than mechanical complexity, and stereo channel separation was very high, so the benefit proved to be measurable.

Like our original Sextets, the Signature preamplifier and power amplifier were early units. As such there were some minor blemishes, but they did not stop us getting an accurate and detailed picture of the final amplifier. I noticed some creaks in the coupling mechanism between the dual volume controls (pity high quality dual concentric controls are not available these



low output Linn Asaka moving coil (MC) cartridge a slight background hiss was just audible. It proved lower than vinyl surface noise though, disappearing completely when a record was played. I compared the MC input against our preferred reference, the Michell Iso. The differences were slight, showing the Heybrook stage to be a very good one. It had most of the openness of the Iso, but not quite its precise touch and speed. Curiously, it didn't have the strong left and right speaker imaging of the Iso either, in spite of excellent channel separation. But in compensation the Heybrook had a bigger low frequency performance; I wondered whether the Iso was just a trifle tweaked to favour the mid-band, in order to improve intelligibility, since it was delightful in this respect. It is a fine little line preamplifier for moving coil cartridges, but at £393 it also shows that the Heybrook preamplifier manages very well in this difficult area too.

### Power Amplifier

As it stands, I am less happy about the power amplifier. It has significant measured high frequency distortion (0.22%) and although I didn't hear overt coarseness, there was a slight lightening of timbre in the mid-range and a small degree of muddle and time domain smearing in the treble. The last effect became most noticeable with the percussive chords struck by Rory Block on acoustic guitar, playing Big Road Blues. The individual strings can be heard under the onslaught of her playing, but I was hardly aware of much more than a general representation of the effect with the Signature power amplifier. This worried me; I have listened to a high quality recording of this track on headphones many times and know well that the sense of speed, vibrancy and incisiveness are real enough; the Musical Fidelity SA-470 conveys it well too. The Heybrook seemed not to.

A certain weakness in dimensioning and a muted sense of atmosphere also worried me; I felt enjoyment slipping away. The Sextets sounded a little prosaic. But I did say in my original report that they are very amplifier sensitive and difficult to match.

The final jolt to my waning enthusiasm came with that Tina Turner track, Break Every Rule. The bass line was overblown and undercontrolled.

### Doing Justice

Moving back to 'our' Musical Fidelity SA-470 (every time MF say they want it back we say "fine, but you carry it." They never turn up) the Sextets jumped back into life. Aware that the '470 costs slightly more (£6000) and I could therefore be accused of not comparing like with like, I unhooked a Deltec DPA-50S power amplifier (£875/50W) from the Quads and put that into play.

The Deltec is tight, dry and highly detailed. It is one of the most insightful



amplifiers available, due mainly to its unique technologies. It confirmed my suspicions; the Sextets were fine and were responding faithfully to the amplifier driving them. The tracks I mentioned sounded superb, even if the rendition was different from that of the SA-470. My conclusion is that, as it stands, the Signature power amplifier does not really do the Sextets justice. It is good, but I would question whether it is really good enough.

Since I reviewed them in the October 1991 issue, the Sextets themselves have been fine tuned. Heybrook have now swung them firmly

into Quad ESL-63 territory. The brittleness of treble I noted has vanished, replaced by a fine, cohesive sound more akin to the balance found in the Quads and loudspeakers like the Epos ES11. In all fairness to some Rock music lovers, whilst the Sextets are wonderful playing Rock, they don't come at you with the enhanced boom and ting of more obviously muscular, but less subtle loudspeakers. Now, the Sextet has become even more civil than before; it is almost a 'quiet' loudspeaker it seems so utterly mild mannered.

A good loudspeaker should play Rock and Classical music with equal and



# SUMS AND DIFFERENCES

Is there a benefit to be gained by using a Compact Disc Transport with a separate Digital-to-Analogue Converter?  
Or could the money be as well spent on a single player?



**KENWOOD DP-X9010 transport £529.95**



**ARCAM DELTA 170/II transport £619.90**



**TEAC P-500 transport £649**

**AUDIO ALCHEMY DIGITAL  
DECODING ENGINE convertor £376**



**DELTEC LITTLE BIT convertor £395**

Report by Eric Braithwaite,  
measurements by Noel Keywood



It wasn't long after the introduction of Compact Disc that conscientious designers began to realise the single-box format had limitations. They reached the conclusion that separating the rude mechanicals from the sensitive electronic convertor might improve sound quality. It is possible to diminish unwanted interaction between components by this separation, the mechanicals going into a unit known as a 'transport' whilst the electronic circuits form a unit known as a Digital to Analogue Convertor, or DAC.

The problem of interaction has become more serious with high frequency Bitstream signals. This circuitry is particularly prone to radio frequency interference problems and it is extremely sensitive - not to say touchy - about layout. As a result, Bitstream benefits from a two box approach.

Arcam's original Black Box decoder came about because they thought they could do better by separating the servo motors and noise-generating parts of the disc drive - "all the bits that go whirr and could be microphonic" said Andy Howe of Arcam - from the signal processing circuitry which is purely electronic.

We also asked Rob Watts of Deltec why a mechanical transport should be separated from the electronic circuits it feeds. "The circuit in a single-box CD player will be sensitive to its environment. Mechanically, vibration can be transmitted from the transport, but RF (Radio Frequencies) are generated which can be picked up by the DAC through electro-magnetic coupling. It is very evident audibly. It can be picked up by

the amplification through even a screened cable, but that can be cured by using an optical link."

"There's a big psychological gain for designers in treating the transport and the DAC separately as well. If you have a brief that includes a transport and a DAC together, it can all become diluted. I think eighty per cent of the sound quality of a CD player is down to the DACs. A lot of effort needs to be put into their environment."

"But there are *disadvantages* in a two-box set up," he continued, "because with the particular interface used the clock signal for timing is transmitted along with the music data signal from the transport; it has to be extracted in the convertor. As a result you get jitter which is signal-dependent and audible. We use two lots of phase-locked loops to eliminate some of it, but it can't be eliminated entirely." This inside view gives some idea of why transports can sound different, even though digitally a number is a number and therefore they should all sound the same - which means having no sound at all. A little swapping of one company's DAC with another company's transport in our group of review products soon demonstrated this problem.

This month we put ourselves in the customer's shoes, picking several transports and putting them together with two DAC's. Both DAC's are Bitstream and both about the same price. Neither, as yet, have a transport dedicated to them. One is the Audio Alchemy Digital Decoding Engine; the other the Deltec Little Bit. At under four hundred pounds, these represent the

lowest readily available price for independent convertors.

We picked the least expensive transports available, in the £500-£650 bracket. They were a Kenwood DP-X9010, Arcam Delta 170, and Teac P500. Each was partnered with the two DACs, to find the most successful combination.

We also looked at the Deltec Little Bit and Audio Alchemy as affordable investments for the future. Would it be worthwhile tacking them on to an existing stand-alone player? Could an inexpensive player like this be bought with a view to using it later as a stand alone transport? We used a Pioneer PD-8700 CD player to test this hypothesis.

Finally, we pitted our combination transports and DACs against two respected CD players in the same price range - the Marantz CD94 II and the Sony CDP-X77ES.

Running order as follows -

**Convertors**

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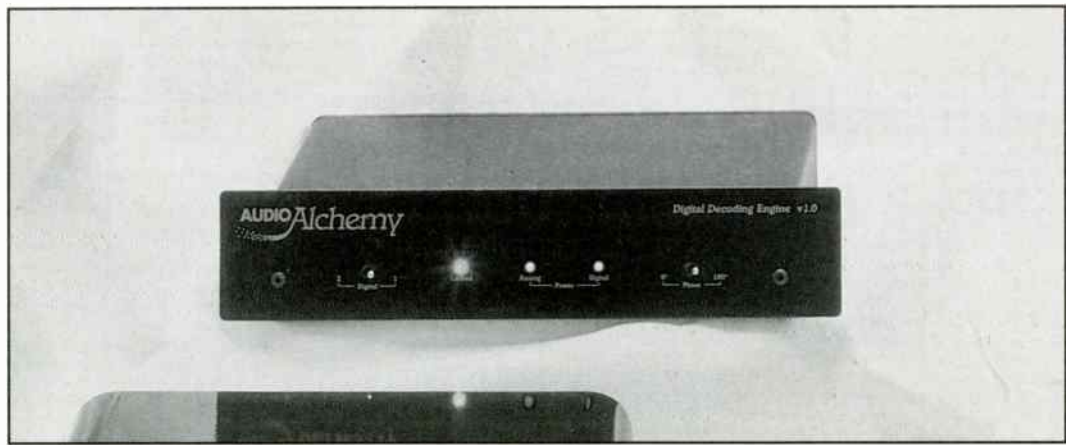
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MARANTZ CD-94 Mk II CD player £899.90



SONY CDP-X77ES CD player £1,000



## AUDIO ALCHEMY DIGITAL DECODING ENGINE

### Digital to Analogue Convertor

£376

The name is almost longer than the instrument itself. When it arrived, we thought the Audio Alchemy Digital Decoding Engine was a book we had ordered for review, for it is no bigger than the average paperback novel.

The 'Engine' also panders to the American fad for rack-mount looks, albeit with doll's house size, for the front panel overlaps the main carcass at either edge. On this tiny black fascia are two toggle switches and three LEDs, one red and two green. The red one indicates that the circuitry is locked to the right sampling frequency, the green ones that digital inputs and analogue outputs are performing. If these are all lit, then the cause of any unpredicted silence lies elsewhere.

One of the two toggle switches selects between Digital Input 1 (co-axial) and Digital Input 2 (optical), allowing two digital devices to be connected. What with Compact Disc and Digital Audio Tape already here and Digital Compact Cassette, MiniDisc and even Digital Audio Broadcasting heading our way over the next three years, this might be a couple too few. However, an additional socket at the back allows future interfaces to be plugged in, and apparently can soon be used for a DAC7 peripheral upgrade from Audio Alchemy. The other socket at the back offers a co-axial digital output.

#### PHASE INVERSION

The second toggle switch provides phase inversion, which takes place in the digital domain. There is some doubt about the virtues of inverting phase and even its audibility. It is not a panacea for a bad recording, or even necessarily an improvement on a good one, but it can be advantageous, if almost subliminal sometimes. It is certainly handy to have, though the "increased airiness" and "better focus" often claimed don't always - or consistently - appear.

The tiny dimensions are partly a function of the power supply being placed outboard in a 12v DC transformer, though ours arrived with an American

two-pin moulded plug. Inside the convertor's box itself is an SAA 72274 ADIC (Audio Digital Input Circuit) and Philips' latest 7320 series chip, the SAA7323. Yes, the Digital Decoding Engine is Bitstream. It had no audible quirks, though a slight spit was noticeable when switching between digital inputs. Thanks to the external power supply it stays stone cold, of course, and its small size means that it can

be parked almost anywhere.

How Audio Alchemy build this unit for the price was a mystery at first, for it is manufactured in California. Light dawned quite soon, though, for thanks to the Lilliputian size, about forty would fit into the average suitcase without even incurring excess baggage charges. A container would probably keep the UK going for a year at least.

#### MEASURED PERFORMANCE

Technically, the Digital Decoding Engine offers a bizarre mix of the new and the old. The frequency response shape is classic Philips, with ripples from the 5AA7220 digital filter appearing above 5kHz. Distortion at high levels looks much like that of budget Bitstream or good sixteen bit (see the Marantz PM-94 II). But at low levels resolution almost fails completely, with 80% distortion on one channel and 54% on the other. Even at -60dB distortion measured around 1%, compared with 0.4% or so from good Bitstream.

This means that the Decoding Engine resolves low level signals poorly, a problem thought to affect ambience and subtle cues the ear uses to perceive a sense of space or an acoustic around a performance. It doesn't remove 'detail', often short term, high frequency events imposed on a strong signal, but it can weaken or erase the atmosphere in a performance - if it has one of course.

Although I was unimpressed by this result, the fact is that at normal music levels distortion was low - just 0.027%, as our analysis shows. In use it is this that will most affect what we hear, low distortion ridding CD of the slight roughness or coarseness that can colour it. The low level problem is likely to be less obvious, except in direct comparison against a more capable convertor.

Basic tonal balance is preserved by the flat overall frequency response characteristic. The filter ripples might look disconcerting, but subjectively they are benign.

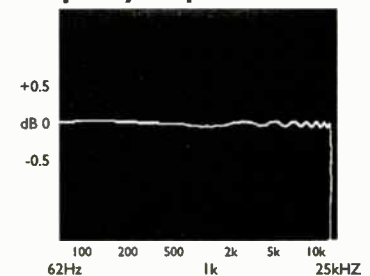
Output was +2dB higher than usual, giving this decoder an advantage in A-B demonstrations. There were some spurious outputs above 20kHz, but they were not high level.

The measured performance of the Digital Decoding Engine was a mixed bag, being a curious mixture of good and bad. **NK**

#### TEST RESULTS

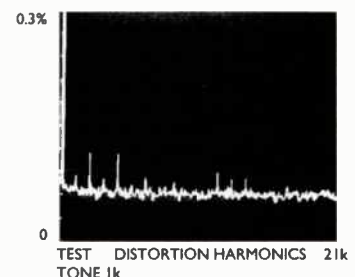
Frequency response	4Hz-20.8kHz	
Distortion		
-6dB	.008	.007
-30dB	.027	.027
-60dB	1.3	0.9
-90	80	54
-90dB dithered	50	27
Separation	left	right
1kHz	-103	-94
10kHz	-79	-84
Noise	-95dB	
with emphasis	-97dB	
Dynamic range	100dB	
Output	2.6V	

#### Frequency Response



Flat response with filter ripples

#### Distortion



Negligible distortion



# DELTEC LITTLE BIT

## Digital to Analogue Convertor

£395

Deltec's Little Bit Digital to Analogue Converter is poles apart from its rival in this review, Audio Alchemy's Digital Decoding Engine. Not only in looks, but in geography. Deltec are based in wild Wales, Audio Alchemy share their habitat with sun and surfers over in California.

The Little Bit is built into a more sizeable and heavier case, with the thick, rounded front plate that is a Deltec trademark. Olive grey, with that orange-peel mottled finish that people either like or hate at first sight, the front panel is devoid of anything other than a green LED which proves the device is switched on. Anything other than the Deltec logo screen-printed in gold, anyway.



### MEASURED PERFORMANCE

The Little Bit now uses Philips' SAA-7350 Bitstream chip, the latest in the line, ignoring DAC-7 which supplements it in ultra-high quality convertors. Whilst the Little Bit has received quite a good press elsewhere, I have always been unhappy about it. The problem was - and still is - distortion. The SAA-7350 can be difficult to apply. Incorrect board layout causes mutual interaction between the high frequency digital stages and the audio outputs, a peculiar form of distortion being the result. The Little Bit suffers this, as our analysis shows.

It was interesting to hear Eric express concern about this convertor's sound quality, for reasons he couldn't quite put a finger on, before I told him about the distortion. At a low level it can be unsettling for almost subliminal reasons: you know something's not quite right, but you can't say exactly what. That was the case with this convertor.

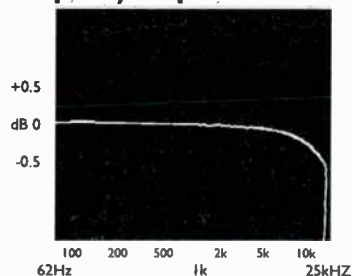
Deltec roll down high frequency response; it is in fact a by-product of their high frequency filtering. These convertors are the only ones, in my experience, that usually don't sound warm and 'smooth' (smoothed?) by this effect. Quite why is difficult to say, but Deltec circuits and techniques often differ from the norm., which may be the reason.

Effective filtering removes spurious outputs above 21kHz; in this area the Little Bit performs extremely well. Noise was satisfactorily low and channel separation wide. The convertor measures well, except in terms of distortion. **NK**

### TEST RESULTS

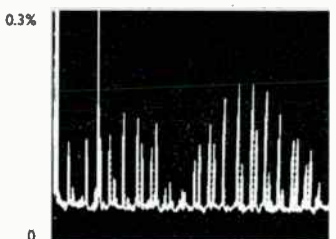
Frequency response	4Hz-21.2kHz	
Distortion		
-6dB	.002	.004
-30dB	.04	.04
-60dB	1.1	1.2
-90	39	41
-90dB dithered	20	22
Separation	left	right
1kHz	-110	-104
10kHz	-102	-89
Noise	-102dB	
with emphasis	-104dB	
Dynamic range	98dB	
Output	1.9V	

### Frequency Response



Treble roll off above 10kHz

### Distortion



Significant distortion, seen as spikes

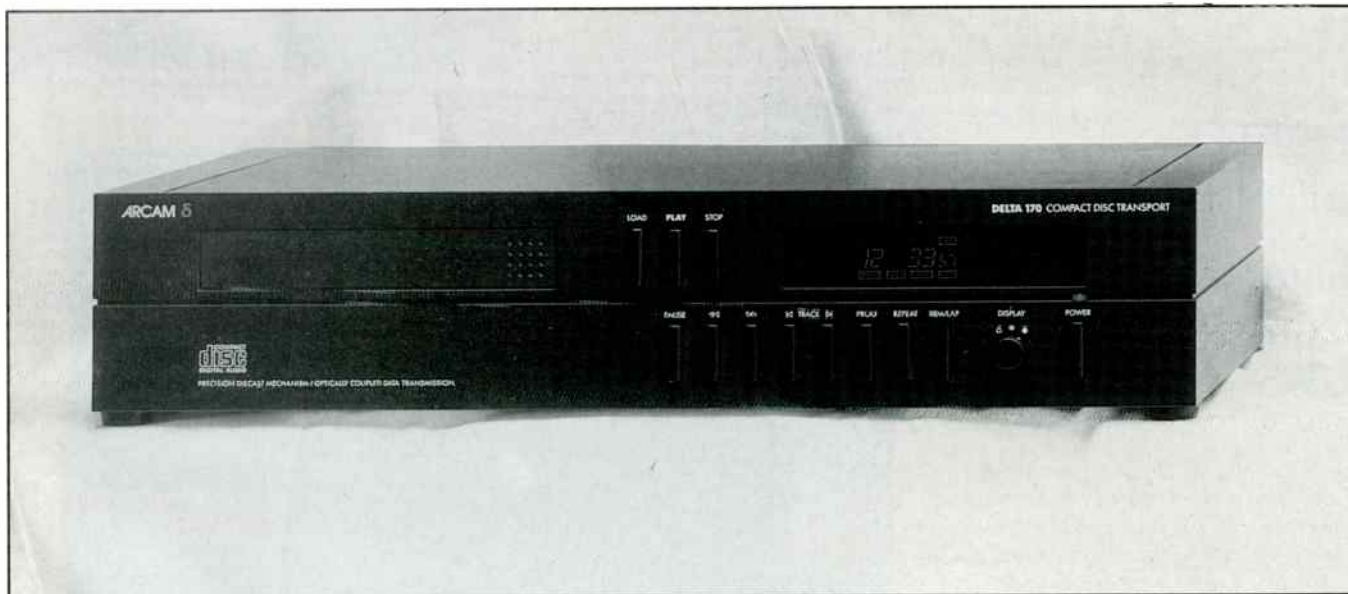
Round the back, things are kept fairly simple too. There is an On/Off rocker switch, three gold-plated phono sockets, and a Toslink connection. One pair of phonos is the analogue output (there is no digital output) the other being the co-axial input. There is a limitation for the digitally-minded here, for two digital inputs does not mean two sources can be connected at one time. Deltec, almost alone in a world that universally appears to despise optical connectors, have constructed circuitry which will automatically default to the optical input if both are connected. Intervention of the human hand, except to simply disconnect it, is unavailing.

This has some relevance. If a prospective buyer is considering using another sixteen bit digital source, like DAT, as well as Compact Disc then this means additional expense on either a second (or third) DAC, or some fiddling with cables at the back of the Little Bit. This can be quite disconcerting, for the box has only three feet, and tends to tip over. The Little Bit is provided with an IEC mains socket and lead.

When the Little Bit was switched on I heard some whistling from the tuner. I suspected the unit to be generating RF, and it seems advisable to either switch it off when not in use, or experiment with placing it where it will interfere least.

There is an optional mains filter made by Deltec, at a cost of £99.95, but this of course would bring about a price mismatch between it and the Audio Alchemy. However, if on audition the Deltec were preferred, it is a useful future upgrade. ▶

comparison review



## ARCAM DELTA 170/II Transport

£619.90

Finished in charcoal grey and reflecting Arcam's now traditional house style, the Delta 170 presents a tidy face to the world.

Like all Arcam products this one is built into a robust but light all-alloy case. It has a blue fluorescent display that shows both track number and elapsed time. The drawer is at top left, together with three major controls - Load Play and Stop. They are placed between the drawer and the display window.

Neatly aligned under a horizontal dividing groove that helps disguise its height are the Pause, Track skip and search, Programme and Time lapsed/remaining and Power buttons. There's even a three-position dimmer knob for the display which also allows it to be turned off. This is not a player which has you stuck if you lose the remote control.

Lighter than the Teac, but well-put together, the Arcam uses a Philips alloy mechanism which has a tendency to bump and grind a bit when the drawer opens and closes. It does, however, appear to possess a usefully long life. This is a transport which has received a rather mixed reception when partnered with Arcam's own various Black Boxes, and may have been rather let down by them, so it seemed ripe for checking out with the equivalently-priced Decoding Engine and Little Bit.

Both optical and electrical digital outputs are provided on the rear panel.

### FULL-BODIED RED

The Delta 170 is a full-bodied red wine to the Teac's dry white. Immediately obvious was a full, even fulsome sound, with plenty of presence and solid imagery. There was no difficulty in closing one's eyes and imagining life-size and lifelike performers - and instruments - between the speakers. If

anything, this was perhaps a little larger than life. The Arcam transport proved remarkably adept at eliciting every last nuance of a performance, ignoring nothing the microphones took in.

The Deltec Little Bit was attached first. Both instruments and players took on an appearance of great clarity on a very spacious stage. This combination focussed very sharply on centre stage, related later to a very emphatic mid-band with a tough, hard-hitting upper bass. The outer edges, however, gave the impression of being less well defined; not vague, but harder to concentrate on. Multi-tracked recordings were extraordinarily easy to follow, practically track by track, aligned across the stage.

Orchestral music equally demonstrated a very clear separation of the instrumental sections, though there was some tonal muddle in the violins, with Firsts and Seconds tending to close in on one another. The combination of Deltec and Arcam worked well, with a forceful, forward overall presentation. Perhaps a little too forward and forceful, for prolonged listening suggested that a strong vocal could distract attention from instrumental lines. With the Little Bit in place, every piece of the jigsaw puzzle that makes up a recording was perfectly visible.

### ROUNDER SOUND

Replacing the Little Bit with the Digital Decoding Engine produced a rounder orchestral sound, a little more even across the frequency range. A certain flabbiness in the bass reaches was tightened up, compared to the Deltec. There was a touch of the ethereals, with rather sweeter violins and a lighter hand overall. Images were splendidly large with body to them, as they had been with the Deltec.

They were also more even laterally, but not as sharply focussed in the centre. Performances, especially acoustic ones, were a little fresher, but not as clean-shaven rhythmically or quicksilver sharp as one felt they could be. Inverting phase added a degree of forcefulness, producing a more homogenous sound, though dulling the inner definition so stage depth flattened by comparison.

The differences here are very subtle, and there is no doubt the Arcam is a very good transport, with two reservations. There is a suspicion of less control of bass, which dulls the impact of low piano notes and the bottom-end thump of string bass. In this respect, the Audio Alchemy DAC did the Delta 170 a favour, by hardening and clarifying the bass.

The second reservation relates to the optical output. Though some care was taken over the interconnect, the combination of Toslink and Audio Alchemy did the sound no favours, unless making the Delta 170 more laid-back counts.

For pace, taut rhythm, vigour and sheer analysis, it should be partnered by the Little Bit. For a slightly sweeter overall presentation, and more orchestral subtlety, especially in terms of finer shading in the interior of the performance, it should be partnered by the Digital Decoding Engine. Both apply a firm grip; the Audio Alchemy's in a slightly softer velvet glove. This one really is down to personal taste, in the end.





## KENWOOD DP-X9010 Transport

£529.95

The flat front of the Kenwood is relieved by a slightly raised moulding that holds the display panel, central drawer and chamfered shelf below. This last contains nothing but the Display Off button. Apart from the basic facilities of Track Search and Skip, Time Display, Repeat, Play/Pause and Stop, which are relegated to an inset panel on the right, just beyond the round Drawer Open/Close button, everything else is handled by the remote. The brushed aluminium fascia, while at first glance looking rather bland and unimposing, is at least tidily arranged, and even the clumsiest fingers are unlikely to slip off the large main function keys. These light up with cassette-type symbols for extra reassurance that the user's intention has been carried out.

Adjustable suspension on the drum feet allows owners to tune the suspension for best sound quality.

The remote offers programming via a 1-20 numerical pad, Drawer Open/Close and Index Search. No temptation to shuffle the tracks randomly was discernible. Should you wish to play a CD in an unpredictable order, it will have to be programmed manually.

What is available, however, is an automatic Edit function, which will juggle tracks to fill a specified time for taping. If the end result misses out a favourite track, hard luck! Finally, power is supplied through a captive cord, and there is both a co-axial and optical digital output.

### DISTINCTIVE CHARACTER

It was clear that the Kenwood had a distinctive character of its own. Common to the group, however, was a degree of detail evident in recordings which placed it high in the ranking in initial listening. Noticeably brighter than either the Teac or the Arcam, it had a well-defined and

very deep, solid bass, outstanding among its peers. It appeared to rock along very well, with a sparkling upper range and marked speed.

Differences between the two DACs showed quite early with this transport. With the Delttec and optical input, as preferred by the designer of the Little Bit, vocals and the centre of the soundstage were forward and rather larger than life. The player was remarkably bouncy and fast, with a quick, pacey rhythmical sense and very forceful bass which made almost every CD one to set feet tapping.

Countering this, however, was some very evident sibilance on vocals, with an associated spittiness in the treble and something of a glare in the upper reaches. This made brass distinctly hard, draining away some of the nuances of jazz solos and confusing orchestral textures in the string sections too, though plucked string bass was much more realistic.

Changing to the co-axial input, curiously, while narrowing the soundstage, subdued some of the bright sparkle, but also offered a slightly warmer, rounder, and fuller sound throughout. Glare was replaced by a sheen on instruments in the upper parts of their range, and a less hard tonal colour all round. Bass now sounded more damped, and less forceful. Plosives and fricatives, while still over-emphasised, at least were not quite so obviously separated from the words, though there was a discernibly bitter edge to vocal lines. The change, though subtle, was marked.

Changing to the Audio Alchemy Digital Decoding Engine emphasised the good points - but also the bad. A serious plus was that the sheer speed of a performance was brisker. This became a very clean-cut swinging player, and a clear leader in the group in terms of rhythm and pace. Apparently, at first, a leader in dynamics, too, because the bass was even

weightier and more solid. The combination opened up a clear-cut, clean-edged and very tight perspective on a performance. Vocals, however, were also sharp, with spittiness on sibilants and plosives and fricatives rather puffy. The sharp edge here tended to merge instruments with similar tonalities, and a flute in one mix was distinctly thin in tone.

The upper mid-range could tend to shout, and instruments in their middle range lacked the impression of a solid body behind them. Changing to the optical input on the Audio Alchemy took out some of the sharpness and widened the stage, though lessening the sharp inner focus. Recordings became yet a little more forward. The bass, however, retained its awesome strength.

### CURATE'S PUZZLE

The Kenwood was something of an enigma, the kind of egg that would puzzle a curate. Extremely fast and dynamic on the one hand, with a bright clean sound, it was still not accurate in tonal colour in the mid-range, nor did it display the insight into a recording that one might expect. Listening, concentration was drawn to dominant vocal lines, the all-embracing rhythm and beat. It was only on close inspection that it turned out backing vocal groups, for instance were difficult to put a figure to. Yet it did rock, bop and swing fast and furiously, and was an absolute delight in this respect.

The mid-emphasis of the Delttec, through the co-ax input, did help to tame some of the excess, but lessened the dynamism; the Audio Alchemy let everything bound through. This is another player where personal taste and auditioning must be called into play, especially bearing in mind it was the cheapest transport in the test. ▶

## TEAC P-500 Transport £649

Packed into this chunky shoe-box shaped package (size 10, or thereabouts) is an intriguing feature. This is the "Vibration-Free Rigid Disc Clamping System" which works in a similar way to Pioneer's turntable, but topsy-turvy. The loading tray looks standard enough, and slides in and out with great smoothness, but once inside the disc is pressed up against a round plate driven by a motor, instead of clamped over a spindle. Advantages of either system - more stable tracking of the laser, for instance - should be comparable, with the disc offered more substantial support in both cases.

Externally, clad in grey metal with a champagne gold fascia, the Teac is unremarkable except for its obviously solid build. The drawer is central, with the display window underneath, the square-ish on/off button to the right and three controls, for Load, Play and Pause at the right. This is a transport for the couch potato, for without the remote it is only possible to load the disc, play it, or skip forwards or backwards track by track using two tiny gold buttons under the drawer. About the size of ear-studs, these buttons are so understated it was a few minutes before I realised what they were for. The remote handles every other transport facility.

A reassuringly solidly-built affair, the P-500 stands firmly on its four rubberised drum feet. Like other transports in this

test, it showed no signs of disturbance or flustering as one of the next door launderette machines began shaking itself from its moorings.

The P-500 has a distinct, though subtle character of its own, and has been categorised elsewhere as sounding a bit washed-out. That was certainly an initial reaction, especially with one breed of cable, but impressions became more favourable with 75ohm coaxial interconnect through both the Audio Alchemy and the Deltec convertors.

### SUBTLETIES

We are talking real subtleties, here, for in common with the other transports one finds oneself searching areas of tonality for nuances of expression, elements of the recording for precision of detail and instrumental frequencies for realism. In none of these could the Teac really be faulted, but it still left listeners with a niggling sense of dissatisfaction. Nothing was missing: examine a guitarist's left-hand fingering, and it's there, exposed; listen for a trumpeter's breathing, the clack of piano keys, or a singer's vowels, and that is all on display too. What is lacking is sharpness of focus. It is as though a singer's voice - or a musician's instrument - is a soft-focus photograph rather than an etching. This is not a player to deeply engage the attention, or to grab it forthrightly.

The Deltec Little Bit appeared not to have any kindly feelings toward this transport at all. Lively Rock music had a forward central image, but with the outer edges growing gradually more diffuse and individual instruments difficult to locate. Bustle in the upper mid and treble appeared to be just that, with some confusion discernible in instrumental lines. Vocalists were fairly clearly placed, but Van Morrison, for instance, lost some of the notorious hard edge on his voice as he closes up on the microphone, although the intonation was intact. Orchestral works sounded full of tonal colour, but with an equal lack of focus on individual sections. There was a pleasant overall listenability, like listening to Radio 2 or Melody FM, but more of the midrange than the frequency extremes, which rather than enhancing one's concentration tended to dissipate it.

### SOFTLY LIT

Using the Digital Decoding Engine, while the same fundamental characteristics were still retained, orchestral music came over with a rather more even overall tonal balance, with slightly clearer, softer woodwind, for example. Bass was by no means as deep, and rather dry and lean, but this did help to take one's mind off the gauze, softly-lit soundstage. In this combination, the Teac was more generous with a wider spread of sound, which was appealingly full-bodied. The slight hardening of the bass was a distinct advantage, pulling the whole performance together more. The Audio Alchemy is - albeit to a trifling degree - a little hastier with reverberation and recorded ambience than the Little Bit, and this helped to sharpen up vocals and instrumentals, giving the Teac the impression of being a little faster and a bit more lively, though without losing its grip of the picture.

If the Teac could focus more sharply and be more daring, it would be more than the somewhat undistinguished dry white wine than it is. The Deltec, though obviously trying to mix some darker grape juice in, proved a little too much. The Audio Alchemy, however, without amending some of the Teac's velvet-hand-in-a-soft-duster approach, stuck with as much detail as it could find, and hung on to the transport's own overall balance without letting any of it slide away.

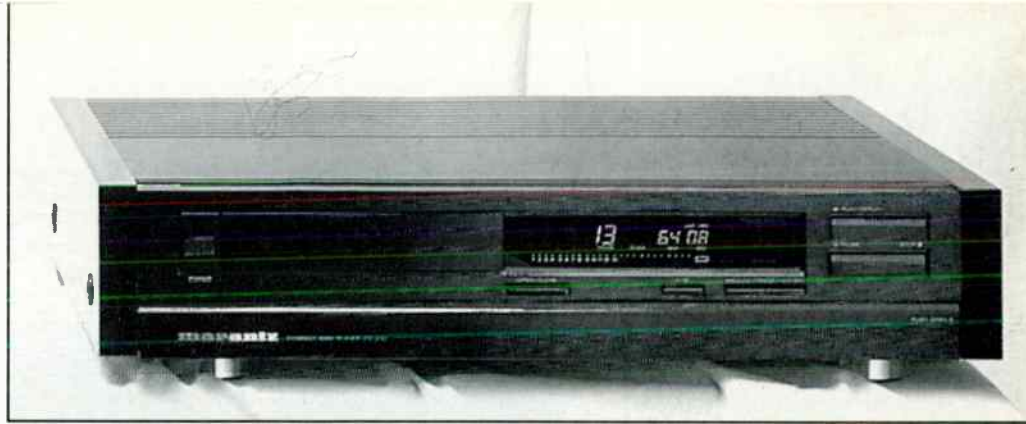
This was not a perfect combination; compared to others it was something of an easy-listening one. But then, it's not provocative either. It is worth noting that the Digital Decoding Engine's phase inversion proved lightly beneficial to simpler recordings, turning the sound a little creamier and less milk-and-watery, but, alas, without improving the overall focus one iota.



# MARANTZ CD-94 Mk II CD Player £899.90

The Marantz CD-94 II is a beautifully finished affair, wider and lower-slung than the Sony CDP-X77ES, with shiny wooden end cheeks and an elegantly simple black fascia. The upper two-thirds contains the power On/Off switch at the right, the relatively nippy and smooth acting drawer, the display and basic controls: Track Skip, Play, Pause and Stop. Everything else, including the headphone socket and associated volume control, is neatly aligned as an array of small gold push buttons (for track selection) and grey keys. These, for index search, programming, memory and FTS selection, hide behind a flap. All the functions, except Drawer Open/Close and Favourite Track Selection, can be operated from the hand-held remote.

Favourite Track Selection allows the user to programme a selected order of tracks for replay; the memory has enough capacity for between seventy and a hundred and fifty discs, depending on how many tracks are memorised. This system is without the additional subtleties now provided by Philips in the latest CD-850,



which the user can also use to display titles. Then again, the Sony CDP-X77ES lacks this too. This Marantz player also provides A-B repeat and Shuffle Play so you can repeat any section of a CD ad nauseam, or randomise the order.

Outputs are conventional, there are none of the Sony's balanced outputs on this player. There is a fixed analogue output, and both co-axial and optical digital ones. Power is supplied by one of those rather flimsy figure of eight mains leads inserted into a socket at the back, where otherwise the only feature to catch the eye is a solid heatsink.

The CD-94 Mk II certainly appeared to be well-laid out internally and well made. The die-cast transport brought some admiring glances on the test bench. It looks seriously engineered.

There is some serious bass power

tucked away in this machine. So much so, that for only the third time in their life so far, my ESL 63s shut down in protest at some thunderous low bass which I hadn't before realised was there. The last time that happened, it was another Marantz that did it, so it seems that the back room boys of Marantz like their bass powerful.

The CD-94's most obvious attribute was extremely full instrumental tonal colour, which spread over the entire frequency range. Not only did solo trumpet display every single semi-quaver the trumpeter intended, but all the subtleties of his embouchement as well. This carried over to every instrumental section, with the timbre of instruments clear and distinct. It was possible to hear the different strengths of bowing in string sections in an orchestra, for example.

There was an extended reach upwards, too, with top notes at first hearing sounding almost fierce. But then, in real life, they do, when intended, and this player gave the most extraordinarily believable representation of real life playing. Except for the Arcam, this is one of the very few players to display real depth to a soundstage. The benefit is that a listener could gain an impression of the size of the body behind a solo instrument, with vocalist and instrumentalists out in front of the speakers and everyone else in clearly related positions. The degree of inner detail was equally remarkable, with edits and extraneous studio noises opened up for all to hear.

Orchestral and vocal tone and timbre were nothing short of superb; there is power behind every note, not just the bass. The whole contributed to a sense of liveliness and downright joie de vivre from every recording which went into the drawer. This, by the way, though quite nippy in opening and closing, was less quiet in operation than any of the others, with the exception of the Arcam.

While performances were splendidly homogenous, some coarseness was detectable in the mid-range, which probably accounted for an occasional muddle in busy pieces across the soundstage. It was possible, to a degree attained only by the Arcam, to dip in and out of a recording at will, focussing now on the percussion, or a single drum, now on a bass player, now on the first violins, then on a woodwind player. Old technology this may be, but in the CD-94 Marantz have created a real musical performer.

## MEASURED PERFORMANCE

Being a successor to the original well respected '94, the Mark II model continues onward with sixteen-bit technology. It uses Philips TDA-1541A chips, albeit in very low distortion form. Connection in differential mode, which cancels some distortions, yields a fine performance. It is an advantage that brings the player up close to the best of Bitstream, at least in terms of distortion performance.

The spectrum analysis clearly shows lack of distortion harmonic by the near absence of spikes. This should remove the slight coarseness that coloured the sound produced by the standard chip, effectively making sixteen-bit a near equal to Bitstream. Only at low levels does the '1541 still not perform as well as the best of Bitstream.

The frequency response analysis shows a flat characteristic, one that ensures a good sense of tonal balance will exist. Marantz don't engineer in 'smoothness' by rolling off upper treble, but nor is there any peaking, which is usually disastrous.

The noise figures were lower than those of most Bitstream players, but differences here are academic since noise cannot be heard from either system.

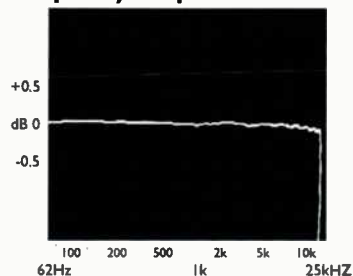
The CD-94 II produced a bit more unwanted output above 21 kHz than the best of recent DACs, but again it gave little away. The poor dynamic range figure is an indicator of mid-band distortion at low levels; Bitstream now hits 110dB.

The Marantz CD-94 II performed very well for a sixteen bit player. It does not match the best of the Bitstream designs, but is on a par with both the Deltec and Audio Alchemy DACs tested here. **NK**

## TEST RESULTS

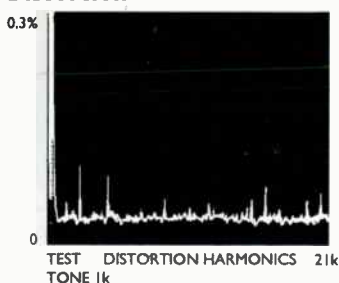
Frequency response	4Hz-21kHz	
Distortion		
-6dB	.005	.005
-30dB	.028	.028
-60dB	.7	.6
-90	47	49
-90dB dithered	13	13
Separation	left	right
1kHz	121	121
10kHz	98	98
Noise	-114dB	
with emphasis	-116dB	
Dynamic range	104dB	
Output	1.85V	

### Frequency Response



Flat frequency response

### Distortion



Very low distortion from sixteen bit

# The Heybrook Sextet



*"I found the Sextet visually attractive; it is interestingly different, whilst at the same time remaining traditional and tasteful."*

*"The Sextets strode along with superb pace and control. They fully conveyed the intent and involvement of that bass line - and I loved them for it."*

*"They have the firmest bass I have heard for a long time"*

*"There are no 'ifs', 'ands' or 'buts' about this: the Heybrooks image spectacularly well and the information they project forward is of superb high quality"*

*"I was captivated by the Sextets, which preserved all the excitement in music and presented it with great forthrightness."*

Noel Keywood,  
Hi-Fi World, October 1991

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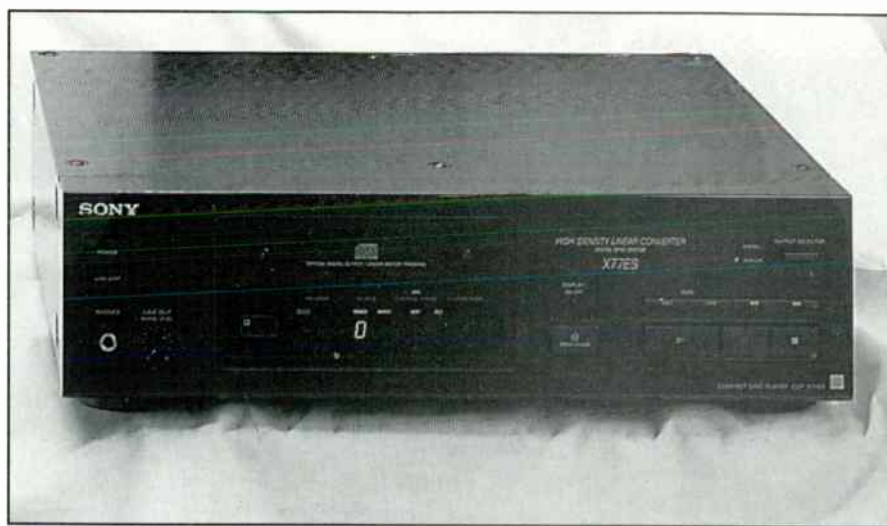
# SONY CDP-X77ES

## CD Player

£1000

This Sony player comes in a sizeable black casing, 430mm wide, 375mm deep and 125 mm high, sitting on four plastic drum feet. It was also the heaviest player in the group, at a weighty 16kg. The front panel is flat, relieved only by the round-edged inset for the loading drawer and display window below it (the display can be turned off). It is sparsely populated with controls. The power button is on the left, with a headphone socket and volume control - which operates both the headphone volume and the variable line-level output. Over to the right are four cassette-deck sized keys for Drawer Open/Close, Play, Pause and Stop, with narrower ones for Track Skip and Search above. Either analogue or digital output can be selected from the front panel and this is displayed by a small red indicator light.

This is all fairly straightforward, but the remote opens up a much more complex world. While all the standard functions, including opening the drawer and turning



the display off, can be controlled from the remote, there are extras. Programming is simple, using a numerical keypad, though programming requires pressing three keys in sequence, which is a bit clumsy. Apart from the usual "Shuffle Play" for those who don't agree with the sequence of tracks the record producer decided on, there is also a memory for what Sony call "Custom Files". This is their answer to Philips' and Marantz' Favourite Track Selection. One mode allows the player to memorize a particular playing order for any Compact Disc. The second assigns

index points, so the user can programme a disc to play at points within a track. A sampler's delight, in fact. The memory will retain Custom Files for up to 185 discs.

One of the most interesting aspects of the CDP-X77ES, which might mystify some purchasers, is that the normal phono sockets for analogue and digital output at the back are joined by two "Canon" or XLR sockets. These provide a balanced analogue output, preferred by professionals. Balanced connection has not made a great deal of headway in the domestic market, though a few amplifier manufacturers favour it.

### SMOOTH CUSTOMER

The Sony at first appeared to be an extremely smooth customer, something of a hallmark of low-bit devices. A short audition would have it classified as polite and civilised, even calm and considered. It would not be much of a step, therefore, to decide it might be rather too gentlemanly. This would be too much of a snap judgement, for the X77ES displayed a minute clarity of detail and see-through transparency. It opened a clear window on the studio's work, presenting recordings as the engineer intended.

Instrumental timbre and tone was clean and accurate, and extremely even over the frequency range. It was not lacking in the bass department either, with considerable "oomph", though without the thunderous weight of the Marantz - but only a tad less. This one-box unit presented a very spacious, wide soundstage, with very precise demarcation of instruments and vocals in a perfectly clear recorded ambience.

If there was any reservation, it was that the Sony was too smooth and thoroughbred. In the last analysis, some of the absolute subtleties of tonal colour escaped, the CDP-X77ES being less willing to be rough with violent music-making. This is an enlightening and informative machine, but not one overflowing with boundless enthusiasm. It keeps within strict, but extremely clear, boundaries.

### MEASURED PERFORMANCE

Although no mention is made of it on the front panel, the shape of the noise spectrum above 21kHz shows this is a low-bit machine. It probably uses Sony's own Pulse Length (width) Modulation (PLM) system which runs at the incredibly high clock frequency of 45MHz. The noise shaper of this system gives very low in-band noise and distortion is low too.

Measurement confirmed these characteristics of PLM. Noise was extremely low at -117dB, although the fact that it didn't change when de-emphasis was switched in makes me suspect that muting was operating at digital zero. Distortion levels were also extremely low, although they were not better than a good Philips DAC-7 based converter like Deltec's Bigger Bit. So fierce has competition become that even the biggest and most prestigious Japanese companies cannot now guarantee themselves a unique place in CD technology through weight of research and investment. It's an interesting twist in a hard fought industrial battle for a market.

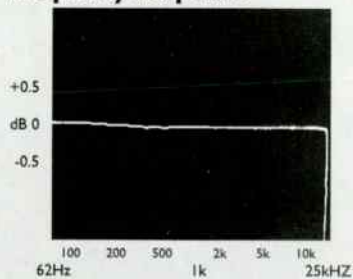
The X77ES does have an ultra-flat frequency response, the like of which is rarely seen in CD players. I would not expect this to be detectably better than 'very nearly' flat responses like that of the Marantz CD-94 II. Our analyses are of extremely high resolution, so they magnify differences. All the same, the X77ES is an impressive piece of engineering and it should possess an even tonal balance.

There was little spurious output above 21kHz, which was a good sign. Output was high at 2.6V - that's +2dB above normal (2V). It will give the Sony an advantage in any A-B shop demonstration. This player measured extremely well. **NK**

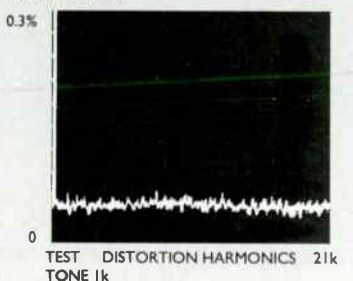
### TEST RESULTS

Frequency response	4Hz-21.3kHz	
Distortion		
-6dB	.005	.005
-30dB	.005	.005
-60dB	.34	.34
-90	28	29
-90dB dithered	1.5	1.5
Separation	left	right
1kHz	-120	-123
10kHz	-108	-105
Noise	-117dB	
with emphasis	-117dB	
Dynamic range	111dB	
Output	2.6V	

### Frequency Response



### Distortion



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## PIONEER PD-8700 CD Player £300 with the external convertors

As the third part of this review, we decided to see if adding either of the two cheaper DACs on the market to an existing one-box player would be a worthwhile and cost-effective upgrade.

A note of caution need be struck here. No DAC is a panacea. A startling improvement in sound quality cannot be guaranteed. It all amounts to "Garbage in, garbage out." If the basic transport is poor, no DAC, however good, can put back what never entered its own digital portals in the first place.

Auditioning is essential. In the course of an earlier review, a very good stand-alone player failed to benefit more than marginally from a £600 DAC, certainly not enough to justify the extra expenditure except purely temporarily. We picked on the Pioneer PD-8700, reviewed in the December issue.

The PD-8700 is Pioneer's £300 turntable-in-a-drawer machine, which in

December we received with more favour, and even a little more fervour, than its slightly cheaper sibling the PD-7700.

Overall a well-balanced low-bit performer, with energy and commendable detail for the price, it was lacking some depth and could turn a little coarse in the upper mid-range. There were reservations about an over-lean bass, which seemed to lack a true heavyweight's punch while not otherwise failing to deliver.

As before, the Deltec Little Bit was plugged in first. While the Pioneer still failed to deliver a deep soundstage like the transports, it was a marginal improvement on the machine as a stand-alone player. The identifiable coarseness became a spot of shouting or glare on some instruments, though the player developed more spring and pace. Centrally placed vocals, however, appeared rather too wide. Some detail tended to be overcome when the music turned busy, however. Brass was brasher, the soundstage wider, and orchestral colour was fuller all round. There was a just-discernible improvement in dynamism, though the bass, a little deeper, was still short in impact.

Wired up to the Audio Alchemy, the whole impression was of slightly less dynamism, but orchestral sections gained in clarity, violins being sweeter. Again, the Digital Decoding Engine failed to add power to the bass. There was good overall

tonality, with plenty of detail, spread along a wider soundstage than was evident using the PD-8700 as a player, if not up to the standard of the separates. While the Deltec could put performers well up front, if at the occasional cost of roughing up otherwise smooth edges, the Audio Alchemy/Pioneer combination exerted a more even control throughout the frequency range, if lacking some of the "body" of the Deltec.

Phase inversion proved something of a mixed bag, and emphasised the need for experimentation. There could be a general improvement in tonal colour, and a feeling of more air, though with a softer focus on some recordings. On others, the sharper focus of normal phase might be preferred.

This was a very revealing experiment, for neither the Deltec nor the Audio Alchemy gave the Pioneer the same full rein as Audiolab's more expensive DAC. In the end, this could well be down to the optical link, a connection which Deltec prefer. Nonetheless, for a smoother overall improvement, the Audio Alchemy probably wins out. The combination could not match the absolute fineness of detail of the other transports, or the sheer presence and depth of the Arcam particularly. It does make for enough of an improvement to be a successful half-way house, though not, in the last analysis, a final upgrade.

## CONCLUSION

Doubts did arise about the ultimate ability of the two DACs - the Audio Alchemy Digital Decoding Engine and the Deltec Little Bit. It was difficult to be convinced that either fully exploited the last ounce of potential of any of the transports. To put this feeling into perspective, it has to be said that some time had been spent with Deltec's Bigger Bit and Audiolab's 8000 DAC, both at nearly double the price, of course.

When it comes down to it, it really does look as though Rob Watts of Deltec has something when he says that he believes a DAC accounts for about eighty per cent of the total performance and the transport about twenty per cent. The two DACs had decided strengths and virtues, but also some limitations that colour the conclusion.

In summary, the Audio Alchemy possessed a sweet, smooth overall tonal balance which was extremely even, but a less welcome attribute is the somewhat shallower depth available. To some extent, the Deltec Little Bit combats this by a more forward presentation, but although the Audio Alchemy had a wider stage than the Deltec, the Little Bit was less keenly focussed at the outer edges than it was centrally, pretty well regardless of the transport used.

This is where a reservation comes in. The listening session concluded with a brief insertion of Deltec's new PDM I Series III (reviewed next month). This simply expands the music to fill all the available space: it searches out every nook and cranny, and presents a life-size performer in the room

with the listener. Conversely, the Audiolab 8000 DAC has that extra smoothness, additional width and depth that makes it stand out over the Audio Alchemy Digital Decoding Engine. So both our budget DACs were quite obviously limited in the abilities, weakening their claim to centre stage.

The two stand-alone players, the Marantz CD-94 and the Sony CDP-X77ES both managed to complicate matters by being quite different in themselves. All the same, they were serious contenders against the dual units, aided in this by the limitations of the latter. Two friends who dropped in offered up strongly polarised opinions about them. "More filtered, more like a recording," said the Lecturer about the Sony, comparing it with the Marantz. "Harder," said the Electronics Engineer about the Sony, "too clear and clean."

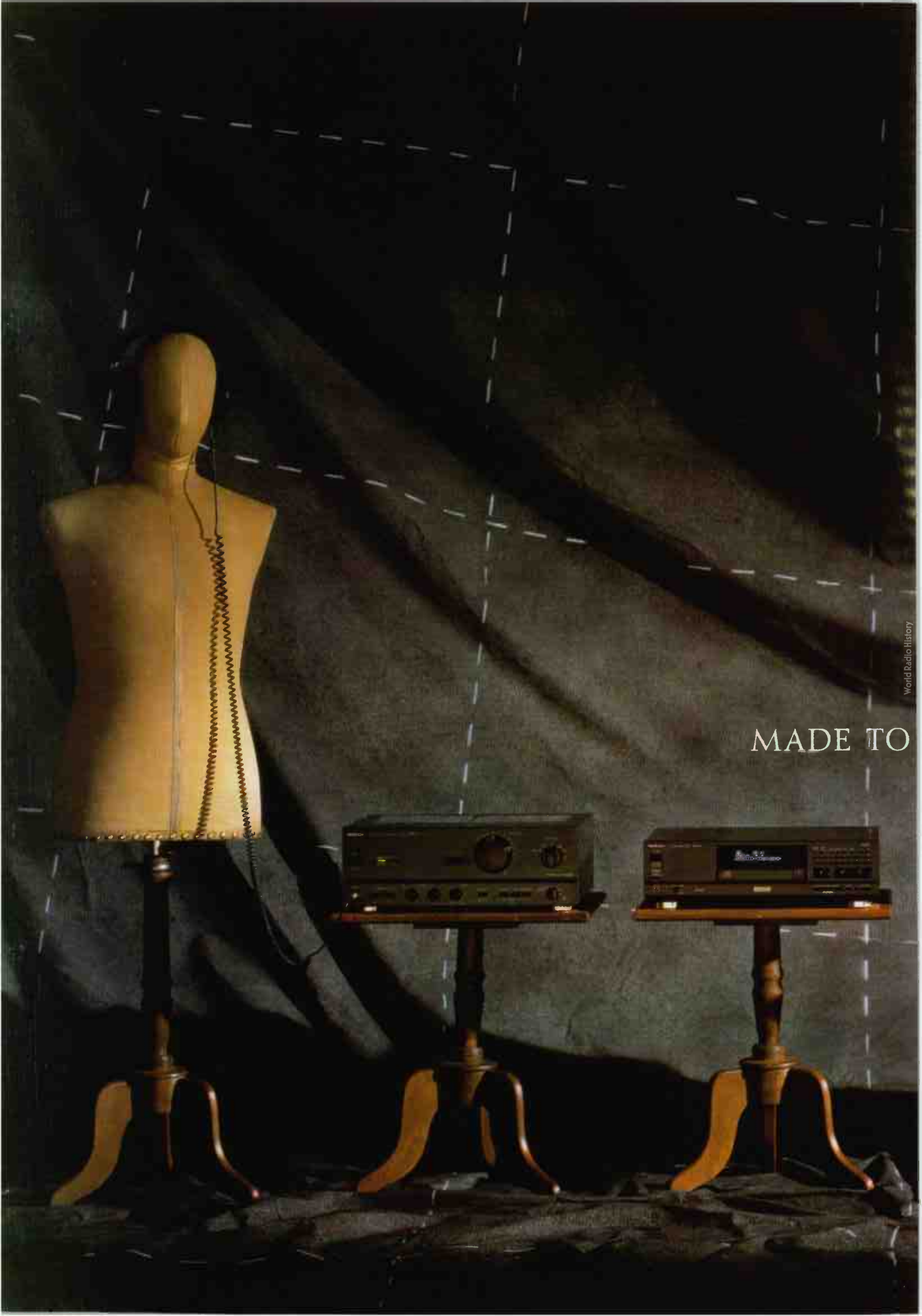
Turning to the Marantz, he felt that it was "fuller, rounder, more like being at a concert." It was "too lifelike, too big," countered the Lecturer, "I want to know I'm listening to a recording, not feel I'm forced into a live concert." If a horn-player cracked a note, listening to the Marantz would elicit much the same momentary feeling of sympathy that happens among an audience in a concert hall, then the performance sweeps on. Listening to the Sony, the response would be more likely to be "Why didn't the producer order a re-take, or the engineers edit it?" Both approaches have their virtues, both have their devotees.

The two players could hardly have put their different arguments more clearly in the context of the listening sessions. But the competence of their execution also made them valid alternatives to the DACs. It has to be said therefore that single box CD players

can and do effectively rival the sound quality offered by competitive DACs at this price level. They are eclipsed only by more sophisticated and expensive convertors, like the Deltec Bigger Bit or Audiolab, which cost £600, or the even more expensive Deltec PDMI Series III.

Usefully, the attributes of each individual transport came across quite clearly. For overall competence the Arcam Delta 170 came out at the top of the heap. It could be partnered successfully by either Deltec or Audio Alchemy, according to taste. The Teac P-500, while its soft-focus effect was altogether too softening, gained something from partnership with the Digital Decoding Engine. The latter's slightly less expressive, but more even tonal balance mitigated some of the Teac's blandness. Combining the Kenwood with either of the two DACs became rather trickier. For sheer speed, rhythm and pace, the Audio Alchemy scored; for a less harsh top end, the co-axial (but not the optical) input of the Deltec Little Bit worked well.

Whilst the two DACs surveyed were a worthwhile upgrade from lesser priced CD players, they did not possess clear advantages over the similarly priced single-box units we chose. This distinction only becomes clear with more expensive DACs, like those we have mentioned from Audiolab and Deltec. Vinyl lovers moving to CD for the first time might be best advised to temper their ambitions and consider a competent player, like an Arcam Alpha, or make the jump straight to a sophisticated DAC costing much more. Currently, the middle ground is in dispute between DACs and players, with plenty of available options for interested buyers, as our report shows ●



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**(Peter Watson, P.M. Components)**

properly. Most 300Bs don't have a low end; they don't sound good.

**You've heard many 300B amps?**

Yes, because in the Orient - Japan, Taiwan, Korea - they are more popular than in England.

I have a friend who exports 300Bs, when he can find them, to Japan and Taiwan, because of the demand there. Where do Taiwan enthusiasts get these amplifiers? Do they buy them? We never see such things in the UK.

No. Mostly they build them as a hobby. The circuits are standard push-pull configuration, often taken from Japanese constructor magazines. They invite me to listen to them, which is where I discovered the sound. It is much better than transistor sound.

**Did you start as an enthusiast or did you start by studying electronics?**

I started by building valve amplifiers when I was a student in junior high school; it was a



Hong Jen's stereo power amplifier, using modern Western Electric 300B valves takes shape at the premises of P.M. Components.

# the long journey of Tsai Hong Jen

## The story of a modern valve amplifier using an old, old valve - the Western Electric 300B.

What brought you from Taiwan to the other end of the world - some might say to the end of the world - Gravesend? Developing single-ended valve amplifiers for PM Components around pre-war triodes in this neck of the woods is - er - an unusual occupation isn't it?

I just called. I subscribe to hi-fi magazines from England and saw the advertisement for valves, so I phoned P.M. Components to enquire about the new Golden Dragon valves and discussed many aspects of valve design with him. We decided I should visit Gravesend which I did almost immediately and after two days the ESTI amplification project was under way. I have an audio shop in Taiwan run by my family. We all love music. This helped stimulate my interest in audio and I like the sound of valves.

**But why the 211 or 300B valves? They are veteran triodes that date back to the 1940s or earlier. Was it the well known Japanese Ongaku with its bright 211s and £30,000 price tag that aroused your interest?**

No. There are a lot of people in Taiwan who use the 211 or 300B. It is very popular amongst the high end people. I have been thinking of the technology to drive the 300B

hobby. I built small valve amplifiers - they were simple, single-ended circuits from magazines. But although I studied electronics I didn't touch it as a hobby for ten years. In the intervening period I got married.

After junior high school, when I was eighteen, I went to college to study mechanics and electronics. In Taiwan ten years ago post graduate study in electronics was not so good. After five years I went to Texas for further training. This was in 1978. I studied there for a further seven years, but with a break in 1982 for two years' teaching in Taiwan.

They provided assistance in Texas and the tuition fee was low. I eventually returned to Taiwan permanently during 1988.

**That's a lot of electronics! What did you specialise in?**

My speciality was servo systems and control systems.

**It seems a long way from audio and hi-fi.**

Yes. But you need all forms of knowledge for good audio design - and the final stages of design are art. I pick every component for individual ability. I pick the capacitors to sound good, because I design for the ear. I

even had to get special capacitors made in Taiwan. It helps if you know all electronics.

**Why did you return to Taiwan and start in audio? Surely the USA must have seemed attractive?**

Staying in America and getting an ordinary engineer's job was too easy. I would become a senior engineer somewhere, then - nothing!

I had studied servo-systems, so I returned to Taiwan in 1988 and started, with others, a company making computer systems for flight simulators. We do much work for the Taiwan Defence Department.

**What caused you to move into audio?**

Music and audio had always been my interest. We started the audio shop, but I couldn't find an amplifier I liked at a reasonable price from America or Japan. They were asking big money - as much as a car - but you opened it and found that there was little inside.

I decided that I should try and make a modern valve amplifier - one that sounds as good as those that the enthusiasts use, but better engineered and sensibly priced.

You need some newer concepts to make valves work best, because they are quite non-linear. We use solid state devices of all sorts to help provide bias, supply power, to make valves work well. I use a positive and negative supply to the valves, for example. Nobody does that. It gives you better headroom; we get more power.

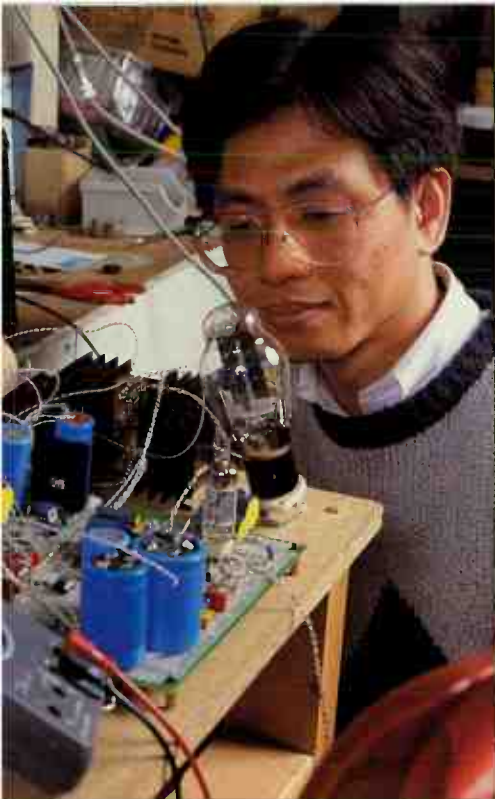
The way it started, in order to develop the tubes to their full ability, we had to develop everything else.

**(PM Components)** Hong Jen has had to produce special capacitors of polypropylene suitable for audio and capable of working at valve voltages of 400volts for these amplifiers.

Yes. It is a modern valve amplifier that uses the latest and best components we can find or make.

My first amplifier used EL34s. Then I went





**Why have you chosen single ended working, which normally gives limited power and efficiency?**

I don't think push-pull is easy to make work properly. You need perfect AC and DC balance, which is difficult under dynamic conditions. You need intelligent circuits to make this work and standard circuits are not good enough I believe. I want to do more work on this later, by applying more sophisticated servos and control circuits. Good sound at a low price comes from single-ended, not from push-pull.

**Your preamplifier has no disc (LP) stage; it possesses only line inputs.**

Yes. We will offer an external disc amplifier based on the EF86 RF pentode, which is very quiet.

**When will the products be launched?**

January 1992 we hope, in both the UK through PM Components and in Taiwan through my own company. There are five of us in Taiwan and we all have shares, so we all work very hard.

**It still isn't clear why you should be here designing the amplifiers, rather than in Taiwan.**

PM Components have developed all the valves I want to use. They have high quality

audio valves at a low price, because they make them. This is very unusual, so I come here to develop my amplifier.

Obsolete valves are rare and too expensive now. At £60-£100 each they are alright for enthusiasts who will spend the money, but for others they are too expensive. I prefer to work with new valves and new components

**You are as much a solid state engineer though.**

Yes. I studied solid state all through my training. The amplification in the preamplifier is purely through valves, but biasing is solid state. There are no volume controls; we use switched attenuators. The switches are the best we could find, for long life and reliability. The PC board is the thickest and gold plated through.

**What resistors do you use?**

We use all sorts of different types from Philips and Allen-Bradley, including modern carbon types. I like the sound of these; they are neutral. For precise value in biasing and servo use I use metal film types from Philips.

In some places I use 'bulk foil' resistors from IRC, which are ultra high quality types and very expensive. Many of the capacitors are my own design, as I explained. I use ECC88 double triode valves in the preamplifier.

to KT88s which are seen in my integrated amplifier. This is a single-ended amplifier.

My preamplifier has ECC88s as cathode follower line drivers. The power amplifier will have 300Bs connected to give cathode drive. It gives better bass than the 300Bs I have heard in Taiwan.

**Is this your idea? We investigated cathode drive amplifiers recently (September 1991 issue, p84), but found that very few had been made because they have particular difficulties. The Parry Cathamplifier was one. It ran at very high voltages though - around 700volts in fact. It was impractical.**

*"Like the electric car and the airship, the cathode follower power amplifier still awaits some technological breakthrough. Perhaps that will come one day" - Richard Brice, Hi-Fi World, September 1991.*

Yes. The power-amplifier is not like other valve amplifiers. I use the new Golden Dragon 300B power triode now that it has become available. It is connected in simple single-ended form.



The ESTI integrated stereo valve amplifier uses two valves per channel, a double triode and a Western Electric 300B triode.



**So when will your designs become available?**

We will release ESTI (Engineering Systems Technology International) products in the UK and Taiwan at the same time early in 1992. The R&D cost has not been put into the product. It's the same with the tubes. If we put all the development costs of the valves into the amps then the entry level cost would be too great.

We think these will be the best sounding valve amplifiers, because they do not use old circuits and ideas. Even the valves are new, upgraded versions of old designs. That's why I had to come to Gravesend ●





I can't imagine what new realisation has suddenly prompted all the major Japanese manufacturers to start producing highly specified cassette decks. Surely someone's told them cassette is due for the chop. Or were these new decks being dreamt up as DAT became moribund, but before DCC and MD were announced? Whatever, Sony's TC-K570 joins the rush of high performance, three-head decks, albeit in this instance fitted with a single capstan transport. It hits the market at just £199.99.

Sony aren't alone. Aiwa and Akai have also hit this 'price point', as marketing men call it, with similar budget dual-capstan machines. These days it seems Sony are prepared to join the commercial scrum that results when all the Japanese majors decide to stampede in the same direction at the same time - this time into high quality cassette decks.

In spite of its low price, the '570 is even fitted with a powered cassette door. I was surprised, but then perhaps I am not seeing it like Sony possibly see it. They have fought some bitter commercial battles with both Matsushita (Technics/Panasonic) and with JVC. It may be that this background colours their approach to quality cassette recorders; Technics' new RS-BX707 (£220) is also a single capstan, three-head deck with a powered cassette door.

Pop in a cassette, press the Play button and the door closes of its own accord, after which the machine commences playing. Once you get

used to them, decks with powered doors are very easy to use. Going back to manual-door models is a shock they seem archaic. Powered doors usefully eliminate a number of button pressing/door shutting actions. They are a convenience and Sony's worked well.

Cassette decks at this price level do not commonly have a back-light in the cassette compartment; the '570 does. Unlit cassette compartments help not one little bit toward tape visibility. The Sony's is dingy, but the green light behind the cassette window is a great aid to making quick visual checks of remaining playing time.

For tape tuning purposes, variable bias is fitted. Fine adjustment of bias allows flat frequency response to be obtained and results in even tonal balance with all tape brands and types. The usual limitation here appears in the users' handbook: "In the case of Type IV cassette tapes (metals), the frequency change for any given bias setting will be minimal." It was, but given a metal tape that matched in reasonably well in the first place, the amount of adjustment provided was still enough to be useful.

The deck also tunes in ferrics and chromes of course, but no calibration system has been fitted. With three heads, it isn't really needed. Recording quality can be compared with the original as a recording is being made, just by switching from Tape to Source. Bias is adjusted until Tape sounds like Source.

Sony fit a blue and red fluorescent display panel which shows recording level, the tape counter which reads in minutes and seconds, and various status legends, like tape type (selection of which is automatic). The illuminated numbers and legends were all a bit small; I found myself peering at this display quite closely to decipher its messages.

The TC-K570 looks and feels much like its competitors in terms of styling and build quality. However, it was quieter and smoother in operation than most of the decks around. There were no clanks as the head platform solenoid pulled in, just some muted clicks. It gives a good impression.

### Sound Quality

First, the disappointment: it hums. Even though the spectrum analyser had warned me of this, I'd forgotten by the time it came to listening tests. Yet it was the first thing that struck me; I was taken aback. The hum was only just audible in silences, like at the start of a tape, but I found it disconcerting all the same. And at the price it shouldn't be there of course.

Otherwise, the '570 proved quite a cracker. I was fascinated by the way it withstood gross over-recording on metal tape (TDK MA-XG). Even with record level turned up by a silly amount so the indicators stayed fully lit right up to maximum all the time, the recording only became blurred and a bit warm. For near perfect results, this same tape could be peaked at +8. The fact that gross



over-recording well above this level didn't produce sudden rasping distortion means that the recorder is very forgiving if pushed hard.

Worried about premature treble overload, I used torture tracks like "Someday" from Mariah Carey, with its hard hitting percussive intro. This usually blurs and softens out; the Sony retained its impact almost perfectly with TDK MA-XG. Much the same problem exists with the close miked guitar strings of Rory Block's "Big Road Blues", but here the recording has to maintain the focus that puts Rory Block singing clearly at centre stage simultaneously. The '570 again managed perfectly, albeit after fine bias trimming.

A lot of fine trimming and level setting was needed to get TDK AR-X ferric tape sounding near-perfect. Recording level had to be held down to +4dB and hiss was loud without Dolby B, but sound quality proved close to the original. It was a good performance.

At chrome position BASF Chrome Super II (tested in this issue) worked very well, showing itself to be very quiet. A recording of Perlemuter

playing Chopin Nocturnes confirmed the excellent speed stability of the transport. Sustained notes rang steady and pure; there was no sign of wavering or drunkenness. This deck should satisfy the most fastidious lovers of piano.

Prerecorded tapes were reproduced with clarity and insight - and with none of the muffling that is associated with this medium. I noticed a good sense of timing, plus fairly solid bass drive that gave the deck a dynamic air. It handled a wide variety of prerecorded tapes well, but on occasion that hum could just be heard at the start.

### Conclusion

Although slightly compromised by a small amount of hum, the TC-K570 offers superb recording quality on all tape types. It has been set up for premium grades though. Getting it perfectly in tune and set up proved fiddly, but the results were worth it. Prerecorded tapes were reproduced with clarity, excellent timing and a complete lack of muffling. This is a fine all-rounder, albeit with the slight reservations expressed above ●

# scrum- half sony

**With the market for high performance £200 cassette decks as crowded as a rugby scrum, Noel Keywood emerges with the Sony TC-K570**

### Measured Performance

The TC-K570 turned out to be another high bias recorder. This is the latest trend in cassette decks from Japan - and an overdue and intelligent one too. Deck manufacturers seem suddenly to have woken up to the fact that recently introduced super-metal tapes need very high bias to offer any benefit. We ran a feature explaining this in our March 1991 issue. Suddenly, there has been a rush of new cassette decks with such bias. Most offer significantly better results with tapes like That's Suono and MR-X PRO, Maxell Vertex and TDK MA-X and MA-XG.

The last in the list has the highest performance. On the '570 it accepted +8dB record levels in the mid-band before overload, which is very high. That's roughly +4dB higher than last year's models, which shows just what sort of a gain has been made. Good Nakamichis only manage +9dB, so the '570 puts up a pretty respectable performance. Unfortunately, treble overload has not gone up proportionately. At -0.5dB it is on the low side. With high recording levels, treble overload - heard as muddling - will occur first.

So how high can the TC-K570 record? I was fascinated to find that Sony have set 0VU (indicated peak record level) at a reference point known as IEC0dB. This is very high; normally 0VU is placed 3dB-5dB lower. It is also the same reference point I use for all my overload (MOL and SAT 10k) tests, so the overload figures we quote (MOLs and SATs) in this report should be transferable directly to the display, assuming perfect display accuracy.

It was accurate. The display showed +8 precisely as MA-XG went into overload. This was the highest sector. Music peaks can be taken right up to maximum on the record level display - at least when using the

best metal tape available. A small line of red warning dots usefully indicates this maximum.

So the TC-K570 can record to very high levels, albeit with expensive metal tapes. This renders hiss inaudible, even with Dolby B which has traditionally provided least noise reduction. Normal quality metals need about +5 maximum record level.

High bias has been applied to ferrics and chromes as well. This favours premium grade tapes like TDK AR-X over old favourites like TDK AR. At high bias it offers the same high mid-band overload as AR (+6dB), but higher treble overload (-4dB compared to -8dB). Premium ferrics like AR-X are expensive, but on this deck they give superb results.

So to summarise, the '570 has a fine head and high bias, allowing it to record up to very high levels with premium grade tapes, which it favours. This high bias swamps normal grade tapes though, unless bias is backed right off using the adjuster.

The single capstan transport gives a surprisingly good performance. It proved speed stable and flutter free with a good cassette. In every other area, but one, the TC-K570

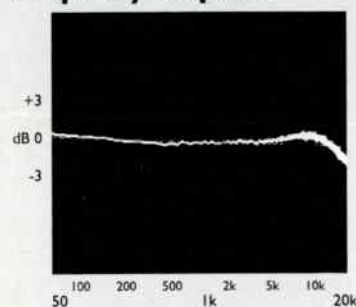
measured well. There is some hum in the replay amplifiers. Otherwise, this is an excellent machine, very well set up, but to a different standard from that experienced to date. With premium grade tapes, it really excels. **NK**

### Test Results

**REPLAY** (prerecorded tapes)  
Frequency response (-2dB) 30Hz-20kHz  
Speed accuracy +1%  
Hiss (70uS, Dolby out) -60dB

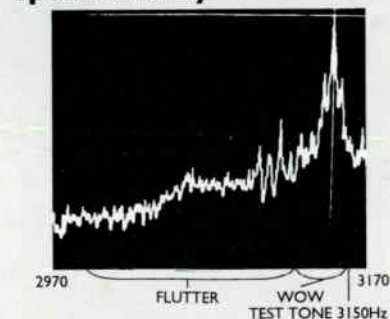
**RECORDING** (blank tapes)  
Frequency response (IEC Primary Refs.)  
ferric (IECI) 8Hz-19kHz  
chrome (IECII) 8Hz-17kHz  
metal (IECIV) 8Hz-20kHz  
Separation (1kHz) -70dB  
Distortion (315Hz) 0.7%  
Hiss (70uS, Dolby out) -56dB  
Speed variations (DIN total) 0.06%  
Flutter energy (3-3.13kHz) -27dB  
MOL/SAT (IEC Refs) 315/10k  
IEC I (ferric) +4dB/-7.5dB  
IECII (chrome) +3.2dB/-6dB  
IECIV (metal) +5dB/-2.5dB

### Frequency Response



Flat response with metal tape, shown here. Chromes and ferrics were flat too.

### Speed Stability



Very stable speed with quality cassettes

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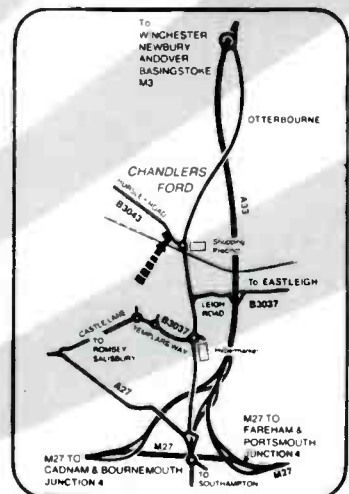
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**I**TD, the company behind the £450 Oberon, are not new to the hi-fi industry. In the 1980s, Inca Tech created a range of well-received amplifiers; ITD, which stands for Inca Tech Design, has risen, like a phoenix from the ashes of the previous company, to produce the Oberon tested here.

Externally, the amplifier is a simple design which looks slightly dated, against today's latest designs. The front panel, finished in black with gold relief, is slightly reminiscent of the earlier Claymore and similar designs. From left to right, the panel has an illuminated on/off rocker switch, headphone socket, mono button, channel selectors for listening and recording, mute button, CD direct, balance and volume control. The channels selectable are tape, tuner, video, auxiliary Compact Disc and Phono, with two sets of phono input sockets. A push button at the rear selects for moving coil or moving magnet cartridges. All of the rear sockets are nickel plated, with two sets of loudspeaker terminals, designed for 4mm banana plugs only. Finally, the Oberon sports a captive mains lead with a gold-plated ITD plug.

The CD direct button on the front panel couples the power amplifier to the Compact Disc player, routing the signal path past all the preamplifier gain stages, effectively turning the preamplifier section into a passive device. This means however that the signal is half that when conventionally amplified, so the volume level needs to be increased. This could cause problems when switching back to the Oberon's conventional mode of operation, but it does radically improve the quality of the CD signal. The mute button also acts on the power amplifier only; when mutes, the record function is still operative.

The Oberon is supplied with two sets of loudspeaker terminals, switched and direct. The switched circuit, while slightly degrading the overall sound

quality, allows loudspeakers to be muted when headphones are used. This can also be used to drive a second pair of loudspeakers, or to bi-wire a single pair. This option is discussed in the concise and informative accompanying manual. On two A4 sheets, it covers the general operation of the amplifier, including fuses and protection circuitry, but fails to describe the more mundane task of plugging the system together.

One feature of the Oberon that is rare is the N.U. socket at the rear of the amplifier. This allows it to be customised in several ways, depending on the owner's wishes. It can be set to act as a pre-amplifier output, record output for a second tape machine, an extra input selected via the mute button or a CD direct record out. This last is useful as many cassette decks today provide CD direct inputs.

I decided to compare the Oberon against a similarly priced successful integrated amplifier, the Linn Intek. From an ergonomic standpoint, there is little between the two devices, although I feel that aesthetically the Intek belongs rather more to the '90s. Unfortunately, this comparison did not work as well as planned. There was a noticeable hum on the Oberon's phono circuit; a hum that was more noticeable on the m-c than the m-m input no matter how much I tried to fix the problem. This was a shame, as the amplifier showed great potential. On the line stages, it is more delicate than the Intek, which has greater drive and force to the music, with a wider and deeper soundstage. I found the Oberon to lack weight, sounding almost too refined, when compared to the lively Linn. However, vocals and instruments are far more detailed and are easier to follow on the Oberon and the amplifier is very well behaved.

The soundstage the Oberon produces will not challenge a good pre/power combination, but it is still realistic, tangible and believable. The ITD, along with amplifiers like the Audiolab and Ion

# fairy-tale ending

**Named after Shakespeare's King of Fairies, the Oberon represents the metamorphosis of Inca Tech into ITD. Alan Sircom puts his ear to the wall.**

Systems at this price, offers some stage width and depth, instead of merely left and right channels.

Because of the hum problems, the phono section was almost impossible to assess accurately. It did, underneath, appear to have a similar, gentle, lightweight character to the line stage. It was appreciably poorer than the Linn Intek which by comparison had some much needed vibrancy. This was still at the expense of imagery and detailing, but the Oberon's general lack of weight and drive made it less 'live' than its contender. It has neither the outright boppiness of the Linn nor the sheer neutrality of the Audiolab.

The ITD Oberon will find favour from those who enjoy the refined, laid-back sound of amplification like Creek and Rega. However, I feel that these amplifiers are in the descendant, with clearer, brighter sounding amplifiers like the Arcam Alpha 3 finding more and more popularity with the public ear ●



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Mission have traditionally had great success with their low price box loudspeakers. Recently they have had a hit on their hands with the budget 760 model with its plastic baffle. Much of the experience learned there has been used to develop the new 761i loudspeaker, the replacement for the popular 761, at the still not unreasonable price of £169.

The two will stay in production side-by-side until the earlier model's eventual retirement to the Twilight Home for Aged Loudspeaker designs. They are very different. Externally, the most obvious change is the front baffle arrangement. Instead of the wooden baffle-board used in the 760, the 761i uses an injection moulded, mineral reinforced polypropylene baffle, said to significantly reduce cabinet coloration.

Behind the baffle, the 761i also uses new drivers, developed by, and unique to Mission. The tweeter is a 19mm ferrofluid-cooled fabric dome which is partnered with two 130mm plastiflexed paper drive units, built with what is said to be an extremely powerful motor circuit to give good control at low frequencies. Since these Missions are likely to attract buyers who will want to use them in a small room, the design utilises a semi line source arrangement. This minimises spurious floor/ceiling interaction, where the loudspeakers' dispersion characteristics set the room in motion.

The crossover network within each loudspeaker is kept down to a six element design, using quality components. The 761i is damped internally using a 20mm thick fire retardant polyurethane foam. At the rear is a single set of 4mm binding posts on a large black plastic panel. These posts, while no-one could accuse them of being fancy, are serviceable and sturdily fixed.

### Solid

The cabinet is made from 15mm thick high density fibreboard and stands 300mm high, 190mm wide and 240mm deep. The 761i is finished in a black ash vinyl extending to the rear, which is rare in designs in this price bracket. With an effective volume of 12.5 litres, the box is well put together, giving a solid feeling that belies its price.

Mission claim that the 761i has a 90dB/1W/1m sensitivity (we found otherwise - see Measured Performance) and this, together with their eight-ohm impedance, suggests they will partner low powered amplifiers with ease. Maximum sound pressure levels of a quoted 105dB means that the 761i will go loud, although it won't shake the rafters a la Cerwin Vega! An obvious partner would be the Mission Cyrus One amplifier, but most popular amplifiers at this level would perform successfully.

Mission recommend their own stands and cable, Mission stranded or Cyrus solid core, depending on taste. In practice, most good middle-ground

cables, such as Audioquest Type 4 or Linn K20 would work as well, although I would suggest staying with the Mission stands. Finally, the company suggests the loudspeakers should be used less than 30cm from the rear wall and without toe-in, preferably running them in for at least twelve hours.

Having dispensed with the formalities, we get to the fun part of the 761i: its sound. It's a little loudspeaker with a

‘It's a little loudspeaker with a big heart. For such a small loudspeaker, bass notes have an impressive sense of weight, making them easy to follow and boppy



# mission control

**Alan Sircom chooses to accept a Mission, their new well controlled budget loudspeaker.**

big heart. For such a small loudspeaker, bass notes have an impressive sense of weight, making them easy to follow and boppy. By monitor standards, the bass performance is actually a little ill-defined. It grumbles along indeterminately, but this is only in comparison to loudspeakers like the more-expensive Epos ES1 I or the Audio Note AN-K/SP. At its price, the 761i's pleasant bass is tuneful in comparison to its peers, being virtually unmatched at the price.

I normally find loudspeakers that underplay imagery to be rather flawed, as it is a vital area so often missed. Though the 761i has a rather poor soundstage presentation, I feel that it can be forgiven. Although there is some music going on outside of the boxes, together with some slight stage depth, imaging is not its forte. I let it off the hook, for it fills the room with sound: the listener is in there, mixing it with the band, rather than being a distanced observer.

This effect is particularly noticeable when sitting off the prime listening axis, when the Missions still play with almost all their air and charm. As befits a

powerful sounding loudspeaker, the 761i is highly dynamic. It does not start and stop with the speed of the Epos or even the Tannoys, but the 761i makes up for this by the dynamic range that follows leading edges.

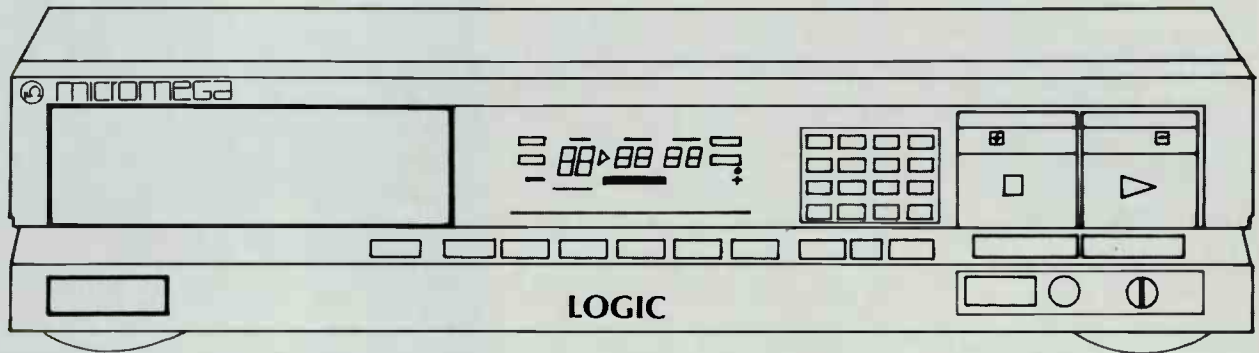
I do not feel that the 761i is especially detailed and is probably bettered by the Tannoy 605s in this area. Very fine levels of detail are lost in the melee, although it still portrays the performance well. Ambient information especially doesn't get past the grille. As the 761i will generally be partnered with mid-priced equipment, however, this information about the acoustic of the recording studio is likely to be lost somewhere in the chain, anyway.

The 761i's strongest trait is its coherence and enjoyable presentation. There are many things that the loudspeaker cannot do, but what it does do is so well executed that it makes the listening fun. There is a terrific feeling of a performance taking place; the subtleties may be lost at times, but the music shines through, nevertheless.

While Mission have done a fair job in removing the spit from a metal dome by



# MICROMEGA



## MICROMEGA AND MUSICALITY

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It's all very well us talking of power supplies and data integrity, but as a customer you want to know how these things affect what you hear.

CD has had specific musical failings. In general these can be summed up as a lack of the following: deep bass weight, upper range tonal accuracy, dynamic coherence and many aspects of stereo performance. It has also been accused of having an antiseptic or clinical sound. The upshot of all this is that many CD players sound gutless with screeching highs. The sound can sound harsh and 'glarey' when the music gets complex or loud, and the soundstage is wide yet mostly flat.

Many 'audiophile' players try to compensate for this by adding pleasant second order harmonic distortion to 'sweeten' the sound, and a midrange suckout to give an impression of depth. Thus they try to hide the problems rather than solve them.

Micromega players retrieve much more information than other CD machines. This is because of the way they are built. The result is a more complete sound. High frequencies and harmonics are sweet and airy, the music swells with a true sense of body, and it does not get hard as it gets loud. The soundstage is open, with width, depth and height, and properly proportioned images which do not wander. Even more importantly, music is preserved with a natural sense of ebb and flow, which allows you to hear how an instrument is being played, and gives melodic lines a clear and well defined shape. And that all adds up to increased musicality.

These effects benefit any type of music, yet they are more easily recognised on well recorded acoustic performances. In our experience, recordings on the Chesky, Reference Recordings and Harmonia Munddi labels are particularly revealing. Once you have heard the difference, you will hear it with every type of music.

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laminating it with plastic, there is still a slight tizziness to the treble. This is most noticeable when playing dynamic brass chops, that feature of jazz in the 1950's. The mid-band, residence of voices, guitars and 90% of popular music, is superb. Voices are clear and easy to understand, with other instruments further back in the mix well separated and melodic.

So often in this price range, a loudspeaker sounds as if it is designed for a particular genre of music. The 761i works well across the board, not displaying its vices on any programme material. It only begins to show flaws when compared to more expensive loudspeakers.

**Conclusion**

In many respects, this is a loudspeaker that I shouldn't enjoy. It doesn't image particularly well, its bass, though deep, is not well controlled and it is not especially detailed. Yet I had a great deal of pleasure from the Mission 761i, almost despite these failings. This is because, I feel, the baby Mission does not concern itself with side issues and just gets on with the music.

Mission, following in the footsteps of the 760 and 761, have done an excellent job with their new design. It is not a perfect device but its fun nature and deep bass will find favour among many looking for a good loudspeaker that doesn't cost the earth ●

**Measured Performance**

The measured frequency response of the 761i looks a bit ragged, but the expanded vertical scale of the analysis (5dB/division) highlights the sort of variations that are to be expected in budget loudspeakers.

The tweeter has a basically flat response trend, from 4kHz up to 20kHz. Peaks and dips that punctuate it suggest that it might sound a bit tizzy or display some particular character of its own, something Alan comments upon from his listening tests, even though he did not have the benefit of the measured results at the time. Mission run the tweeter at a level a few dB below the mid-range, probably to play safe in order to avoid any obvious brightness or sharpness.

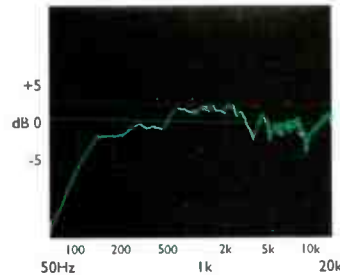
At 600Hz there is a sudden drop in output of a few dBs and, as frequency goes down, output slowly falls away. This is the normal response pattern adopted for a wall mounted loudspeaker, shelving bass being compensated for by wall reinforcement to give a subjectively balanced final result in real life listening conditions.

With a minimum impedance of eight ohms (meaning the speaker doesn't draw much power from an amplifier), the measured sensitivity value of 87dB volume at one metre for one (nominal) watt of input power is good. Mission's own value of 90dB is high, but I suspect they inject a proper watt, which I believe is a less meaningful technique. The system I use relates volume produced by a loudspeaker to volume control setting, its impedance as well as its conversion efficiency being taken into account. Mission's

system takes no account of high impedance, which rather obscures the issue for potential purchasers. In fact, the 761i has an overall impedance of ten ohms, making it easy to drive by budget amplifiers.

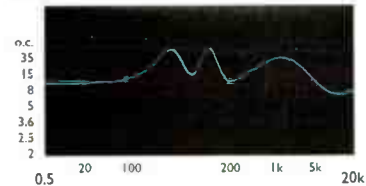
Overall, the 761i measures well enough. For a budget loudspeaker it has an acceptably flat overall response characteristic, accurately tailored for wall placement. It is normally sensitive and a light load for budget amplifiers. **NK**

**Frequency Response**



Shelved bass for wall mounting. Some raggedness in treble.

**Impedance**



High impedance right across the audio band limits sensitivity but makes the speaker an easy load.

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(Cont'd on P.94)

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Featured arms will include the awe-inspiring Wheaton Tri-Planar III and class acts from SME, Rega, Eminent Technology, Alphason and Zeta.

And to keep a close track on events, we'll be assisted by cartridges from Koetsu, Ortofon, Benz, Tubaphon, MAP Audio and Shure.

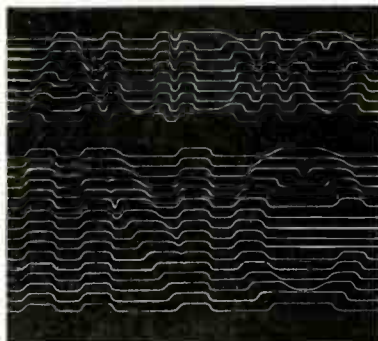
All these world-class components will be fed through equally prestigious equipment, including amplification from such notables as Conrad-Johnson, Motif and Sonographe with loudspeakers by Sound Lab, Hales and Nestorovic.

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A tradition of cassette deck manufacture makes Aiwa a company worth watching in this field. For me, the watching is now as much a game of waiting, for recent new models have been variable in the value they offer; I wait for the good to appear from amongst the ordinary. The AD-F810 I tested in the December issue fell easily into the category of 'good'; it is excellent value. The AD-F910 reviewed here is the next model up, so understandably I was interested to see whether it had enough valuable extra attractions to justify a price of £249.99.

The '810 offered every feature of genuine value on a cassette deck. This makes positioning of the '910 a little difficult. It has to justify its extra cost - and be seen to do so. Its most obvious attractions are a powered cassette door, a gold badge on the door making the same proclamation as a black one on the cheaper machine, a calibration system to aid tape tuning, and remote control. Lumped together in a list like this, the extras are obviously both real and comprehensive. But side by side, both decks look very similar, since they share the basic case and mechanical parts.

Beneath the skin, the AD-F910 possesses the same dual capstan transport and siamesed record/playback head of the '810, both expensive items as cassette decks go. They should ensure a very high level of performance is attained. As always, this depends upon the quality of engineering involved and, with

cassette decks in particular, the knowledge and diligence with which the factory adjusts the recorder. A dual capstan transport has the benefit of excellent speed stability. All the best cassette decks use them to improve clarity, rid cassette of its peculiar colourations and ensure that wow never intrudes, that sudden and random slurring of a note that we all know about in cheap recorders.

Separate record and playback heads improve sound quality too, these days mainly by offering a flatter frequency response, which results in a subjectively more even tonal balance. A three-head deck like the AD-F910 (the third head is the erase head) also has the great advantage of allowing sound quality to be checked whilst recording. The tape passes the record head first, then the playback head which sits next to it. By listening to the sound from the playback head, recording quality can be assessed whilst a recording is being made.

This has great advantages. It allows

record level to be set accurately to account for the differing characteristics of tapes and it also makes the effect of bias adjustment easy to assess. Switching from the incoming signal to the recording, using the monitor button, allows the latter to be checked by simple A-B comparison.

#### Tape Calibration

Although Aiwa fit the AD-F910 with a tape calibration system that should make bias adjustment listening tests unnecessary, I found them useful all the same. The provision of a low frequency reference tone and a high frequency adjustment tone (10kHz) on the '910, together with high resolution metering, is valuable. However, with some tapes - notably chromes - tests showed that the system didn't give perfect results; a slightly bright sound was the outcome. Final trimming was best done by ear I found, using the tape monitor button. ▶

# headlines

**Aiwa's latest three-head AD-F910 cassette deck follows their cheaper '810 player.**

**Noel Keywood reports.**

# finesse

**The transparent - in both senses - Finestra pre-amplifier is partnered by the new Lectern power amplifier. Alan Sircom looks into the matter.**

Partnering the Finestra preamplifier with a conventional power amplifier has been a slightly hit and miss affair in the past. Tom Evans created this preamplifier, as well as the Iso head amplifier, without producing a matching power amplifier. The gap has been filled by EC Audio, the manufacturers of the Finestra, who have brought out a matching power amplifier known as the Lectern. The Finestra costs £1250 without a phono input and £1399 with a moving coil input; there is no moving magnet option. The Lectern is priced at £699.

If there is a distinguishing feature of these products, it is that they are incredibly well made and finished. The Finestra has the added advantage of an attractive acrylic case displaying the circuitry within. This makes both the six-layer plated-through PCB and single wire (which leads to the earth post) visible, and it puts the quality Alps potentiometer used for volume on display.

The front panel is made from aluminium with three milled PVC dowel knobs standing proud. These control volume, tape monitoring and selection between phono, CD, tuner and auxiliary line input. Behind these chunky knobs lie the high-quality Alps

potentiometers, which have a solid feel to them. They were chosen over more expensive models for their open sound.

There is no on/off switch on the preamplifier itself; it is on the out-board power supply. This is connected to the rear of the Finestra via a XLR socket, but it should be switched off only during holidays and thunderstorms - for me, two events which last happened simultaneously.

Finally, both the Finestra and the Lectern are star-earthed; the preamplifier is DC coupled throughout, since it uses operational amplifiers.

The same attention to detail is evident in the Lectern. On removing the top plate, one notices a distinct absence of spaghetti; there is no visible wiring. This is because the internal wiring has been buried to improve Radio Frequency rejection. The amplifier uses bi-polar devices, instead of the Field Effect Transistors that one might expect. EC Audio insisted that this was because the bi-polars at the cheaper end of the spectrum sound better than cheap FETs. If the amplifier were to use FETs, they said, improving the performance would increase the cost dramatically.

The inside of the Lectern is dominated by a 500VA toroidal, built to EC Audio's own specifications, which gives the amplifier a specified fifty watt, twenty ampere output.

Visually, the two devices match well. The Lectern is slightly deeper than the Finestra, but they have identically sized front plates. Again, the Lectern is stable enough to benefit from being powered constantly. The on/off switch is at the rear, as are the input sockets and two sets of loudspeaker terminals per channel, for easy biwiring. It is best to separate the preamplifier from both its power supply and the Lectern, as it does pick up hum with great ease I found.

The Finestra/Lectern combination takes an exorbitantly long time to reach its optimal working capacity. Four days to a week helps before it starts to sound as it should.

## Open Window

Once run in, the Finestra lives up to its name - supposedly an obscure Italian musical term, meaning "an open window on sound." It is delicately transparent, often sounding as if the source has been directly coupled to the loudspeakers. It demands the finest of sources, ripping cheaper moving coil cartridges and Compact Disc players apart, though gently. Low output moving coils can be used, though these need to be specified for internal adjustment by the factory.

The absolute phase integrity of the

combination affects the imaging quite strongly, producing a soundstage which was only limited by the performance of the source or the loudspeakers. Even sources which fail to image as well as possible, such as the Arcam Delta 70.3, did a better job through the Finestra and Lectern than expected. With a good source and a pair of speakers which image well - KEF Q90s - the soundstage had a palpable depth, width and height that matched the very best.

Instruments had a tangible, real quality, with a reach-out-and-touch presentation. Guitars, voices and stringed instruments had accurate weight and body, though I detected a lack in deep bass. Since this only comes with bigger power amplifiers, it is hardly fair to criticise the 50watt Lectern for not supplying 200watts.

The Finestra and Lectern together excel, presenting a musical performance without false layers or shrouds covering the finest detail. Even the complicated vocal assault of Velvet Underground's 'Murder Mystery' with Lou Reed on one channel and John Cale on the other reciting a monologue at break-neck speed was unravelled; on most equipment it has remained a mystery to me too!

## Informative

Where the pre and power amplifiers were only "very good", instead of excellent, was in timing. Insight into melodic content made the Finestra pleasantly tuneful, but not a leader. A slightly bright, clinical sound tended to detract from the rhythm. A listener would concentrate on the sheer information available instead.

At times, it was difficult to discover if the amplifier imposed any signature on the musical programme it was playing. It left no stain on the tonal colours of different instruments, leaving the listener with tonally very similar noises perfectly defined and distinct from one another. Only when the amplifier was hard pressed did it begin to blur the most difficult of tonal assault courses, sounding steely and hard, with instruments sounding similar. At normal listening levels, the Finestra/Lectern just disappeared.

While the two can sound cold, they resolve detail with uncanny accuracy. Find me one more detailed at the price! An area that is truly outstanding is the speed of leading edges on drum beats and the like. This, combined with the extremely focussed stereo imaging and a phono stage quieter than any other I have heard, apart from the Iso, can be disturbing at times. The notepad was often laid aside and with a "what-the-hell-was-that", a passage ended being replayed time and time again.

For a solid state device, the Finestra/Lectern combination played





music with a very natural sense of dynamic range, changing from loud to quiet as fast as I have heard from non-valve products. Combining this with the speed of attack from the amplifier, it created a dynamic picture of the music played, up with any of the other products at its price.

Only occasionally did the Finestra/Lectern fail to operate with grace. When 'cranked up', the amplifier began to sound harsh and brittle, which I attribute to the power amplifier alone.

### Fine Phono

The Finestra has one of the finest phono stages built into an amplifier; I can only think of a handful better: DNM, Pink Triangle's PIP II, Gryphon and Mark Levinson - all of which occupy a higher price bracket.

The Finestra has a loyal following, and after spending some time with it I can see why. The Lectern is a natural choice as power amplifier as its phase coherence takes the already superb imagery of the Finestra one step forward. For those looking to purchase a high end system, without spending £5000 for each item, the Finestra/Lectern has to be taken very seriously ●

### Measured Performance

Some unusual features characterised the Finestra/Lectern combination. Most surprising was the use of a buffered input for tuner and CD. This does offer a fixed input impedance, which is notionally ideal if not practically essential, but there are potential problems and the Finestra gets perilously close.

Input overload is one, the CD input accepting no more than 2.3V. The standard output of CD is 2V, but many players deliver more than this - up to 2.6V in act. There is precious little leeway here.

The usual method of hiss measurement isn't ideal for a buffered input. It gave a dismal result of -65dB, which would be more meaningful were the input to possibly receive weak signals. However, again because of the fixed output from CD, it won't. A concept known as 'equivalent input noise' has to be used; it worked out at 0.12mV. This is -84dB below full output from CD, which is good. In practice, hiss did prove to be below audibility even at high volumes.

The moving coil input proved very quiet and offered superb sound quality, having the light but lucid touch of the Michel Iso. However, the input overload threshold was low (1.1mV) and gain high (0.1mV), meaning it has been designed for high quality, low output MCs only.

The power amplifier produced negligible distortion, even at high frequencies, as the spectrum analysis shows. Power output was 50 watts into a normal eight ohm load, but this nearly doubled into a four ohm load, reaching 90 watts. The Lectern has a very sturdy power supply, built around a massive toroidal transformer.

Although I would like to see greater safety margins in the overload figures, in use the Finestra worked satisfactorily. I liked the sound quality of its MC stage, but I felt that the CD input sounded dimensionally flat and lacked low frequency content. Both the Finestra and the Lectern are unusually well made. They are worth auditioning.

### Test Results

<b>Power</b>	50watts
<b>CD/tuner/aux.</b>	
Frequency response	4Hz-165kHz
Separation	-66dB
Noise	-65dB
Distortion	0.003%
Sensitivity	200mV
dc offset	0.2/-4mV
<b>Disc (moving coil)</b>	
Frequency response	10Hz-85kHz
Separation	-53dB
Noise	-63dB
Distortion	0.004%
Sensitivity	0.1mV
Overload	1.1mV

### Distortion



Negligible distortion was produced at all frequencies.

# READING WHAT THE CRITICS SAY, YOU'D THINK THAT REVIEWING MUSICAL FIDELITY IS A LABOUR OF LOVE.

Our hi-fi is well known for its ability to arouse passionate emotions.

"By the time the cadenza had been reached, I was a mass of goose bumps," sighed one reviewer, describing how hearing Mozart's Sinfonia Concertante on the new A120 from Musical Fidelity Integrated amplifier enhanced his perception of this favourite work.

His emotional experience took place during the Andante movement, which is the spiritual core of the music.

"It's a 27 year old recording and whilst it makes no great sonic demands on the system, it's easily destroyed by ham-fisted processing. In the case of the A120, the concentration and the magic were all there..." he reports with pleasure in High Fidelity magazine.

He's not the only one who finds Musical Fidelity highly involving.

"Personally, I've always been a fan of the A1", confesses another critic in High Fidelity. "Now Musical Fidelity has seen fit to introduce a MkII version... First impressions were of a slightly leaner, tidier bass, no loss of midrange warmth or clarity and that distinctively crisp yet slightly understated top."

Getting to know the new A200 Integrated amp, High Fidelity's reviewer was delighted to find that "it allows intimate

contact with all the emotional power of the music... Its overall control, fine pitch definition, dynamics, delicate handling of other low level information all placed it highly in my estimation."

And there is a writer for Hi-Fi News & Record Review who waxes positively lyrical about the new B1 Integrated amp, saying "The comparison between the old and the new B1 is easily told by reference to the chalk and cheese simile, with the old B1 taking on the role of chalk..."

In his view, however, "The more important comparison is to the Pioneer A-400, an amplifier which in the last year or so has helped in a thirty-somethingish reevaluation of what it is to be a budget amplifier in the early '90s... Now the list includes the Musical Fidelity B1.

"Right from the beginning I felt that the new whiter-washing B1 was doing things that the Pioneer was only hinting at... It was the B1 that at certain moments... Induced an effect akin to drawing a finger slowly down the spine", he concludes with unblushing frankness.

In the same issue he was moved to describe the character of our new compact disc player thusly: "I found the CD1 silver-tongued and expressive: It offered good treble resolution and was fundamentally musical and involving."

While in CD Review, another critic was smitten by the charms of our P180 power amplifier, confiding "My impressions are of an amp that definitely has personality... a sort of transparent musical signature: namely a combination of strength, control and easy flowing momentum. The P180 has power and current aplenty and will capably handle any speakers thought 'difficult.'"

Then there is the writer for Hi-Fi World who had a brief encounter with the P180 married to its outboard Choke Regulated Power Supply (CRPS) and was excited to discover that the upgrade makes the amp "sound more controlled and refined... Improved the imagery and added a spaciousness to the sound, while improving upon the sense of tightness in performance."

He was frankly poetic about the remarkable sound quality of the P180 with CRPS, going into rhapsodies over its "Passion, Grace and Fire."

Perhaps reading these comments has aroused within you a strong desire to experience these pleasures for yourself.

Don't let unsatisfied longing torment you, instead pay a visit to your hi-fi dealer and listen to the latest products from Musical Fidelity. You'll soon begin to understand why hearing is believing.

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MUSICAL FIDELITY

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**D**a Capo: a musical term meaning, more or less literally, "from the head." Since the blue-bodied £500 Morch cartridge is a moving-coil, and either a head-amp or M-C board in the pre-amplifier is required for it to perform, the name is appropriate. The "Morch" part of the title, by the way, is the Danish designer of those fabulously engineered gold-plated Morch tonearms.

In a way very reminiscent of many U.K. designers, Mr H. H. Morch, dissatisfied with tone-arms that were then available, sat in his garden and dreamed up, some fifteen years ago, quite a radical tone-arm design. The gold plate - to reduce electro-magnetic transmissions down the arm tube - was not the least of it. The arm-tubes are removeable, to suit a variety of cartridges within very close tolerances, and the centre of gravity of the counterweight is lowered - a notion taken up by Roksan, among others, though Audio-Technica once did something similar.

All this was so Mr Morch could play more music, more happily, he told me, for himself. It is not surprising, therefore, that the Da Capo cartridge's *raison d'être* is, in his words, "to reproduce music naturally with resolution of all the detail and the clarity and spatial body that any music-lover might wish." Having had the Da Capo installed for a while now, I wouldn't argue.

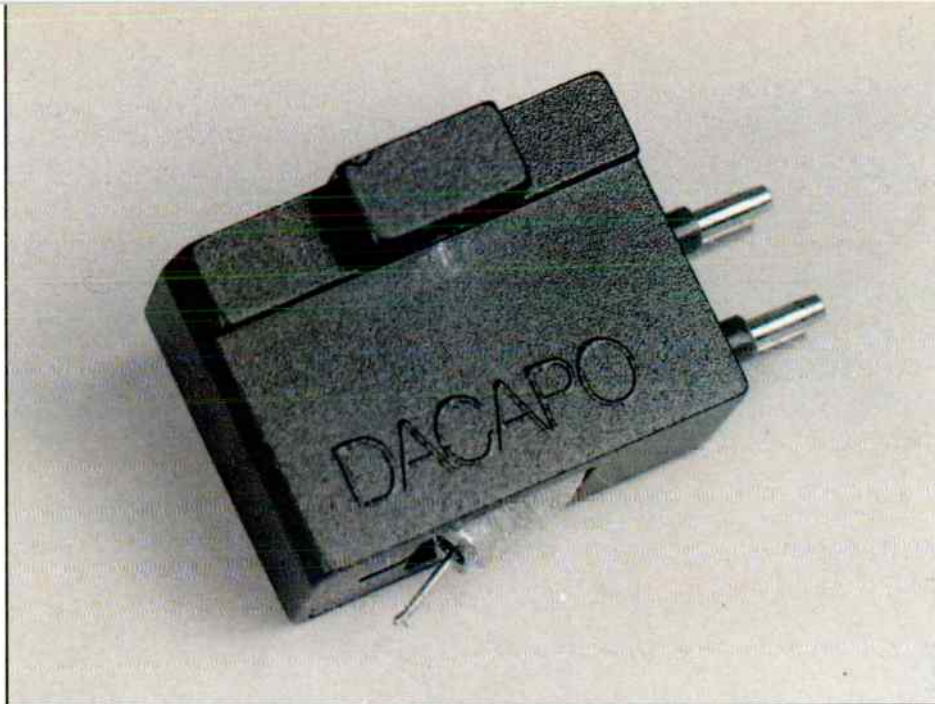
### True Blue

The cartridge itself is fairly unassuming. A dull blue machined aluminium alloy body hides a generator sourced from Scan-Tech with a slightly longer aluminium pipe cantilever than usual. At the sharp end sits an Ogura PH line-contact stylus. Recommended tracking force is 1.8 - 2.0g; I found 1.9 worked extremely well. The distributors, Electroactivity, recommend a slightly higher bias force if possible. Mounting is standard 1/2 in spacing.

Now I have to make a proviso, here, because I use an arm that is hardly commonplace. It's a Koetsu - yes, Mr Sugano doesn't just make cartridges - mounted on a Michell Gyrodec, and I use it because the two together are astonishingly transparent. While most of my listening was done with the Koetsu in place, other arms were used too for confirmation.

Even before the cartridge was fully run-in, it was clear the Morch was a vibrant, vivacious performer. At first, while supremely well balanced, perhaps it was a little too lively and forthright. Lloyd Cole's "rockier" tracks from Side Two of *Don't Get Weird On Me Babe* were vigorous and strong enough to hit right between the eyeballs. Well projected both in a plane before my ESLs and behind them, every item in the mix was firmly glued down without a second's suspicion that it had been taken apart and re-constituted. The performance stayed tightly together bonded by musical nervous energy.

Staying with rock and pop music, I began to feel convinced I was listening



with the engineers' ears. More than enough detail without it becoming distracting. Van Morrison, on *Moon-dance*, was holographically standing in the room instead of being a disembodied recording. While his voice had a clearer, cleaner edge to it than with my normal Koetsu Black, the Da Capo was not quite as cruel to the miking of his voice, which edges near to overload at times. This Morch moving-coil had excellent control. It went cleanly all the way up - and all the way down again. There's some bass in this cartridge.

They say you can't hear bass from ESLs: some care with room positioning, and a fairly dead acoustic, and U2's *Joshua Tree* was shatteringly powerful. The beat was fast and light on its feet. The Morch and the Koetsu (at least a Koetsu in its related arm) are subtly different. While it was inevitable I came to glory in the Da Capo's closely observed bass and clear treble, I did miss some of the subtler shadings of the K. Particularly, it has a way of insinuating itself further back into the mix, while the Morch starts from a more forward position. The Danish cartridge, though, is in some ways more relaxing. All the detail is there if you want it, but not as taxingly, not demanding inspection in the Koetsu's way. Yet there is much of the same intricacy of detail - but with the Morch you have to consciously stop listening to the music to search for it. With the da Capo, performance comes first, and foremost, on the scale of priorities.

### No Restriction

It is a homogenous performance, too. Mozart's *Bassoon Concerto* had much of the air and clarity, though not all the space around the instrumental sections, of Michell's *Iso*. The whole orchestra was clearly focussed, if not with quite as wide a stage as the K can offer at its best, but without any feeling of restriction. If I have said nothing so far about the qualities of tonal representation it is simply because there is nothing to say. No inaccuracies obtruded. On orches-

# Capo di tutti capi

**The Morch Da Capo cartridge is easily at the head of its class, finds Eric Braithwaite.**

tral vinyl, there was a momentary suspicion that there was a trace of thinness, a little less body, in the mid-range which seemed to lighten the tone of second violins. On reflection, however, I would be hard pressed to say if it might not be the Koetsu's emphasis rather than the Da Capo's omission. Full scale grandiose piano swelled undiminished.

To constantly be able to close one's eyes and believe the performers are in the same room - be it a String Quartet, a Jazz Trio, a rock band or a single guitarist - is a delight. It is a pleasure the Morch Da Capo never failed to deliver, and always with precision and clarity. Not only that, but it tracked like a train, without even a microsecond of hesitation at the notorious place of indecision approaching the run-out groove. I won't say it opened new doors on my record collection, but it will for many. It did revive my enthusiasm even for my standard collection of equipment-checking discs. Since I installed it, I have grudged my moments away from it while I listened to CD transports and DACs, turning back, far too often, to my vinyl, and the Da Capo, for musical pleasure. Just as Mr Morch promised I would. At its price, it is a decided bargain ●

# Wacky, controversial, radical valve amps. Just what you'd expect from Michaelson Audio.

We've been called a lot of things but boring is not one of them.

One critic says in *Audiophile* that our four-box 112 Watts per channel Chronos pre- and power valve amps look like Battersea Power Station.

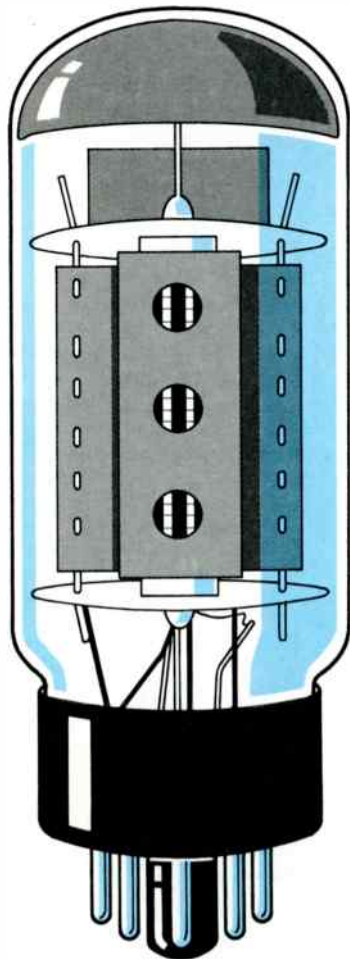
But after listening to them (perhaps with eyes closed), he called them awesome and says he was gobsmacked. "I had little idea quite how much sheer gut-thumping power such a beast can deliver. Believe me, it's frightening..."

Another reviewer bravely says Chronos are "quite gorgeous" adding that they look "a damn sight better than your standard parallel sided breadbox."

To judge from his review in *Hi-Fi News & Record Review*, he likes the sound, too. "Across the bandwidth it sounded forceful and in control..."

"But it's the mid-band (isn't it always?) that makes tubes the choice of the connoisseur, and here the Chronos positively sings."

Then critics from *Hi-Fi Choice* had their say. "From the opening bars of the music you can hear that Chronos is in the top league. There's that sense of ease and spaciousness which is so characteristic of high quality valve amplifiers... Chronos power amps can swing dynamics which will take your breath away."



MICHAELSON AUDIO

In their view, the Chronos soundstage is "as close to 'being there' as the limitations of the listening room and the recordings are ever likely to allow."

At Michaelson Audio we recognise that not everyone has room for our massive monuments to valve supremacy.

So we also make *Odysseus*, an integrated valve amp. It looks "slightly less outrageous but the aesthetics are still a matter of taste", according to *Hi-Fi News & Record Review*. It's "a high-end monster in (almost) budget clothing..."

"But the real reason for buying an amp like *Odysseus* (unless you're merely wild about the styling) is its midband. Choose whatever tubey adjectives you like – clarity, authority, detail, warmth – the Michaelson has 'em in spades, with an added plus . . . the *Odysseus* offers wall-to-wall coverage, exploiting the precision focusing of small speakers... it performs like a true champion."

Perhaps by now you are asking yourself, just how weird do Chronos and *Odysseus* look? And why is there no picture of them in this advert?

The reason is this: we want you to visit your hi-fi dealer to hear and see them in person.

Call them stunning or bizarre, they'll probably leave you speechless.

MICHAELSON AUDIO IS DISTRIBUTED BY MUSICAL FIDELITY, 15/16 OLYMPIC TRADING ESTATE, FULTON ROAD, WEMBLEY, MIDDLESEX HA9 0TF OR TELEPHONE (081) 900 2866.



One of the smaller members of the TGI (Tannoy Goodmans International) group, Mordaunt-Short are fortunate in being a big player in the little league. With their latest £149.95 Model 5.20 they have been able to use the group's financial clout to spend time and money on developing both a new range of speakers and a new technology for making drive units.

The main driver is a one-piece injection moulded polypropylene 165mm bass unit. This is a novel method, with advantages from the designer's point of view. Robin Marshall, Technical Director, explains: "The usual vacuum-formed technology allows the manufacturer little chance to vary the thickness of a cone, so it is generally too thin where strength is required and too thick where lightness is preferred." The injection moulding process allows the designer more freedom not only to choose the thickness of the cone but its shape. Because both cone and surround are formed in the same tool, there is a perfect join without having to rely on sometimes uncertain adhesives. The tweeter is a 19mm Ferrofluid-cooled alloy dome, the other half of this two-way, rear-ported bi-wirable design.

Both units have other features of interest to the budget loudspeaker purchaser. As with the Epos ES11, the Series 5-designed metal dome is damped to maintain the breed's characteristic speed and clarity, while minimising its inherent spittiness. The bass driver, on the other hand, has a shielded magnet, so the 5.20 can be used close to a television set without throwing the colour out of true. With the advent of Nicam Stereo, this is obviously becoming a major selling-point.

### Budget Fare

Otherwise, the 5.20 is standard budget fare. The styling is uniquely Mordaunt-Short - the front baffle is rounded at the sides like earlier models. Behind this lies the vinyl-covered MDF cabinet with steel rods running through it, similar in this respect to the Epos ES11. This is more than just coincidence, as Mordaunt-Short and Epos now share the same designer. The 5.20's are slightly smaller than the ES11's however, at 365mm high, 215mm wide and 212mm deep.

Instead of using a grille or a stocking that covers the entire front baffle, the 5.20 uses smaller, flush mounted grilles that cover the individual drive units. They are non-removeable, although I persuaded one of the bass grilles to leave its natural habitat to look behind it. Behind the rubber trimming ring lives a small wooden former on which the grille is fitted - I would have preferred to see a stocking-like arrangement here.

At the rear, which is black-painted MDF without a vinyl woodgrain

covering, there lies a port, an instruction label and a set of recessed gold plated bi-wire terminals, capable of taking most variants and thicknesses of loudspeaker cable termination. The rear label is a wonderful idea, with information on connection, positioning and protection circuitry: over the years manuals disappear, but this will stay around. The Positec protection circuitry protects the speaker if an amplifier overloads the 5.20s or is driven into clipping; the Positec system will reset itself, bowing out from the audio chain, to lie in wait for another stressful situation.

### Protection

This protection circuit allows the 5.20 to be connected to amplifiers up to 100w without fear, although Mordaunt-Short recommend a minimum of 15w. The 5.20 is moderately sensitive, at a claimed 86dB 1w/1m. It will never shake the rafters being a budget speaker but it can be driven by inexpensive amplifiers.

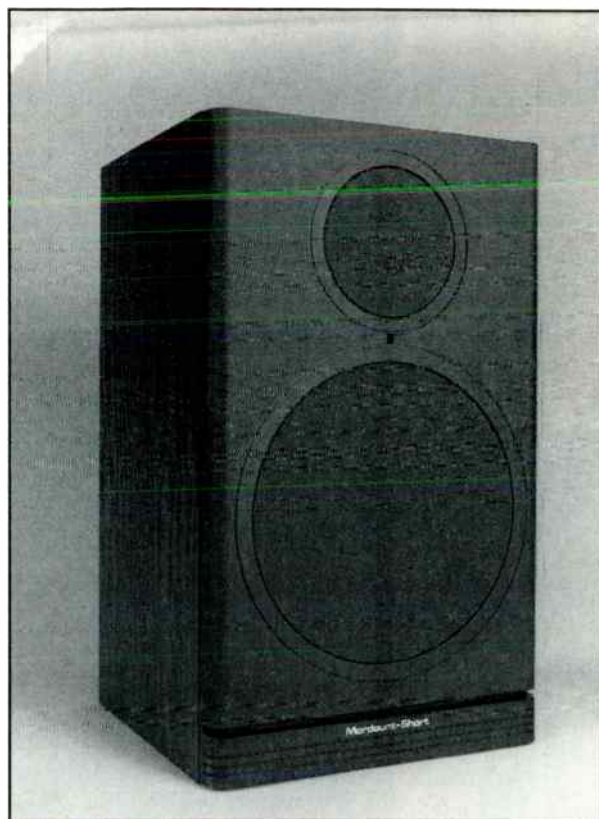
Once they were run in, on good stonky music for about twenty four hours, I set about positioning them according to the instructions. I found that they worked best at about 200mm from the rear wall, about 1.5m apart and well over 0.5m from the side walls. The optional and adjustable £65 MS5.1S stands were not available at the time of writing, so a good alternative pair stood in.

The design team have succeeded in removing the spit from the metal dome and making the loudspeaker both safe and seamless, but they have also removed some of the life-blood at the same time, the MS 5.20s bordering on the side of politeness. Given raucous budget equipment, however, the MS 5.20s shine. Put the 5.20s on a cheap 'n' cheerful system, where a pair of £150 loudspeakers should logically reside and what might otherwise be a peaky and unglamorous sound begins to sound smooth and refined.

When I used these loudspeakers in my own system, I wanted to remove the grilles and listen without the Positec circuit. On a cheap system, I was glad for these obstacles between me and the signal. They have a civilizing air that balances out the irregularities of some budget equipment. Treble is fast and tight, although it does not reach the very top of the frequency range. Bass has more of a bloom to it; still light and fast, but a little over-warm.

The 5.20s produced a fair sound-stage between the two boxes, though without projecting beyond them. Articulation, tonal separation and detail were all adequate. I suspect that the Positec system may be reducing the overall quality here, although Mordaunt-Short suggest that the circuitry is effectively inaudible when not engaged.

While these weaknesses are readily apparent on a revealing and well-



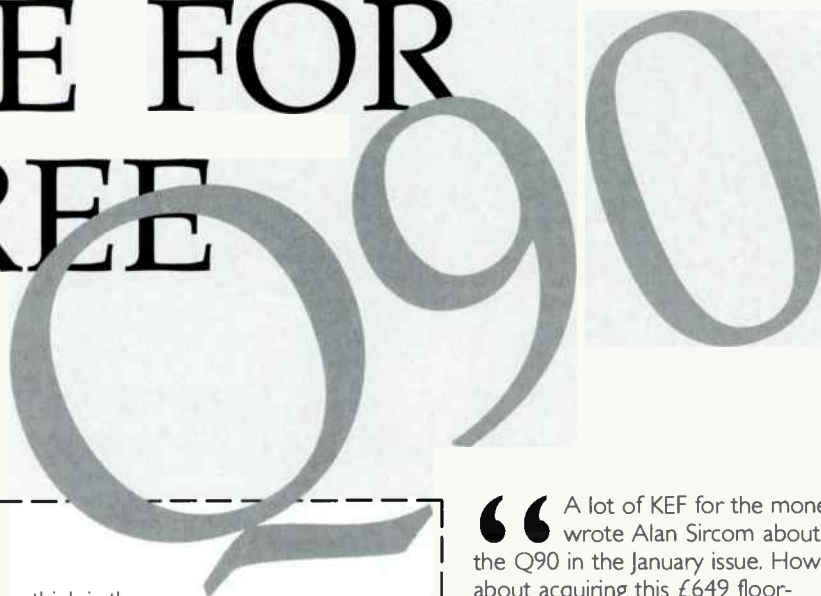
# breaking the mould

**Mordaunt-Short have used a new one-piece injection-moulding process for the main driver of their new 5.20 loudspeaker, Alan Sircom hears.**

balanced system, they become positive virtues on the end of a lesser one, as they apply an even-handedness to the sound. I believe that this is due to the 5.20s almost silken coherence, which ties all the parts of a performance together, no matter how complex the music. This is an attribute which makes the Mordaunt-Shorts very listenable.

If I was looking for a loudspeaker to suit a low-cost, or ageing, system, then the MS 5.20s would be high on the list. Their pleasant, forgiving and relaxing character, combined with their even nature will find many followers ●

# QUEUE HERE FOR A FREE



## ENTRY FORM

Circle the letter against what you think is the correct answer, and complete the tie-breaker.

1 The letters KEF stand for?

- A KEYNOTE EQUIPMENT FACTORY
- B KENT ENGINEERING AND FOUNDRY
- C KINETIC ENGINEERING FACTORS

2 How many "Q" models are there in the range?

- A 6
- B 9
- C 3

3 KEF recently celebrated a birthday. How many years have they been in business?

- A 30 YEARS
- B 50 YEARS
- C 25 YEARS

Tiebreaker. Complete the following limerick, preferably in a form that can be printed!

There was a young lady from Kew,  
Who discovered an experience quite new;  
With a leap and a bound,  
In a dealers' she found . . .

\_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Postcode \_\_\_\_\_

Daytime tel. no: \_\_\_\_\_

Please send your completed entry form, completed in block capitals, by 6th March, to: **Q90 Competition**, Hi-Fi World Magazine, 64 Castellain Road, Maida Vale, London W9 1EX.



“ A lot of KEF for the money,” wrote Alan Sircom about the Q90 in the January issue. How about acquiring this £649 floor-standing, three driver - including the famed “Uni-Q” two-in-one unit - loudspeaker for free? We were so delighted with it we decided to offer, in conjunction with KEF, a pair of Q90s as the prize in this month’s competition.

Just to remind anyone who didn’t read last month’s review, the Q90 is a reflex-ported design. The box is a knuckle-rapper’s despair: no matter how loud the music the cabinet itself stays stubbornly unmoved. This contributes to what Alan described as the Q90s’ “wicked sense of rhythm.”

Up at the top of the box is KEF’s “Uni-Q” driver. Inset into the 200mm mid-range driver is a polymer dome tweeter with a fluid-cooled coil, visible where the dust-cover normally sits, surrounded by a thin chrome ring. The aim of the Uni-Q configuration is to approach the ideal of a “point source”, where there is no as little time delay and as little physical space between the tweeter and the mid-range units as possible. Imagery should be spot-on, and it is. “A high level of both detailing and imagery at low and (very) high volumes was the order of the day,” Alan wrote. Imagery was “close to the ideal from a box loudspeaker, travelling far and wide, hardly tied at all to the two black boxes,” he continued.

Not only this, but dynamic range as well. Alan scared himself with the drive and impact of Thomas Dolby’s “I Scare Myself”; Eric, pinching the Q90s for a weekend, frightened his





neighbours out of bed with Prince on a Sunday morning. The Q90s are efficient so don't require expensive amounts of power to go loud and lively.

This is your chance to acquire a speaker "with attributes lodged firmly in the high end" for nothing more than the cost of an envelope, a stamp, and a little exercise for the little grey cells when you pore over the competition questions.

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London W9 1EX**

to arrive by 6th March 1992.

We will endeavour to publish the results in the June issue. Audio Publishing Ltd. reserve the right to publish such entries or parts of entries as the company sees fit. No correspondence may be entered into arising from this competition and the Editor's decision is final. Employees of KEF and Audio Publishing Ltd., may not enter.







DEVELOPED IN 1919 - DISCOVERED IN 1991

# *the General Electric 211 valve*

An almost forgotten valve from more than fifty years ago could be about to take valve amplifiers into a new century.

Alan Sircom listens to a prototype and tells the story;

Noel Keywood explains the background.

**T**he General Electric GL-211 bright emitter triode valve first appeared in 1919. It was originally intended for use in a telephone line amplifier, but was quickly adopted for transmitting and audio use. Early valves were fragile; this was one of the first 'ruggedized' designs. Known as VT-4-C to the military, it followed on from the VT-1 and VT-2 of 1917. They are all part of a family of

triodes, designed between 1913 and 1935, culminating in the much vaunted 300B valve which found use in cinemas.

Because of the 211's rugged design, compared to the valves of the day, it was quickly pressed into service by the U.S. Signal Corps for use in transportable tank, battlefield and boat transmitters.

In audio, the 211 was used in a variety of applications, including Westrex cinema

amplifiers. Being popular, it is thought that at least fifteen valve manufacturers were simultaneously producing the 211 in the USA alone, before the Second World War.

The 211 based military and cinema equipment had been largely superseded by the end of the war. The valve became widely available as an army surplus item in the States as a result. They were soon

widely distributed around the world as part of a U.S. foreign aid programme; distant, war-torn countries, begging the US of A for food, tools and clothing - what do they get? A transmitter valve!

Although many of these valves became the centre-piece of home-built Far Eastern audio amplifiers of the fifties and sixties, the supplies of the 211 went largely unnoticed elsewhere for many years. In Europe and the US, where the valve's audio application is almost unknown, the 211 became a long forgotten memory.

Things were different in the Far East, however. In Japan, noted designer and reviewer Kita Murakawa, later referred to as "The Audio Professor", designed kit amplifiers based around the 211, along with many other triodes, back in the late 1950s and early 1960s. It seems that, because of the Japanese penchant for big efficient horn loudspeakers in small rooms, they had little need for high-power amplifiers and could utilise the advantages of the triode, despite the relatively low power of the amplifier designs that used it.

Towards the close of the 1970s, two well respected designers in Europe, Bey Yamamura and Eric Anderson, were

working with the similar, but higher powered, 845 valve. At the same time in Japan, Hiroyasu Kondo was developing no-feedback, single-ended designs using these valves, which culminated in the 211-based Audio Note Ongaku (Ongaku is roughly translated as 'music' in Japanese).

Around 1982, Peter Watson of Selectron (a.k.a. PM Components) was on one of his valve-hunting expeditions in Europe when he discovered a cache of 211 valves belonging to a French scrap merchant. These had been 'left behind' by the U.S. Army Signal Corps after World War II. One can be seen in the picture, glowing healthily - forty four years later!

Today, the 211 valve is undergoing a renaissance. For the first time since the end of WW II, the valve is being manufactured again - in China, under the Shuguang brand name. A great deal of renewed interest has been created by the £34,000 Audio Note Ongaku. This design, costing over a thousand pounds per watt, takes the single-ended application of 211 almost to its limits, with about five pounds of silver wire in the transformers alone. Its appearance, price and sound quality have done a lot to turn heads and bend ears toward 211 amplification in Britain.

Currently, only the Audio Note Ongaku is available in this country, but several, less expensive designs are snapping at its solid silver heels. In the US, Cary Audio have spoken of a 211 amplifier, to match their Western Electric 300B (another famous triode) power amplifiers. British-based Grove Valve Amplifiers are about to launch the Nephthys, which we were fortunate enough to have a brief listen to (see below), while the Japanese still produce kit amplifiers based around the 211. Still more manufacturers are looking at the similar, but higher-powered 845. We can expect a rush of vintage-triode valve amplifiers to start appearing soon, now that manufacture of the valves has been restarted ●

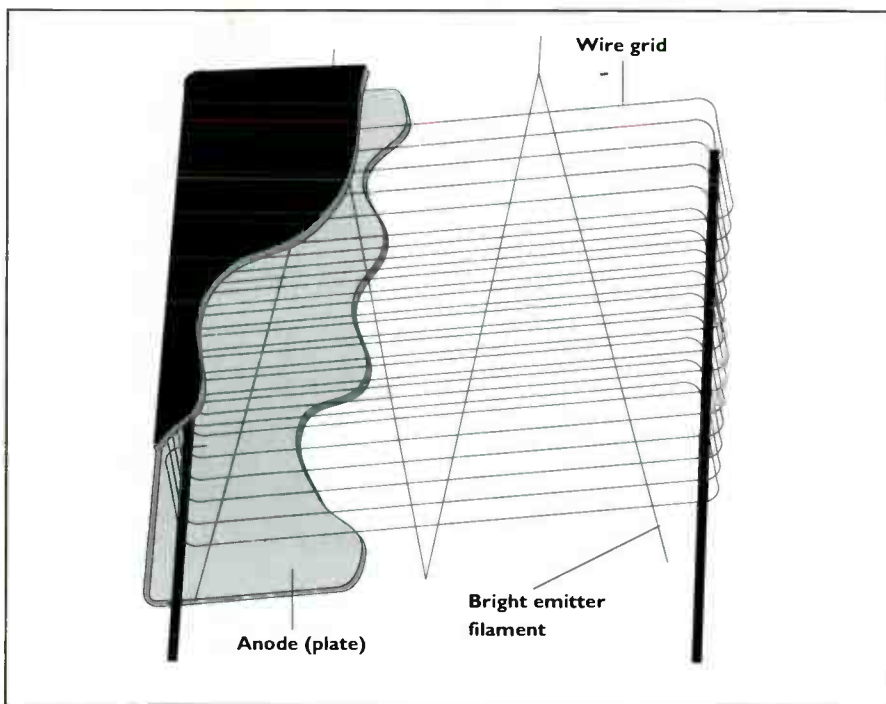
## G.V.A. NEPHTHYS 211 VALVE POWER AMPLIFIERS

Two years ago a twenty-seven watt line-level only (no LP input) integrated amplifier appeared which used a strange looking valve and cost over £30,000. The valve was a 211 bright-emitter directly heated triode. Along with the later 300B design it had looked destined to disappear into the sands of time, only surviving as a

**The 211 valve stands out like a lighthouse on the Nephthys amplifier. It can be seen in the centre of the chassis surrounded by an output transformer, mains transformer and filament transformers; this is a prototype. Being a single ended amplifier just one 211 valve is needed to drive the loudspeaker.**







smoothes over the roughest edges. That aside, the Nephthys is capable of some of the most natural performances outside of a live event.

Where it misses out is in its lack of power. A system this open demands orchestral pieces to be played at levels approaching realism, but this will never be possible unless the monoblocks can be partnered with super-efficient horn loudspeakers.

Briefly, if the production version of the Nephthys is going to be similar to the prototype, but without its blemishes, it may be impossible to live without. It offers a fair slice of the Ongaku's magic, without having to hock everything to pay for it ●

**The basic structure of the 211 follows a simple form. The filament is stretched vertically through the centre of the valve. It is surrounded by a wire grid which in turn is surrounded by a sheet metal anode.**

memory with an old school of enthusiasts and constructors.

Instead, the 211 valve has attracted so much attention that PM Components have put it back into production, after a break of about forty years. Now a new wave of 211/VT4C valve amplifiers is almost upon us, but without the kilos of silver wire that made the Ongaku so expensive.

The Grove Valve Audio Nephthys monoblocks, expected to be around £4000 a pair, are the first. Prototypes lived in my system for a week. As such a detailed analysis of the amplifiers would be unfair, but the overall sound quality is worth comment. Various problems did manifest themselves. The monoblocks were noisy, both mechanically and in terms of hiss through the speakers. Much of this is due to the off-the-shelf transformers used in the pre-production model. I have been assured that the Grove-designed transformers will eradicate a large proportion of this hum and noise in production models.

### Listenable

In light of this it was all the more surprising that when warmed up the amplifier had the ability to almost completely disappear when music was played. While the overall presentation may be a little too saccharine for some, the Nephthys is an extremely listenable amplifier. It destroys any suggestion that valve amplifiers do not deal with bass properly: bass was deep, tight, rhythmic and far better controlled than that of many solid state designs.

The Nephthys offers a sense of reality difficult for 'conventional' amplifiers to achieve. By giving everything a natural acoustic and air the whole system vanishes, allowing the listener to sit in on the recording session. It has a slight tendency to bathe everything in a 'sweet' light; while gritty music is accurately portrayed, it

## TECHNICAL DETAILS ON THE 211 VALVE.

The General Electric GL-211 valve towers above more modern and compact designs, standing around 7.5 inches high. Its thick tubular glass envelope is about 2.25 inches in diameter. As valves go, this is one of the most impressive looking types to be used in audio - in the Far East, if not in the UK. Not only is its simple electrode structure clearly visible but, being so old a design, it also has a 'bright emitter'. As the name suggests, this glows brightly, which consumes a lot of power (3 amps at 10 volts), but it looks very pretty.

Described by General Electric as a 'transmitting tube' (what we call valves Americans call tubes), GE's literature also describes the 211 as 'a general purpose three-electrode tube' that can be used for Class A or B audio amplifiers. The plate (anode) dissipation is quoted as 100 watts, and in Class B push-pull configuration the 'Max signal plate power output' is quoted as 260watts. Trouble is, this is a high impedance valve of around 4000 ohms, so it runs at high voltages - up 1250 volts! This makes audio amps using 211s seriously dangerous to build or tamper with. It also requires components that can withstand such voltages.

The sort of simple, single-ended amplifiers that 211s have commonly been used in cannot deliver a lot of power because the circuit places too much strain on the output transformer. In balanced push-pull mode though, powers of 100 watts or more should be easy to achieve. At present the 211 has hardly been seen in Britain. We first encountered it in a brief listening session with a Japanese Ongaku amplifier. I was taken aback by what I thought I heard. Not quite believing that any amplifier could sound so atmospheric, I mentally pigeonholed this experience as something to follow up, to check more carefully.

Because the Ongaku costs a cool £34,000, we didn't rush to review it. However, learning of the arrival of 211s in the UK, distributed by PM Components who restarted their manufacture in China, we fairly flew down to Gravesend to find out more. It

turned out that they had a batch of original 211s, manufactured for the US Army Signal Corps sometime during the '40s, plus new Shuguang 211s from China.

As old but sought after valves like 211s have become progressively rarer, their price has climbed and climbed. Few people in Britain realise that the East buys the best vintage hi-fi and valves like these for huge sums of money. Original 211s like the one in our picture used to change hands at no less than £60 each. Now that their manufacture has restarted, prices have halved; PM charge £28.50 each.

So the 211 has now become freely available again, meaning that new amplifiers can be designed around it. We know of people doing just that. Triode valve amplifiers are an experience waiting just around the corner for us. Our exposure to the Ongaku - and now the 211 prototype Alan secured for a few days - has convinced us that an extra dimension is about to be introduced to hi-fi.

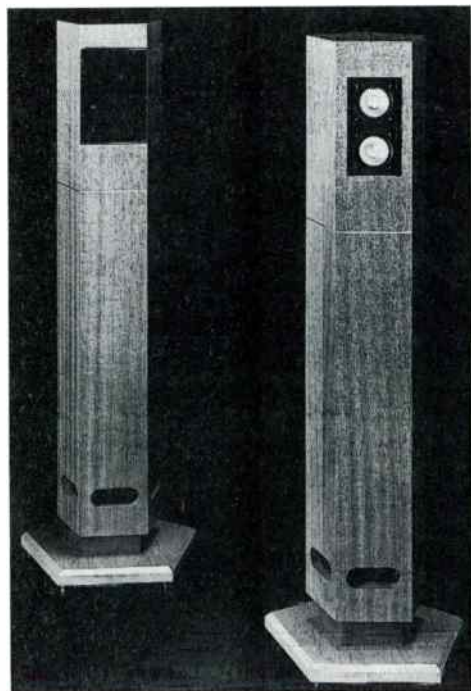
**NK**

### SPECIFICATION

General characteristics	
filament voltage	10V
" current	3.25A
amplification factor ( $\mu$ )	12
transconductance (mmhos I=60mA)	3600
interelectrode capacitance (pF)	
grid-plate	14.5
input	6
output	5.5

Max. ratings and general operating conditions in Class A audio amplifier

Anode volts	750V	1250V
anode dissipation		75W
DC grid voltages	-46	-80
Pk. grid swing (V)	41	75
DC anode current (mA)	34	60
anode resistance	4.4k	3.6k
anode load	8.8k	9.2k
power (W)	5.5	20



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*Hi-Fi World, Dec 1991*

This is one of the finest pre-amplifiers I've ever heard.

*Hi-fi Choice on Concordant Excelsior*

It creates one of the deepest and most solid sound stages of any pre-amplifier I have encountered, valve or solid state.

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*Hi-Fi Choice, Nov 1991*

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*CD Review On Pentachord Speakers, Nov 1991*

The Pentacolumns are among the most revealing speakers I have heard.

*Hi-Fi World, Dec 1991*

I feel that the Art Audio Maestros are among the finest valve amplifiers I have ever heard. I can barely imagine anything more alluring.

*Hi-Fi World June 1991*

The big sound, all seeming to emanate from the miniatures, was quite astonishing.

*Gramophone on Pentachord Speakers July 1991*

**We could not have said better ourselves . . .**

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four of 35mm. These are then stripped back by 10mm at each end and then tinned. Here, we encounter another inaccuracy; the holes in the crossover that these cables fit into are too large, while on the drive units they are too small. Thus the cable should be thinned and tinned at the driver end and at least hooked over at the crossover, before tinning. Again, no mention is made of this.

However, back to the plot. Having tinned the cables, it is time to solder them to the crossover circuit board. The 20mm long cable is directed toward the rear terminal block, while the 35mm pieces feed the two drive units. As I said before, the holes on the board are too big for the cables, making it slightly difficult to solder. It would be better to fan the cable out after poking it through the crossover hole, tin it and then solder it down to the board. As it stands, the tinned wires stand proud ungraciously from the board.

The soldered board, whether wired correctly or not is then screwed to the rear wall of the loudspeaker. If you have followed the instructions to the letter,

you now find yourself without pilot holes to screw it down; a fiddly operation ensues, trying to drill holes through the holes in the front baffle. Once this is achieved, the cabinet is then lined with the foam supplied, remembering to let the free ends of the cables stay exposed.

From here, the internal chamber is filled with the wadding provided. Finally, the cable is soldered to the two drive units and the rear panel. Once again, the size of the cable does not match the holes in the drive unit tags. These should be thinned for easy fitting. Remembering the polarity of the cable, solder these to the drive units and then the units are glued and screwed to the baffle, using the special permanently semi-solid adhesive supplied by Dynaudio.

All that's left is to run the loudspeaker in for about thirty hours, before proper listening takes place. Our versions had the Alan Sircom Lego set seal of build quality, with slightly misshapen edges, but they are still my babies. I built them, so I think that they are fantastic ●



The finished loudspeaker in bare MDF, showing the quality of the drive units and the moulded plastic port that is provided.

## Measured Performance

A lot of good reports about the sound of this little loudspeaker came in from hearings at shows. Alan was given a bottle of Resin W a pinny and the parts; we waited with bated breath.

Two loudspeakers emerged from this experiment. They were run in by our resident Musical Fidelity SA-470 power amplifier and then put up for test. I listened to them beforehand though and tried to guess their measured response: they were essentially smooth and evenly balanced tonally, with dry, overdamped bass, a slight tendency to brightness and what seemed like a small amount of information suppression in the upper mid-range, probably attributable I felt to a suckout at the crossover point.

The actual frequency response of both speakers is shown in the analysis. It proved to be very flat as expected, and it does show just the effects I heard, albeit in less pronounced form than imagined. By general loudspeaker standards, the response trace is very flat, especially since the vertical scale is expanded, which magnifies errors. Better still, it is maintained over a reasonably wide vertical listening angle, making for consistency of presentation over a range of seat or stand heights. The rise in treble output above 10kHz is small, and so is the shallow suckout from 3kHz up to 6kHz. In terms of frequency response, this is a well engineered and accurate loudspeaker.

The impedance curve was a bit of a surprise; this is very much a four ohm design. It will draw more current from an amplifier than most, offering better utilisation but also placing a bigger strain on power supplies. Budget amplifiers are unlikely to fare well; good hi-fi types should have no problems.

Low impedance usually means high sensitivity, but in this case the figure was low, although it has doubtless been improved by the increased current draw at any given volume setting. The Wilmslows provided 84dB sound pressure level for a nominal watt of input power. This means that a fair amount

of power should be available if the speakers are to be run loud. I would advise 50 watts per channel minimum, with 100 watts a good target value. The Dynaudio drive units are robust and the bass unit, although reflex loaded, appears well damped; it doesn't flap around a lot.

This loudspeaker measures very well. It is a true mini-monitor with a relatively accurate presentation. It is not an 'effect' loudspeaker by any means. In terms of measured performance, its high price is fully justified.

As I mentioned earlier, these speakers have an essentially even sounding tonal balance, with some slight accentuation of upper treble that imposes just a tinge of brightness to their character. This is strengthened by a very damped and controlled sounding bass performance. If anything, most listeners would probably find the bass delivery a bit too dry and lean, at least with the boxes up on stands away from a rear wall. Pushing them back close to a wall brings up bass usefully, making the speakers easy to place and unintrusive in the home. They benefit from wall reinforcement of bass. Rock music is reproduced with great speed and precision in the bass; these are not speakers that waffle, boom or get confused. They're pacy and tight.

Even though the MDF (medium density fibreboard) cabinets are small and very solid, I heard them 'thrum' characteristically under heavy bass drive. The colouration wasn't intrusive or especially annoying, but perhaps some internal bracing or strengthening could lessen it. This is where home constructors could spend happy hours experimenting. The effect was no greater than the box 'signatures' suffered by other mini-monitors, but it may be curable.

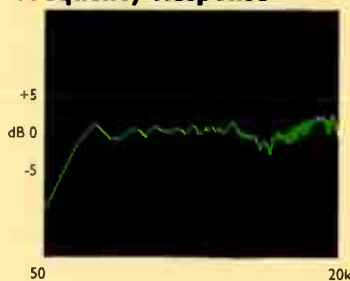
The Wilmslows have very little tonal colour of their own, well resolving the innate character of any recording presented to them. In this respect, they reminded me much of the ATC SCM20s we tested last month. Their sense of analysis was of a high order, being marginally better than that of the Epos ES11s for example, if not up to

B&W 805s. There is however, a certain lack of smoothness and cohesiveness, due largely to the slight peakiness in the tweeter I suspect. Put this with lack of colouration and you have a coldness of character that creates a sense of academic accuracy to match the measured accuracy. It results in an even handed treatment of both Rock and Classical music though.

If you read our report on mini-monitor loudspeakers in the previous issue (January 1991) and are wondering how these loudspeakers would have fared, I can tell you: very well. I made a comparison with the Epos ES11s and B&W 805s and found the Wilmslows were unembarrassed. The Epos ES11s sound more cohesive and smoother, have heavier and fuller bass and obviously superior imaging. The Wilmslows were arguably more accurate and controlled though. Much the same situation made itself known with the B&Ws; the Wilmslows were drier, tighter, especially in the bass, where the 805s are generous in their output.

As kit loudspeakers go, these are expensive. However, they have very high quality drive units from which they benefit greatly. You don't need much Resin W and Alan put the drive units in the right way around, so the instructions must be good. The reports of good sound quality are justified; high quality mini-monitors are the result. NK

## Frequency Response



Flat overall frequency response characteristic with a dip at 4kHz



# carolina dream

**A part-valve Compact Disc player from Cary of North Carolina gives Eric Braithwaite a warm glow inside.**

**M**y friends were astonished. "A valve Compact Disc Player?" Well, perhaps I misled them a little, for there are only two valves in the Cary CAD 855. Apart from that, the insides - and the exterior, apart from the name, if it comes to that - of the Cary, as the number might suggest to the knowledgeable, are effectively those of the Rotel RCD-855. In fact, our Cary appeared with a quite undisguised RCD-855 manual, albeit labelled Rotel Audio of America.

Let's dispel an illusion or two. Valves in a CD player are not a crazy anachronism; it is only the digital signal processing that might be anachronistic if done through all-valve circuitry. Even so, one should remember that Manchester University's pioneering computer, the Goliath, was an all valve affair. It had to be - transistors hadn't quite been invented. It was, of course, nearly the size of a house, and so, probably, would be an all-valve CD player. There's nothing wrong, in principle, anyway, of putting a few into the analogue output stage, where, with luck, the benefits of

valve sound will show.

This is what Cary have done. Precisely why is a bit of a mystery, for we had very little information on the company. We discovered it is not named after a man but a place: Cary in North Carolina. Somewhere in Woodwinds Industrial Court, they manufacture a rather neat chromium plated stereo valve amplifier, the SLA-70, which is also available in monoblock form, a SLP-70 pre-amplifier, and a curious beast, the CAD-5500 'CD Processor'.

This last is curious, because as far as I understand it, its function is to 'purify' what Cary view as the "extremely bright, harsh, edgy and often unpleasant sounds" from digital sources by passing the audio component, derived from the analogue output, through triode-valve based circuitry. This sounds like adding a considerable amount of analogue gilt to the already analogue gingerbread, but anyone who is interested is urged to seek out the November 1990 issue of the American hi-fi magazine *Stereophile* for further elucidation.

In lieu of the sparse amount of

knowledge we could garner on the Cary CAD-855 other than by peering into it, it remained for the listening session to decide how much gilt the two double triodes added to the sound. There are certainly no gilt edges to the external casing or the functions of the player: this is all fairly plasticky and basic. Cassette-deck type plastic keys perform the Open/Close, Play, Stop, Pause and Track skip functions, while six smaller ones allow for Repeat Play, Search, Program (up to twenty tracks), and Scan, which plays the first ten seconds of every track in sequence. All except Drawer Open/Close can be accessed via the Remote control, which also makes programming or track selection simpler via a 1-10 numeric keypad.

The display is Rotel-ordinary, with the basic track number and time display and flags for the functions in use. The single obvious external addition is three metal cone feet along with the ordinary plastic four. These are sharp - resting the player on my knee while disentangling a couple of leads brought a sharp yelp as one neatly perforated my trousers.

They are not mere ornament. Some isolation from vibration is essential, for this machine is startlingly microphonic: not one on which you should idly drum your fingers while waiting for your favourite track to appear. Tapping your feet safely back within the confines of your armchair, however, seemed to become an inescapable accompaniment to the CDs played.

Instantly noticeable was that every



single one of the Cary's sixteen bits counted. Dutoit's *Capriccio Italien* not only had a defineable St. Eustache acoustic, but a rich gorgeous, loveable orchestral sound. There was glorious brass timbre, and the impression of a real orchestral dynamic range. Not only that, but a clearly laid-out orchestra in front of the listener with near-perfect depth. Every microsecond of reverberation was measurable; every dying note one you could hold your breath to. The room was wrapped in a splendid weave of sound. The superb tonal quality for woodwind and strings had me actually singing along to Tchaikovsky, which is not something I am normally found doing!

## Dutoit's *Capriccio Italien* not only had a defineable St. Eustache acoustic, but a rich gorgeous, loveable orchestral sound

The four bassoons in the Prokofiev scherzo each had their own distinctive earthy tone, though with a touch of added reediness in some of the middle notes. It was an extremely musical performance. So was solo classical guitar, with a delicate rounded soft welcoming aura which didn't diminish the dynamics or the degree of insight into the performance. Every single quaver and demi-quaver was precisely in its place, Pascal Roges Satie recording was clearly a solid, real, piano in an empty Kingsway Hall. A musician's player, this: you can follow the score while listening. It's extraordinary how seldom that turns out to be so easy.

### Vocal Gymnastics

Much delighted by the CAD-855's evident musicality, I put on a recording which hardly ever comes out as other than a terrible mess. It is Cathy Berberian's 'Stripsody', recorded live in the Almeida Theatre by Linda Hurst. The song - if it can be called that - is a kind of vocal strip cartoon, full of wild grunts, groans, 'Pows!' and comic-strip sound effects. Rarely have I heard the audience so obviously enjoying the vocal gymnastics. Seldom have they so evidently surrounded the stage instead of being parted left and right like the Red Sea. There was such a tangible smell of greasepaint, and such a theatrical ambience, I could close my eyes, readily believe I was there, and feel the warmth of the spotlights on the stage in front of me.

This suggested that pace, timing and

rhythm was not going to be in short supply, confirmed by a stunning pyrotechnic display from Prince's *Diamonds and Pearls*. All the mix was spread equitably across the soundstage with some of it well beyond the speakers - both fore and aft as well as sideways. Wide? the walls of the room should have been further apart. Deep? Enough, almost, to walk round and through Prince and the band. Not only that, it was taut, tight, fast, nervy, real 'on the edge' stuff. I forgot I don't like Prince much. My nose twitched like a cat scenting salmon. The whole recording was a kaleidoscope of sound and instruments.

There is no doubt that the basic transport started off as a good 'un, and

whether you're a valve freak or not, those two added triodes have done something to the analogue output akin to adding a very, very good DAC to the digital one. This is important, because the observant reader will have noticed by now I have been very chary of mentioning one thing. The price. What with Reagan, recessions and exchange rates, this Cary comes from where the cotton did, and it isn't cheap. You won't see change from £899; but then, if you are into valves, three highish figures after the pound sign are not quite as frightening as solid-state pounds. If only Cary had made their tubes more visible, there would have been a good two-hundred's worth of conversation piece in the price as well ●

### Measured Performance

The Cary CAD 855 is a Rotel RCD-855 CD player with valves! There are only two of them in fact, but they fit inside quite easily, being mounted horizontally in a conveniently empty space. The associated audio components are hard wired in around the International Octal valve holders. A subsidiary circuit board carries power supply components, being fed by its own toroidal mains transformer that also occupies some of the spare space. The Cary isn't unique; CD players with valve analogue stages have been made before in the U.S. - but it is very novel.

I half expected this player to be a bit of a dog's dinner. It's easy enough to devise valve circuits that are noisy in comparison to Compact Disc, as well as strongly non-linear (i.e. distortion producing). Such properties might well swamp the solid state circuits so well that a valve sound would be imposed upon the solid state sound, as it were, giving a euphonic one altogether, but one that might well be a bit bland, noisy or deficient in some other manner.

The Cary has an exemplary measured performance. The two 6SN7GTB double triodes do add second and third harmonic distortion components, but they become significant only at peak level (0dB). Since music cannot hit this level, but peaks at around -3dB and averages around -30dB, the peak level performance is not relevant. At -30dB distortion measured 0.07%, which is higher than the original solid state circuits, but not greatly so. It is boosted only by the presence of second and third harmonics which, subjectively, are far more innocuous than higher order harmonics. The distortion analysis clearly shows that higher order components from the TDA-1541 sixteen-bit convertor chip do exist, but they are not too profuse.

How the characteristics of the valve will impose themselves upon the preceding solid state circuits in subjective terms can only be discerned from listening tests. The valve stages don't add much in the way of distortion, nor do they swamp out low level signals with noise. The Cary was remarkably quiet in fact. Noise didn't affect -90dB signals at all, for example.

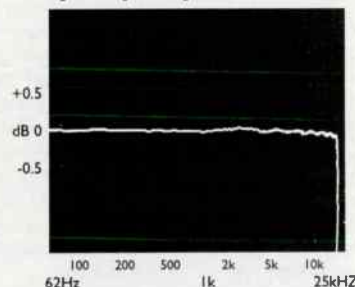
The valves affected measured performance little, other than to result in a low output of 1.6V. Channel separation remained high, dynamic range was good and noise extremely low at -114dB. Frequency response, seen in the analysis, was flat, being the usual 4Hz-21kHz between -1dB

limits. This ensures a good sense of tonal balance will be provided; the valves add no colouration in this area. The valve output stages of the Cary CAD-855 were well engineered. They affect measured performance very little. The Rotel is a sixteen-bit Philips player of good specification. Its integrity wasn't adversely affected by this novel implant. **NK**

### Test Results

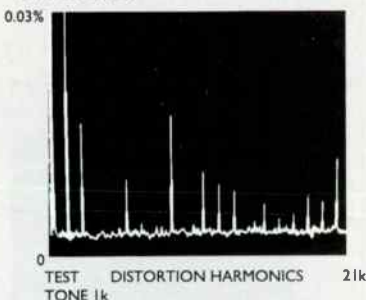
Frequency response	4Hz-21kHz	
Distortion		
-6dB	0.4	0.5
-30dB	0.07	0.07
-60dB	0.5	0.5
-90	51	52
-90dB dithered	11	12
Separation	left	right
1kHz	-101	-103
10kHz	-78	-81
Noise	-114dB	
with emphasis	-114dB	
Dynamic range	107dB	
Output	1.6V	

### Frequency Response



Flat frequency response

### Distortion



Extended distortion harmonics from sixteen-bit convertor, combined with second and third from valve, totalling 0.07% at average music level (-30dB). This is a respectable, if not exceptional performance.

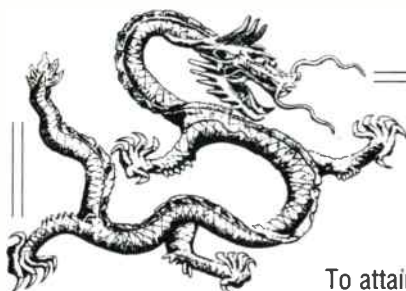
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## Golden Dragon

Precision Audio Tubes

To attain a premium tube, sonic quality must be designed in from the start. As with any fine audio component, vacuum tube design is both an art and a science. With the closing of the legendary tube manufacturers it seemed that the magic combination would be forever lost.

Fortunately, a group of British audiophiles and engineers have worked diligently with the Shuguang and Beijing tube factories in China to create tubes of the highest sound quality and reliability. No aspect of design or performance has been neglected. Countless prototypes were auditioned in the creation of custom audio tubes that rival the finest ever made. The results of these efforts are now available as Golden Dragon precision audio tubes.

**"Judging by the quality and sonic superiority of the Golden Dragon 12AX7 and EL34, this venture is the best thing to have happened to tubes since the heyday of the likes of M-O Valve and Mullard... the Golden Dragon goal of premium tubes rivalling the best ever made appears to have been realised."** Dick Olsher, *Stereophile*. Vol14 No.11 November 1991

### RETAIL PRICE LIST

Golden Dragon Pre-amplifier Tubes	Singles
* 6AQ8/ECC85	£6.50
12AT7A/E81CC/ECC81	£6.50
12AU7A/E82CC/ECC82	£6.50
12AX7A/E83CC/ECC83	£6.50
6DJ8/E88CC/ECC88	£9.50

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	£12.50

Golden Dragon Triodes	Singles	Pairs	Quads
2A3 4PIN	£22.50	£47.50	£95.00
2A3 OCTAI	£22.50	£47.50	£95.00
*6B4G	£23.50	£49.00	£98.00
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

Golden Dragon Power Tubes	Pairs	Quads	Octets
EL34/6CA7	£18.50	£37.00	£74.00
*EL34S/6CA7S	£25.00	£50.00	£100.00

### NOVEMBER 1991

Golden Dragon Power Tubes	Pairs	Quads	Octets
EL84/6BQ5	£8.50	£17.00	£34.00
E84L/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

\* Denotes New Design or New Type

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cartridge like the Eroica. The Iso pulls every bit of information from the cartridge. With an MC like the Eroica this could be a double-edged sword, showing the cartridge for what it really is. One needs a coil of the likes of a Dynavector 17D2 at least to get the best from the Iso. Audiolab's solid state 8000C preamplifier, with its well made moving coil input may be a better bet here.

The power amplifier stakes are a little more complicated. Audiolab's 8000P, Quad 306 and 606 and NAD 2100 spring to mind, with the more expensive Croft Series 5, Musical Fidelity P180 and Deltac 50S following close behind. If the Audio Innovations 200 pre seems to fit the bill, the 200 power must be a logical choice, as the two seem to synergise well. Make sure that you listen carefully to any system before you buy, as your Heybrooks may not suit the amplifiers perfectly.

Finally, your cabling may be in need of a change. The NAC A4 cable, since replaced by Naim NAC A5, works very well, although it may be ageing a little. Apart from the standard Naim fare, look at Kimber, Furukawa or, if you are using Audio Innovations equipment, Audio Note. **AS**

? I recently purchased a  
● secondhand Michell Gyrodec with upgraded power supply, RB300 arm and Audio Technica AT-95E cartridge.

I am more than happy with the turntable but my system still sounds a little polite and bass light. Every component bar the amplifier has been changed, including the listening room, and so I have come to the conclusion that this piece of hardware is to blame.

I have around £500 to spend on a replacement amp and cartridge and would consider the second-hand market. I have short-listed the Audio Innovations Series 500, Exposure X, Musical Fidelity B200 and Naim Nait. As yet, I have not heard any of the above, and would welcome suggestions you may have on my course of action.

The system comprises the Gyrodec, Marantz PM45 and Tannoy M15's, biwired. All equipment rests on Appolo supports in a 10'x15' room. My musical tastes vary from Rock/Pop to Jazz.

**D. Taylor,  
Sheffield**

First, the Gyrodec is one which relies on the cartridge to produce the bass, not the turntable, and the AT-95 is far too basic a cartridge. It's good for twenty pounds, but it is only twenty pounds' worth of cartridge! Even moving up to a Goldring 1012 will make a substantial difference in the sound quality.

If you are looking at £500 for cartridge and amplifier, I would stick to moving magnet cartridge designs. Most of the amplifiers in this price band have little to offer the moving coil cartridge user. As such, aside from the Goldring 1000 series, the Roksan Corus Blue and Black, the Shure VST-V and the Ortofon 500 models all have a lot to recommend about them.

On the amplification front, I'd advise some caution when looking at second-hand products, especially from the valve companies. Some of these early devices are not quite as reliable as their modern counterparts, due to overrunning of the valves themselves. Rather than going for a Series 500 (£700 seems to be the asking price for one in good condition) look at a new Series 400 integrated. Of the others that you mention, the Naim and Exposure were both designed with the vagaries of the Linn LPI2 in mind. This may make them sound a bit shallow with a deck like a Michell. An Audiolab 8000A, Mission Cyrus 2/PSX or a Kelvin Integrated, together with a good solid-core loudspeaker cable may suit better. **AS**

? I want to boost the output  
● signal of a Linn Basik turntable with K5 cartridge to line level cheaply, as I am broke and cannot afford to buy my desired amplifier but do have the means to amplify a line level signal to my satisfaction.

**Ian Meldsum,  
Beaconsfield, Bucks.**

Q.E.D. have just come to the rescue with the Discsaver, an add-on phono pre-amplifier which can be powered from either a PP3 battery or external 12 volt power supply. Cost is £29.95, details are in our News Pages. **EB**

? Having read two editions of  
● Hi-Fi world which I bought on holiday in England, since you do not forget vintage hi-fi and valve

equipment I dare to ask what editors of German Hi-Fi magazines were unable to answer.

Can you tell me the address of Michaelson and Austin, whose TVA10 power amplifier I possess? I badly need circuit diagrams or the service manual.

I am looking for a TVP-X pre-amp to match the TVA10. Can you recommend an English second-hand dealer? It is unknown in Germany.

At the last Penta Show there was a 30w integrated valve amplifier by AMC (also unknown in Germany). Have you got their address?

**Ulrich Zyzik,  
Bonn, Germany.**

No problem. Half of Michaelson and Austin is Anthony Michaelson of Musical Fidelity, 15/16 Olympic Trading Estate, Fulton Road, Wembley, Middlesex. HA9 0TF. We would hesitate to recommend any particular second-hand dealer, but a "Want Ad." in one of the U.K. magazines could well bring a response about the pre-amp. Lastly, AMC are a new company run by Malcolm Blockley (ex NAD). The CVT 3030 should be available in January 1992. Write to Campus International, 21 The Broadway, Old Amersham, Bucks. HP7 0HL. **EB**

? My system consists of a Linn  
● Axis turntable with an Akito tone arm and a K9 cartridge. My amplifier is an old Quad 303 power amplifier with 33 pre-amp and FM tuner; my speakers are a pair of Bose 901s with active equaliser. I am impressed with the sound, but I would like your views on this system. I must stress that I like my music played LOUD and these 901s are the only pair I have not yet blown and I have owned a few pairs of £300+ speakers before. I found the tweeters always gave out. A friend put me on to the Bose speakers and I have had no problems so far. Do you recommend a change of amplifier as the Quad is fairly old? I would like to hear your views on this and on the actual system itself as to me it seems a strange set up.

**Martin Stone,  
Croydon**

The strangeness I suspect lies in the fact that the set-up is based on a misconception, and one proving decidedly pricey in shattered tweeters. The 303 was never designed to produce disco levels, and in trying, you

are simply overdriving the amplifier and the tweeters are giving up the ghost as a result of the ensuing distortion. It could be only a matter of time before the ones in the Bose units follow suit. The power handling of a speaker is quite irrelevant - it's the amount that goes in from the amplifier that is important. Too little output relative to the recommended power handling of the speakers (the 303 only produces 30-40w) and distortion kills tweeters; too much (i.e. more than the capability of the speaker) and both units are liable to blow. What you need, if you like the sound of the Bose speakers, is more power. The Quad 606 might suit, and if you want to stick to Quad, replace the 33 with a 34 which is both flatter and cleaner. **EB**

I suggest that the reason why your tweeters used to blow with alarming regularity is due to your low-powered Quad going into clipping. This produces strong high frequency content that kills tweeters. If you moved up to the NAD 1000 pre 2100 power amplifier or the expensive but more suitable Croft Micro/Musical Fidelity P180 combination, your loudspeakers would receive enough current to prevent you from blowing tweeters.

From these you will get far greater sound pressure levels from your loudspeakers. Now you are less likely to blow the tweeters, but the bass cones could come in for some flak, as could your ears.

Loudspeakers that you could effectively use in place of the Bose 901's are the JBL's, Musical Fidelity MC4 and MCS's, KEF's, Tannoys and the real nutter's loudspeaker, the headbanging Cerwin Vega! All of these have maximum SPLs of over 110dB - only 10dB off the pain threshold. At this point, I would expect the Akito arm to be highly mobile from all the air moving around the room.

Apart from their abilities to drown out Concorde and nearby revving motorcycles, most of these loudspeakers have a reputation for indestructibility, given an amplifier that does not clip too easily. Companies like Cerwin Vega! have often been threatened with legal proceedings at shows, their loudspeakers are so efficient. If that isn't loud enough, you need P.A. gear, but with SPL's well into permanent hearing damage levels, I doubt if even you could withstand such a sonic barrage. **AS**

# Hi-Fi World Special Audio Accessories

**A range of high quality audio accessories selected by us for their usefulness and effectiveness. A new selection of TDK accessories has been added to the collection.**



## KONTAK

Contact Cleaning Fluid  
Kontak is an effective two part cleaning solution that removes contaminants from electrical connectors of all sorts. It is applied with pipe cleaners supplied. Clear instructions list the most sensitive contacts that need treatment in a hi-fi system, although items like fuses which are not mentioned should also be treated.

The dirt that Kontak removes is clearly visible on the pipe cleaners, demonstrating just what degree of contamination contacts have reached and what Kontak is achieving.

Users commonly express surprise at the amount of dirt and contamination Kontak removes. After application, a system regains its original life, sparkle and vigour.  
**KONTAK .....PRICE: £21.20**



## ANTI-STATIC RECORD SLEEVES

Translucent antistatic record sleeves from either Tonar or Nagaoka, according to availability. A surface treatment makes them anti-static, lessening dust attraction. This helps keep records pristine. They are supplied in packs of fifty. We suggest you regularly change sleeves in order to prevent trapped dirt contaminating records, especially after cleaning. The record label is clearly visible through these sleeves, an aid to easy identification.

**LP SLEEVES (50) ....PRICE £7.50**

## NAGAOKA CD CLEANING KIT

As with cassette deck cleaning kits, we don't recommend the 'cogs and wheels' cleaners and choose not to sell any of them. Tests we have carried out with a Cambridge CD-1 CD Quality Control Unit clearly show that careful manual cleaning is the most effective way of removing all types of surface contaminants without causing damage to the disc.



Remember that CDs must not be scratched - even finely. Tests showed that the Nagaoka kit was the best all round cleaner. It has a solvent and a chamois leather pad which, together, bring the CD surface back to almost as-new condition.

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



## SORBOTHANE CD FEET

Four big, round rubber feet, 50mms in diameter and 18mms deep. Made from a soft, slightly sticky feeling form of artificial rubber known as Sorbothane, these feet have the peculiar ability to soak up vibrational energy, due to their high internal kinetic losses. Some people go nuts with them, swearing they improve everything, from the TV to the fridge! We sell them for use (as intended) with CD players, turntables and various other hi-fi components that might be sensitive to vibration. They improve sound quality by providing a more stable platform. Well-nutty and a lot of fun.

**SORBOTHANE CD FEET .....£27.95**



## NAGAOKA ROLLING RECORD CLEANER

The big drawback with most record cleaners is that they fail to remove all types of dirt. Brushes pick up fluff, but they redistribute

fine dust around the grooves, causing noise build up. Nagaoka's rolling record cleaner actually lifts dirt from the bottom of the groove - even fine dust. It uses a peculiar form of sticky coating on a soft foam backing. Dirt of all types - especially fine dust of the sort left by brushes - is removed completely. It is lifted from the record's surface, and no deposits are left behind. This is an effective way to dry clean a record.

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



## PIXALL MK II RECORD CLEANER

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

**PIXALL MARK II ..PRICE £10.75 REFILL ROLLER .....PRICE £2.75**



## NAGAOKA STYLUS CLEANER

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

**STYLUS CLEANING KIT . £2.50**

## AUDIO TECHNICA GREEN CD RING STABILIZER

These are detachable green rings which are fitted round the circumference of the Compact Disc. The non-slip material allows the disc to be picked up without





touching the playing side and leaving fingermarks. It also raises the disc slightly from any surface it's placed on, avoiding scratches if you don't replace it directly in the jewel box, as you should! It also adds a tiny but significant degree of mass to the outer edge of the disc, improving its stability and reducing vibration when it rotates at high speed inside the CD player. Green absorbs stray red laser light, so reducing random reflections within the disc, much like a green pen. So the rings perform many useful functions - and they are removable too! Improvements to the sound include better focussed and firmer images, plus a generally denser and richer sound.

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



**GOLD PLATED 4MM BANANA PLUGS**

We have a new style, heavy duty, gold plated banana plug with a unique type of axial solderless connection for loudspeaker cables. The wire is stripped back and pushed into a clamping collar, which is then screwed down tight. It will accept cables up to 6mm outside diameter and up to 4mm conductor diameter, holding them firmly and more evenly than the usual grub screw arrangements. They are supplied in a set of four.

**BANANA PLUGS (4) .....£8.00**

**SIDE ENTRY 4MM BANANA PLUGS**

Similar to the plugs described

above (i.e. gold plated, heavy duty) but with side entry for heavy loudspeaker cables of up to 5mm conductor diameter. The screw clamp grips the cable over its full diameter by applying pressure with a non-rotating cylindrical slug.

**SIDE ENTRY BANANA PLUGS (4) .....£10.00**

**GOLD PLATED SPADE CONNECTOR**

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

**SPADE CONNECTOR (4)£10.00**

**ARCAM RCA PHONO PLUGS**

Specially made in Japan to Arcam's specification, this heavy duty phono plug will accept audiophile cables up to 7mm in diameter. The 36mm long body is nickel plated and the contacts gold plated. Superbly built, we supply in polarised pairs with one/two ring end identity to allow send/receive ends to be established to take into account directionality. These plugs must be soldered with care to cables.

**RCA TYPE PHONO PLUGS (4) .....£15.50**



**LASAWAY GREEN PEN**

When red laser light hits the silvered reflective surface of a disc, some of it scatters and is later

reflected back off the disc edges, causing optical interference. Because green is far removed in the light spectrum from red, an opaque green coating effectively absorbs this scattered light, reducing interference signals reaching the laser and improving sound quality. The green coating is applied to outer and inner edges. It has been formulated by one of Japan's largest companies, Mitsubishi, to be harmless to the CD itself.

**LASAWAY GREEN PEN ...£7.50**



**AUDIO TECHNICA CD LENS CLEANER**

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

**CD LENS CLEANER .....£15.30**



**AUDIO TECHNICA ELECTRONIC STYLUS CLEANER**

Scared of damaging your stylus when cleaning it? Try this amazing little device - an electronic stylus cleaner that vibrates gunge right off the tip! Powered by a small AA battery, it's a doddle to use and

safe too. Just rest the stylus on its high speed vibrating brush and watch dirt get driven off automatically.

**ELECTRONIC STYLUS CLEANER .....£19.95**

**LASERGUIDE**

The clear polycarbonate of Compact Discs scratches easily. Measurements we have carried out show that scratches, being closer to the silvered reflecting surface where the laser beam is focussed, are much more of a problem than fluff, finger marks, etc. They demand heavy error correction and often overwhelm a player's capacity to substitute in spare programme information held redundantly for this purpose. Interpolation is then used to cover up the problem - which means guessing what the missing signal was like in order to fill in the gaps.

The only answer is to fill in scratches, lessening their ability to act as optical prisms capable of scattering the laser light. Laser-Guide is an optically engineered silicone treatment that claims to do this, reducing randomly reflected light by up to 50%. It is claimed that Laserguide improves stereo depth and openness. Just apply to the disc surface.

**LASERGUIDE .....£14.95**



**AUDIOQUEST OPTICAL LINK Z**

This is a wide bandwidth, ultra high performance optical cable for digital links, made by Audioquest. The most common use is linking a CD transport to a digital-to-analogue converter. It is available in 1 metre and 2 metre lengths with conventional TOS-link connectors.

**OPTICAL LINK Z (1M) .....£69 (2M) .....£99**

**AUDIOQUEST QUARTZ INTERCONNECT CABLES**

A fully balanced analogue signal cable with heavy duty, gold plated phono plugs and advanced Quartz Hyperlitz cables using polypropylene insulation. The Quartz cable we have chosen from our own experience as a fine sounding type. It uses FPC-6 ultra-pure copper (99.99997%) and the plugs are welded.

**AUDIOQUEST QUARTZ CABLE (1METRE LENGTHS .....£79/PAIR (2METRE LENGTHS ...£120/PAIR**



## SWEATSHIRTS AND T-SHIRTS

A whole new range printed with "Hi-Fi World" and our slogan "The Magazine for enthusiasts" both front and back to prove to everybody you read probably the best hi-fi magazine in the universe. The sweatshirts and T-shirts come in white, grey, black and navy-blue in Large and Extra Large sizes; track-top one-size sweatshirts (with hoods).

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**T-SHIRTS ..... £7.99**

## RECORD STORAGE CUBE

This cube has been designed by us to hold roughly one hundred LPs. It has an internal width of 37cms. Internal height is 32.5cms and depth 32cms. The cubes can be stacked or placed alongside each other to increase storage - and they can even be used as seats!

Strongly made from 15mm medium density fibreboard (MDF), the panels are milled to have strong side joints. We have specified a durable black paint finish to give it a smart, yet unintrusive appearance. The screws are self-starting, but clearance holes are pre-drilled. It comes in a flat pack with screws and Allen key for easy home assembly.

**RECORD STORAGE CUBE ..... PRICE £42 EACH**

**FREE!**

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**50 RECORD SLEEVES WITH 4 CUBES**

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**FOR 8 CUBES, JUST PAY FOR SEVEN .... (£294)**

## CD CABINET

Designed to match the Record Storage Cube, in the same black finish. Made of strong 15mm MDF, the cabinets can be stacked on each other, or on top of our Record Cubes. 400mm long, 360mm high and 150mm deep, a central shelf allows up to seventy CDs or forty two cassettes to be stored with space above for fingers to pull them out. Supplied flat-packed with screws and Allen key for easy home assembly. Price includes postage and packing.

**CD CABINET ..... £29.95**

## A NEW RANGE!

### TDK CLEANING KITS

A comprehensive range of cleaning materials from TDK for cassette decks, Compact Discs and even connectors. There are two head cleaning kits. One, the CK-A1, includes two bottles of fluid of different compositions for the heads and the rubber pinch wheel,

and specially shaped cotton buds for applying it. The CK-TB pack has similar cotton buds but with a single bottle of dual-purpose liquid.

TDK offer three cleaning pens, about the size of marker pens, colour-coded to avoid mix-ups. Each has a soft double-ended replaceable shaped tip. The Audio Head Cleaning Pen is for cleaning cassette heads, the CD Cleaning Pen for removing finger marks

from CDs, and the AV Connector Cleaning Pen for polishing up audio plugs and sockets.

A neat little CD cleaning kit contains a bottle of specially developed fluid and a soft pink cloth which can be used for removing grime and stains. Finally, a dandy CD cleaning tool with two soft pads at either end of a blue holder, one for applying the cleaning fluid supplied, the other for drying the CD off afterwards. Both pads of the Wet and Dry CD Cleaner are replaceable.



**TDK HEAD CLEANING KIT CK-A1 ..... £5.50**  
**TDK HEAD CLEANING KIT CK-TB ..... £4.65**  
**TDK AUDIO HEAD CLEANING PEN CP-AH1 ..... £5.00**  
**TDK CD CLEANING PEN CP-CD1 ..... £5.00**  
**TDK A/V CONNECTOR CLEANING PEN CP-CR1 .. £5.00**  
**TDK CD CLOTH CLEANING KIT CD-C2TP ..... £6.50**  
**TDK WET AND DRY CD CLEANER CD C1TB ..... £8.75**





**ELEMENTS OF ELECTRONICS  
Book 6**

**'Audio' by F.A. Wilson.**  
Bernard Babani Books BP111 £3.95.

F.A. Wilson's Elements of Electronics series of paperbacks are designed to give a broad-based introduction to the field of electronics. The first three books in the series overview the fundamentals of electronic theory; others - 'Microprocessor Systems and Circuits', 'Communication' and 'Audio' - cover specialist topics of interest to the enthusiast.

The last two books hold the most interest for the hi-fi buff with a soldering iron and a death wish, although the circuitry used in Compact Disc players and some of the latest amplifiers has more in common with the microcomputer than ever before.

Although each of the books can be treated as a separate entity, 'Audio' does assume a modicum of electronics theory and I would suggest that the first three books in the series be used as a foundation, to learn not only the theory, but the style of teaching itself.

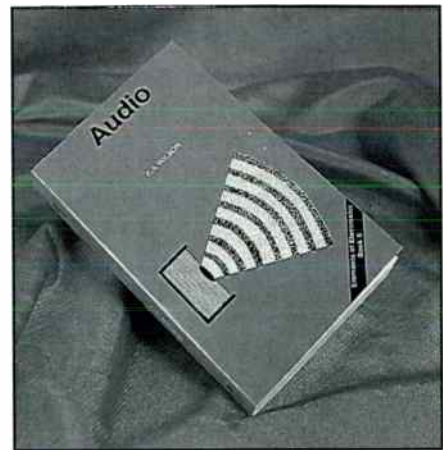
The volume is informative and concise, covering most aspects of the audio spectrum. I say most areas because in fast-moving areas such as digital recording, it still remains a little behind the times, suggesting that digital audio is relatively uncommon. 'Audio' was first

published in 1985 and has had no revisions since; in the last seven years, the world of audio has drastically changed, with CD becoming the dominant medium.

That aside, F. A. Wilson gives a basic grounding in most of the topics needed for the hi-fi enthusiast. The book begins with sound itself, starting with the sound wave and the human ear. This chapter closes with a discussion of stereophony, how stereo is created and how we measure the sound. Chapter 4 looks at the acoustics of the room itself - it does not make any suggestions how to improve the room acoustics, but describes the effects of resonance and reverberation from a more theoretical standpoint.

From here on, the book begins to get electric. It covers microphones, loudspeakers and most other transducers. Next comes amplification, recording and then the process of making music itself. Finally, the two appendices cover, in brief, mechanics and complex waveform analyses such as Fourier equations.

Trying to cram the full potted audio syllabus into a 300 page book means that it only tentatively dips its toes into the meatier subjects. It also reads like a revision book; covering some subjects so briefly and lightly that further reading is useful to obtain a full understanding of the topic.



**Fired with do-it-yourself enthusiasm, having built a loudspeaker all by himself, Alan Sircom learns some basic electronics.**

As a textbook, 'Audio' by F.A. Wilson is useful for the interested enthusiast who knows little about the mechanics of audio and wishes to expand his or her knowledge of the subject. It is not a quick, easy read, but time spent studying the book pays dividends in the long run.

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**A question: which do you  
 imagine would sound  
 better, a month-old U2  
 album or a forty-year old  
 recording of Lightnin'  
 Hopkins? Malcolm Steward  
 is taking bets...**

*malcolm  
 steward*



**U2  
 Achtung Baby**  
 ISLAND U28 (Available on LP)

● I always think of U2 as Bono, The Edge, and the other two. That shows just what a load of rubbish the adage "what's in a name" is. Had Bono remained Paul Hewson, and The Edge still been called Dave Evans, I'd surely forget their names too. Except, of course, when they bring out a new album. Nowadays the arrival of a new U2 platter signals promotional activity with a capital A. Record shop owners must sleep with a photo of Dublin's finest at the side of their bed.

I wouldn't go so far as to call myself a great fan of U2 but their most recent albums both contained a few tracks that I liked. I particularly enjoyed the collaboration with B.B. King on the Rattle and Hum LP. My restrained enthusiasm clearly isn't typical - the rest of the world obviously adores them. The film Rattle and Hum was the second biggest grossing movie in the USA and Canada during its first weekend, and the previous LP The Joshua Tree had sold over 14 million copies worldwide and topped the charts in 22 countries. When the band played a televised New Year's Eve show in Dublin to mark the start of the new decade an estimated 500 million people tuned in. Nobody told me it was on: I went to the pub instead.

Despite a couple of appealing tracks, Achtung Baby, the band's first LP for the nineties, did little for me. "Mysterious Ways" sounds like it could be good but to be honest it sounds better on the TV than on a decent hi-fi system. And that's sadly true of the rest of the album in whose grooves, I suspect, there's a lot more happening than you'll ever get to hear.

Its production is by Daniel Lanois and Brian Eno who've given plenty of flange to that digital delay, when they weren't busy echoplexing the reverb, or harmonising the chorus on the phase pedal. Ever wondered what a rock band sounds like playing in a swimming pool full of treacle? Ask Dan and Brian. Wotsisname's bass flounders and grumbles, the other bloke's drums have chocolate skins. The Edge's guitar hasn't got anything like an edge to it, and Bono sounds like he's crossed over to the great echo chamber in the sky. The first words that cross your mind when describing the sound of this album aren't "immediate" or "punchy." I never thought I'd see the day when I wished that Mark Knopfler had produced an album. Ron Kavana was so right when he opined that "advanced" technology was dragging Irish music down, taking away its spirit and fire. I'll bet the demo tapes of this album are red hot: I'd love to hear an eight-track or Portastudio recording of "Zoo Station". As it stands Achtung Baby could have been produced more successfully in a garage with no more than a drum machine, a DX-7 and an Atari computer providing the backing. Bono could have recorded the vocals from the shed at the end of the garden - without a microphone.

You want proof that technology sucks? Here it is.







**SWAMP DOGG**  
**Total Destruction Of Your Mind/Rat On**  
 CHARLY R&B CD CHARLY 301

● The world is full of one-offs. Here's another of those manic, odd-ball, screwy, utterly uncompromised individuals who make up that category for which we should be eternally thankful: if there were fewer characters like Little Jerry, Jerry Williams, Jerry Williams Jr. (a.k.a. Swamp Dogg) the world of music would be a duller, more mundane, and less inspiring place in which to hang out. The world needs people who don't or won't fit in.

This Charly Records re-release brings together the 1970 "Total Destruction," and 1971 "Rat On" albums. They showcase a man who had, during the sixties, enjoyed a moderately successful if inconsistent career as a soul singer and producer then known as Jerry Williams. In 1970 he became the chief producer for Canyon Records, whose owner suggested that he should stretch himself musically. Williams became Swamp Dogg, effectively stuck two fingers up to the stereotyping and everything else he despised and disapproved of, got firmly into doing what was purely his own, unique thing. He decided that he didn't want to be "a Jackie Wilson or Ben E. King prototype. I wanted to sing about women, politics, screwing, television, syphilis and anything else pertinent..." "Total Destruction" was the result, a psychedelic soul outing that owed as much to The Mothers of Invention as it did to Sly Stone.

The recording's not wonderful but the performances are. He's heard at his best on songs like "God Bless America For What", "Synthetic World", and the anti-racist "Red-neck". The first of these brought him notoriety: the Irving Berlin Foundation reckoned the song was un-American and sued him. His label, Elektra, dropped him as a result, also partly influenced by his involvement with the FTA anti-Vietnam movement. The FBI monitored him, even bugging his phone. "I was everything Elektra didn't want: anti-war, pro-black, a

peace movement participant. . . and I designed the album cover with me mounted on the back of a smiling rat, symbolising the black man getting a ride for a change . . . I definitely wasn't winning any popularity contest there."

With hindsight it seems like Elektra's loss.



**MOUTH MUSIC (Talitha Mackenzie & Martin Swan)**  
**Mouth Music**

TRIPLE EARTH terracd 109 (Available on LP)

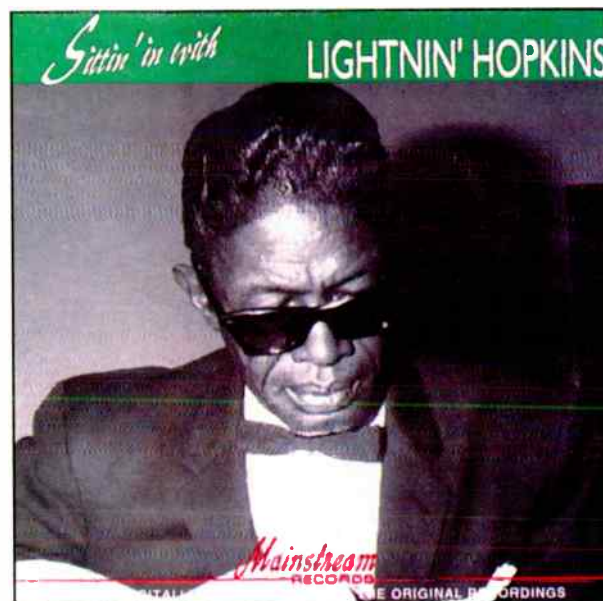
● This month's winner in the and-now-for-something-completely-different category was sent to me by Charlie Brennan of hi-fi distributors Pear Audio. Charlie was formerly one of the higher-ups at Linn products, a company whose excellence in turntable manufacture is only eclipsed by the magnitude of its sporadic bouts of appalling taste in music. Anyone remember the house band's albums of songs to slash your wrists by?

Sailing away from the Blue Nile to a life of independence appears to have been a good move for Charlie if his taste in music is anything by which to judge: Mouth Music is a staggering album. I don't understand a word of Gaelic yet that hasn't diminished this record's appeal one iota. Didn't I mention that it was in Gaelic? Puirt a beul (mouth music) is a style of Gaelic vocal music intended for dancing, it says on the disc's sleeve. Once you've realised this the problem then becomes working out just how Gaels dance: Bratach Bana, the song which opens the album, isn't my idea of a disco hit, although I have to admit that Co Ni Mire Rium which follows has a better beat for a bit of rug-cutting.

Talitha Mackenzie is the distinctive mouth half of the duo responsible for this disc, with Martin Swan providing the music on a variety of traditional and contemporary instruments and all the arrangements. The recording is exquisite and brings out the varied palette of instrumental texture and colour employed. Even if you don't feel at home with the music - which I

doubt will be the case if you've got a half-way receptive mind - you'll enjoy the breadth of sounds you'll witness here, which range from silken keyboard washes to drum patterns and bass lines which would-be funk-stars will no doubt be sampling gleefully.

Favourite tracks? For sheer beauty, the atmospheric "Fraoch A Ronaigh" where the vocal was recorded in a reverberant stairwell in Edinburgh's College of Art lending the music a devout, worshipful character. For sheer speaker-cone-flapping impressiveness - the kind of track you play to give listeners involuntary bowel movements - try "Martin Martin". Have the tissues ready before the stylus has spent fifty seconds in the groove.



**LIGHTNIN' HOPKINS**  
**Sittin' in with Lightnin' Hopkins**

MAINSTREAM RECORDS MDCD 905

● If you consider yourself a fan of the blues then Sam (Lightnin') Hopkins will need no introduction. If you're not, perhaps just getting interested in the genre, then Lightnin' Hopkins' records should be near the top of your shopping list. The Texas-born singer/guitarist who died in 1982 was a premier exponent of the music, a gifted improviser whose playing came not from textbooks but straight from the heart. Many recordings exist of his laconic, unforced style but this new release is a worthy addition to the catalogue.

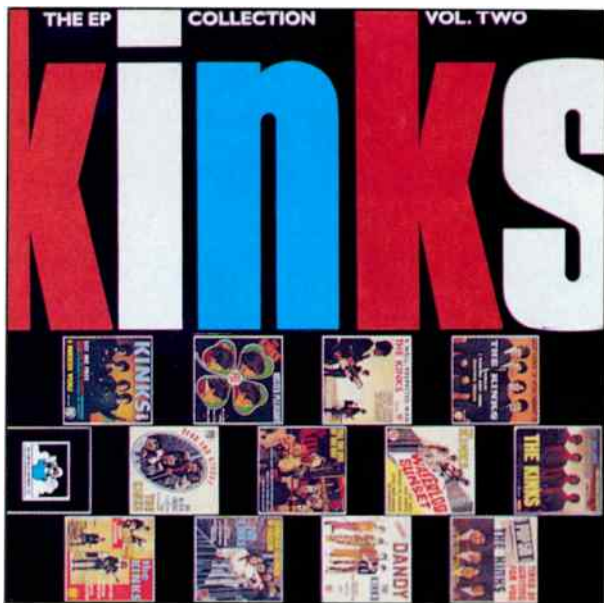
The Sittin' In With label started in 1948 and continued to become a leading independent in the blues, gospel and jazz field. Its recordings were made on location in the southern states of the U.S.A. in clubs, hotel rooms, churches, studios and even a brothel.

This compilation of seventeen



tracks from such sessions (around 1950) captures the spirit of Hopkins' playing marvellously. Loosely structured and joyously free'n'easy, this is a testament to recording live. The sleeve notes indicate that Hopkins wasn't interested in the business of signing recording contracts and formal recording sessions. The approach seemed to be that you stuck a microphone in front of him when he was on a roll and that was your performance. There were no second takes - he made up many of his lyrics as he went along and couldn't repeat a song if asked.

There's a marvellous feeling of spontaneity about the music on this CD. Listen to tracks like "Tap Dance Boogie", where Hopkins taps with bottle-tops fixed to his heels whilst he plays and narrates. Absolutely sublime. And the quality of these forty-year old cuts is magnificent: ignore the tape hiss and revel in the immediacy of Hopkins' guitar and voice. All records should be this communicative and this exciting.



**THE KINKS**  
**The EP Collection Vol. Two**  
**SEE FOR MILES SEECD 329**

● I normally rail against repackaged collections of old material on Compact Disc: for the most part I tend to agree with John Peel's notion that it's a case of the record companies selling us something we already own but this time at an inflated price. That's a pretty cynical view but often it's quite appropriate. There are, however, odd occasions when I feel more generously disposed. This disc represents one of those instances.

Although much of the material on this disc will be familiar it has been culled not from UK-released EPs but from those released in France, giving access, according to the liner notes "to yet more Kink Klassics . . . and

several rare performances." Not that anyone but a Kinks completist would know, I'd imagine. The songs here date back to between 1964 and 1967: I can't remember back as far as last week let alone 27 years ago!

The disc is an effective reminder of what a particularly capable and distinguished songwriter the band had in Ray Davies. Sure, some of the songs sound dated now but that doesn't make them redundant or any the less enjoyable. All of the original material on this collection (23 of the 28 tracks) has weathered well, which is more than you can say for the vast majority of its peer group. Some of it is absolutely timeless - "Tired Of Waiting For You" with its classically simple chord progression and opening arpeggios, "Waterloo Sunset" and "Sunny Afternoon" with their stirring descending riffs, "I Need You" with its trademark clipped rhythm guitar.

The Kinks were quintessentially English and that was, for me, a large part of their eccentric charm. Even when they launch into Chuck Berry's "Beautiful Delilah" or Tommy Tucker's "Long Tall Shorty" there are no cod-American affectations evident. Diverse influences abound on this compilation but throughout the music is unmistakably that of the splendidly individual Kinks, and the Kinks alone.

The only problem with this album is that it makes you slip into middle-aged mode and start bemoaning the fact that "they don't write songs like that any more." That's not pure nostalgia, it's a fact. When did you last hear a song as memorable as "Waterloo Sunset"?



**SPANIC BOYS**  
**Strange World**  
**ROUNDER RECORDS NETCD27**

● The Spanic Boys is a bit of a misnomer. Spanic is the family name but the boys are in fact a father and son team. They front a band in the classic rock and roll tradition; Tom, the father, sings and plays loud guitar and acoustic guitar while the son, Ian, also sings, plays louder guitar, bajo sexto, acoustic and twelve-string guitar, and guitar that doesn't sound like guitar.

Curt Lefevre's drums and Mike Fredrickson's Hofner bass complete the four-piece line-up.

It's not just the band's composition which is classic, the music is too. There's no pomp, pretension or progressiveness getting in the way of the Spanics' fundamentalist groove which harks back to the simplicity and straightforward approach of American rock's founding fathers like Chuck Berry and Buddy Holly. Don't imagine, however, that *Strange World* is a retro-feast, a pastiche or some nostalgic trip to way back when naivety ruled OK. This album is wholly contemporary: even the oh-so-familiar twelve-bar shuffle and close-harmony vocal arrangement of "Face The Facts", strongly reminiscent of a million and one Everly Brothers' songs, sounds as fresh as paint.

More respectful than derivative, the Spanic Boys are a worthy addition to Rounder Record's impressive roster of rootsy, down home realisations of the American dream, typifying the Webb Wilder ethic of working hard, playing hard, and wearing glasses if your ophthalmic surgeon says that you need them.



**VARIOUS ARTISTS**  
**The Young Flamencos**  
**HANNIBAL HNCD1370**

● Do you ever have mornings when nothing will galvanise you into action? What you need is a rapid injection of flamenco, a blast of gypsy spirit to clear the cobwebs. Here's just the disc to slip into the CD player when your brain and body need a kick start. You don't even need to think about what you're doing: slip the disc into the drawer, hit the play button and, seconds later, Pata Negra's "Yo me que quedro en Sevilla" will explode from the stereo. If this fiery, adrenalin-charged number doesn't put a smile on your face and a spring in your step, consider reducing your daily intake of Valium.

Or you could make a second attempt: skip to track 15 and hear the same band's more widely-known "Blues de la Frontera", the acoustic guitar equivalent of a fire-work display



taking place in your living room. Or track 18, described in the liner notes as "a live 8-minute acoustic punkfunk-flamenco instrumental which shows how free flamenco can get", which ably demonstrates how measured and considered a guitarist can be whilst riding an improvisational roller-coaster.

This disc gives you a taste of traditional flamenco tempered by the evolutionary influences of its current crop of young practitioners. What links all of the performers you'll hear on this eighteen-track compilation is an ability for self-expression that's rarely found in mainstream music. Whilst their playing is extraordinarily proficient and technically accomplished what shines through is their "duende", a passionate and emotional

commitment to the feeling of the music, which transmits effortlessly to the listener. If you've got a ha'porth of soul this music will get to you: you won't be able to listen to it dispassionately, you'll want to get involved in it. Tell the neighbours to ignore any shouts of "Ole" that they might hear.

If this sounds far too romantic and undignified for your reserved British nature you might be surprised to discover that amongst all the hot-blooded Spanish players on this album there lurks a pillar of the UK folk and jazz scenes. Danny Thompson plays bass on "Caramelo" with Ketama who are also joined by Kora player Toumani Diabate. Now if Pentangle's former bass-plucker can party in this company there's no reason why you shouldn't join in too!

## RECORD OF THE MONTH

**STEVIE RAY VAUGHAN**  
**The Sky Is Crying**  
EPIC 468640 1 (Available on LP)

★ Stevie Ray Vaughan, one of the most widely admired and acknowledged blues guitarists of recent years died in August 1990. After overcoming drink and drug problems Vaughan lost his life in a tragic accident: the helicopter transporting him to Chicago after a concert crashed into a man-made ski-slope in dense fog.



# STEVIE RAY VAUGHAN and Double Trouble

This album was put together by his brother, Jimmie, from ten completed studio tracks by Stevie and his band Double Trouble, recorded between 1984's "Couldn't Stand The Weather" and "In Step" from 1989. Only one of the tracks had appeared on any of the groups' albums - and then in a different form - although many were part of the live repertoire.

Don't imagine, however, that this means that the material is sub-standard: Stevie Ray Vaughan frequently ended sessions in the studio with too many good tracks to squeeze onto one album.

The recording is good and the performances are charged - unlike those on many an artist's posthumous albums. There's not a weak track or a single filler to be seen. One or two stood out for me though as absolutely prime cuts: the version of Hendrix' "Little Wing" really cooks, and the cover of jazz guitarist Kenny Burrell's "Chitlins

Con Carne" is a delightful and tasteful piece of playing, which demonstrates Vaughan's ability to get his message across no matter what the medium. This track doesn't sound like a blues/rock player dabbling with the jazz genre, the musicianship displays real conviction.

The album closes with an acoustic track, "Life By The Drop", where SRV picks up a twelve-string - the first time he'd played an acoustic guitar for a recorded session - and sings a song about addiction. It's a poignant way to end the album and the song provides a forceful reminder that Stevie wasn't only a talented guitarist, he could sing with passion too.

**This month, a hard-hitting Indie band, some spicy Chili Peppers from the States, a Fan Club with an edge and a surprise reappearance of a Stone.**

# *giovanni dadomo*

**RED HOT CHILI PEPPERS  
Blood, Sugar, Sex, Magic  
WARNER BROS 7599 26681-2**

● The Chilis have been a steadily growing presence on the US Indie scene for at least half a decade now, but the average British fan probably only made first contact by way of last year's chart-nuzzling and totally rambunctious cover of Stevie Wonder's 'Higher Ground', with its wild and woolly accompanying video-clip. Whatever, this, their latest long-player - a double, no less - is easily their best album to date, and deserves to give them the broader audience their talents so manifestly deserve.

Their music - like the band's collection of wildly eclectic and predominantly brilliant tattoos (see packaging for ample photographic record of same) is a richly eclectic mix of sources and resources.

Their major influences appear to be in late 60's power trios, most notably Cream and the Jimi Hendrix Experience, alongside a more general immersion in the entire history of funk. It's this latter infusion - The Meters, James Brown, Sly Stone etc. etc.- which gives them both their impeccably taut rhythmic drive as well as the taut discipline those late 60's masters so frequently lost in their tendency towards jazz-influenced and yawn-provoking extended jamming. In other words the Chilis don't waste a note, and the result's a collection rich in both texture and imaginative strength as well as one that's numerically plentiful in the sheer number of tunes they provide.

From the opening 'The Power of

Equality' through to the seventeenth - and typically powerful - cut a sizzling, thunderstruck, typically good-humoured interpretation of blues master Robert Johnson's 'Red Hot', the record's an immaculately played and sung lesson in how to put a class A long-player together. There are no spare tyres or excesses of any sort; the singing and playing bear easy comparison to any of the aforementioned influences with the single exception of Hendrix himself. But then he can't be topped, and the Chilis, give them their dues, don't even try. This said, the musicianship is of the highest calibre, but if kudos are to be given, they ought to go to the drums, which are both uniformly brilliant (rim-shots to die for!) as well as continually surprising in their inventiveness and sheer energy of imagination. Hear, for example, the juddering, perspiration-soaked sexiness of 'Suck My Kiss', a brief, bowstring-taut teaser-pleaser that sums up this band's brilliant marriage of old and new with totally distinctive results.



**TEENAGE FANCLUB  
Bandwagonesque  
CREATION RECORDS CRE CD106**

● The cover of these UK popsters' second long-player - screaming yellow on hysterical pink - is a money-bag adorned with a big Dollar-sign - a statement of intent, or what? Maybe. This is close-harmony UK pop out of classic Merseybeat, albeit with a tinge of mid-Atlantic accent, with its inevitable echoes of a whole tradition of American pop. Let's face it, the Yanks have been trying to come up with their own version of the Moptops since Beat Boom Year One (circa 1962, kiddies) with results ranging from the ridiculous - The Monkees, Knickerbockers, Raspberries, latterday Flamin' Groovies etc. - to the sublime: Big Star, Dwight Twilley, etc. etc. Of course, all these groups had their moments, and some have aged better than others, blah-di-blah.

And it's by no means just an American phenomenon, witness only such disparate Beatle-followers as

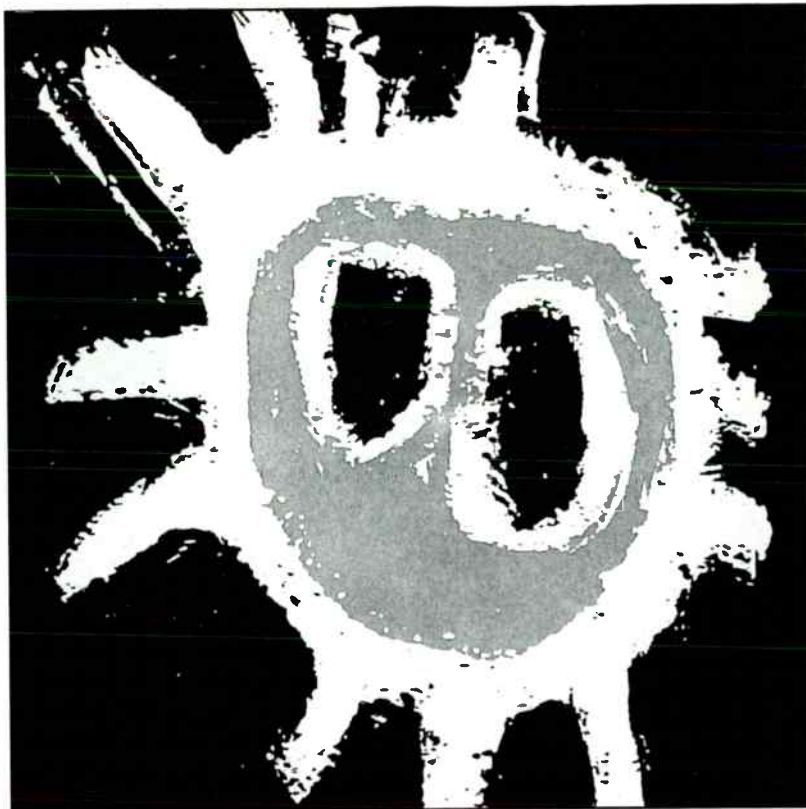


early Bee Gees or Great Lost Hopes like the wonderful (not to mention totally Canadian, now totally forgotten also) Reggie Knighton, or even our very own and very delightful La's, whose very fetching debut album is a mere year old and has the added distinction of being the work of young Scousers born and bred.

If Teenage Fan Club are different than most it's because although their melodies are catchy fun, simple both in structure and arrangement, their words have a welcome cynical edge that's totally Nineties. Imagine the early Beatles - let alone any of their immediate or even latterday followers - singing about girls who got to buy tickets for the (sic) Status Quo, who don't take drugs but are still on the pill. This harder, more knowing edge even spills over into the music from time to time, with the result that the band resemble nobody so much as those malevolent Celts The Jesus and Mary Chain, who - any fule know - are anything but Macca-sweet. There are some crackers in this set, and it's no surprise to find that they're the very songs where the Merseybeat influence is at its strongest, notably the wonderfully acidic 'Metal Baby' or 'What You Do To Me'. These are very much the sort of songs that took America (not to mention the rest of the planet) by storm a mere 25 years ago and could easily do so again. Without the assistance of a few hit singles however, it's hard to imagine Teenage Fan Club being around in ten years' time. Wait and see.

### **FUGAZI** **Steady Diet Of Nothing** **DISCHORD RECORDS DIS60**

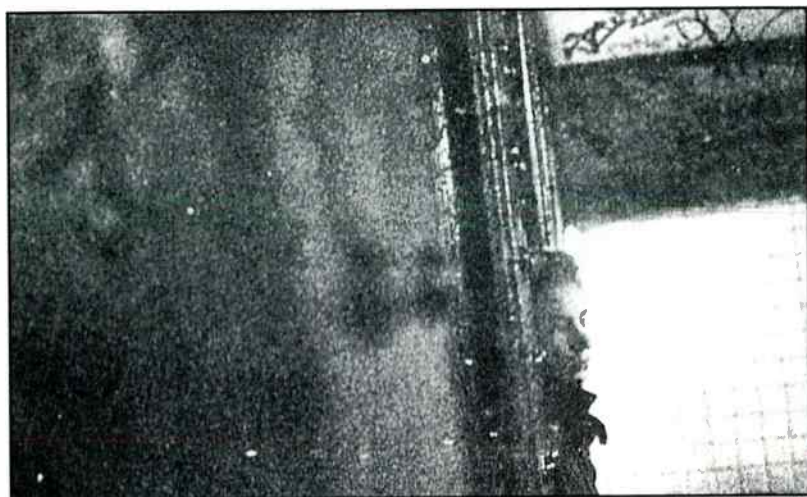
● Fugazi are long-term Indie heroes of US origin, and that their hearts are definitely in the right place is easily witnessed by the way they keep both their concert prices and the cost of their records (the cassette version of 'Steady Diet...' is under six quid from most retailers, for example) as low as possible. All this makes one wonder



why they can do it and why guaranteed big sellers - what price U2 or Genesis, say? - can't. They're a rock band pure and simple, classic line-up, short, crisp songs, with a concerned edge and plenty of musical/lyrical bite. Their singer reminds me of both the late Alex Harvey and the (equally late) Bon Scott, and the music too is a heady marriage of punk and metal. I'm a wild and crazy fan of the brilliantly tense 'Exit Only', and that's just the opening cut of this majestically exciting selection of hard-hitting songlets. And at these prices virtually no consumer has the excuse of being unable to make up their own mind. I mean, what the hell do us crits know about music. Trust your own ears, but these boys - take a cretin's advice - deserve a hearing.

### **PRIMAL SCREAM** **Screamadelica** **CREATION CRECD 076**

● The sort of lazy, stoned sensuality conjured up by this new Primal Scream album hasn't been around since the Stones circa 'Let It Bleed' - and, surprise, surprise! - who should turn up as producer but vintage Mick'n Keef helmsman Jimmy Miller. 'Twas he, no less, who helped turn the steamy, gospel-flavoured sensuality of 'Movin' On Up' into a minor hit. It's featured here, among other delights such as a superbly wacky cover of 13th Floor Elevators' 'Slip Inside This House', and the immaculately stoned - not to mention tellingly titled - 'Higher Than The Sun'. One thing that worries this old reviewer is this: what price such deliberate recreations of an age long past, no matter how splendidly done? About a quarter of this is pretty heavenly hot stuff. But on the other hand it really has all been done before. I doubt if anyone who treasures 'Let It Bleed' will find 'Screamadelica' just as fetching in a quarter of a century's time. Fun maybe, but for quite how long? I suppose it all depends how old you are, but a lot of this stuff - no matter how temporarily distracting - is decidedly old hat (for new heads?). Ho hum.



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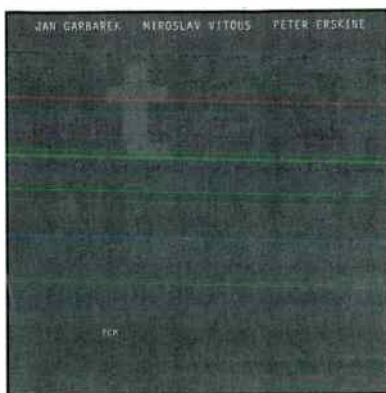
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**JAN GARBAREK/  
MIROSLAV VITOUS/PETER  
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**Star**

**ECM 849 649-2 (CD/MC/LP)**

● For an indecently long time now, something like twenty years or so, the Norwegian tenor and soprano saxophonist and sometime flautist Jan Garbarek has been arguably *the* voice of European jazz. His own records, released almost exclusively for the German label ECM (of which more later), have steered a treacherous course between post-Coltraneish jazz and Nordic-sounding folk, and have, in stripping jazz of pretty much any element of blues, fashioned a uniquely European version of the music. The resulting asceticism of much of his output has polarized listeners into those overwhelmed by its sensuousness and those left stone cold by it.

In the absence of a Garbarek-led project since last year's group recording "I Took Up The Runes" (ECM), "Star" is essential for those in the former camp, and as good a jumping-on point as any for the uninitiated. In fact, the session is billed as a three-way collaboration, with each of the musicians taking a share of the writing credits. Although you wouldn't guess from this all-acoustic date, bassist Vitous and drummer Erskine are both former members, albeit from different periods, of the American fusion supergroup Weather Report. Erskine was in the lineup famous for its pop crossover hit "Birdland". Which is about a million miles from this stuff.

This particular trio has remained unrecorded thus far, and listening to "Star" one is left asking why. The set opens with the Garbarek-penned title track, a typically plangent saxophone melody hung over a delicate rubato backing, but the mood changes swiftly with the opening bars of Vitous' "Jumper", a delightfully wonky jazz piece that recalls Dewey Redman, or perhaps even Ornette Coleman. And from there on out the scene is set: a series of pieces veering from up-tempo jams to the sort of ballads Garbarek's famous for. And the balance, both of the musical styles

and of the instrumental resources, works perfectly. Always slightly at odds with Weather Report's rockist settings, Erskine's drumming is so fluid that it sits perfectly with Garbarek's shifting solos, and Vitous' bass underpins the whole while never weighing it down.

And a brief word about *that* sound. It is the hallmark of the German producer Manfred Eicher's ECM label, a production which often has the most rudimentary of line-ups (take this one: sax-bass-drums) sounding like they're at the bottom of some fjord. It's a sound not to everyone's taste but it never works better than with Garbarek, and I challenge anyone not to feel moved by the sheer ambience of this record. Every audiophile should own at least one ECM record; if you don't already, then treat yourself to this one.

**ELENI KARAINDRU**  
**Music for Films**

**ECM 847 609-2 (CD/MC/LP)**

● A quick mention for a release that's almost in the jazz section by default. The Greek composer Karaindrou has had a ten-year collaboration with one of her country's most famous film-makers, Theo Angelopoulos. His long, slow, but undeniably beautiful films, which have been compared to both those of Tarkovsky and Wim Wenders, have provided the perfect environment for Karaindrou's elegaic compositions. For this disc she has arranged a set of her pieces for a

**In response to numerous requests from readers for more on jazz, Simon Hopkins (no relation to Lightnin' he says) joins the reviewing team. He finds Jan Garbarek and two ex-Weather Report members in the Norwegian Fjords and a musical kleptomaniac in New York. Meanwhile, the Music Editor takes a little time off from the hardware to listen to the last Miles Davis album.**

*simon  
hopkins*



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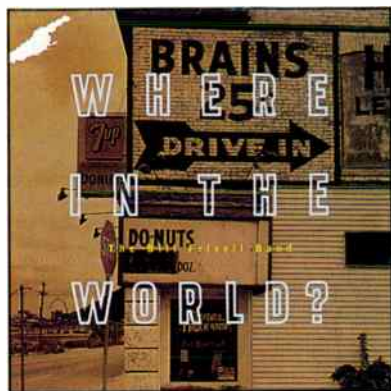
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small ensemble which includes strings, accordion, santouri (a Greek dulcimer), and tenor saxophone, played by the ubiquitous Garbarek. A lovely record, if a little difficult to pigeon-hole, and another great context for Garbarek.



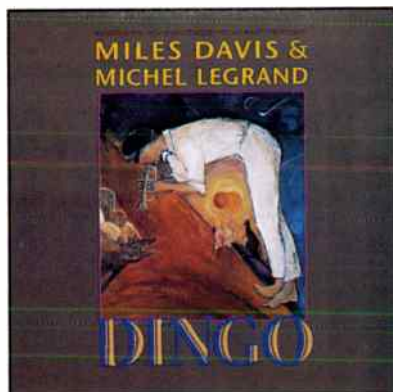
**THE BILL FRISELL BAND**  
**Where in the World?**  
 ELEKTRA/NONESUCH 7559/6181-2  
 (CD/MC)

● The American guitarist Bill Frisell first came to this reviewer's attention, as it happens, as a member of Jan Garbarek's early 80s group. Connections, connections. And it was obvious even then that a major talent was emerging. Frisell's one of those guitarists whose playing is recognizable in a single note, which is saying something on a planet where there are possibly more guitars than human beings. A combination of reverb-swamped post-Hendrix screaming solos and oddly voiced chords swelling out of nowhere have led to a legion of Frisell-clones within just a few years, but what emerges here on his third Elektra album (his first three were on ECM, somewhat inevitably) is that his undoubted prowess as a guitarist is matched by his increasing confidence as a composer.

Composer? Is this a jazz record then, or what? Well, there's the rub really. Frisell is just one, albeit a major one, of a group of largely New York-based jazz musicians who have rejected the whole notion of the melody-solos-melody structure which has held sway over thirty-odd years of jazz. In its place they've invented a music with a defiantly kleptomaniac tendency, nicking from whatever idiom comes to hand, and freely mixing improvisation with composed music. On "Where In The World?" we hear Country and Western, lounge-bar jazz, King Crimson like-dirges, early rock'n'roll, and a whole bunch more. Not that you'd necessarily notice. For where alto saxist/composer John Zorn (Frisell's boss in the group Naked City) delights in the frisson of dramatic jump cuts between genres, Frisell blends styles so

seamlessly that a blues shuffle can underpin a fractured, dissonant cello melody, and it sounds as natural as Miles playing "Green Dolphin Street".

Mind you, having a band like this probably helps. This line-up (Frisell, cellist Hank Roberts, bass guitarist Kermit Driscoll and drummer Joey Baron) was first heard on "Lookout For Hope" in 1987 and has made a couple of visits to these shores, but this is its first Elektra session and is undoubtedly the best record Frisell's turned in for the American label. Roberts' cello can sound by turns anguished (the opening song "Unsung Heroes"), and manically happy ("Smilin' Jones") and Driscoll's bass-playing is melodically lop-sided even when the band are at their most straight ahead. But it's the drumming of Joey Baron (another Naked City cohort) which steals the show on many of these cuts; Baron uses the entirety of the drum kit, stands, rims and all, in a constantly restless way that often recalls Ry Cooder's long-time sidekick Jim Keltner. "Is That You?" asked the title of Frisell's previous Elektra release; "Where In The World?" asks this; the question "Whither Jazz?" is given a substantial answer by this extraordinary band.



**MILES DAVIS & MICHEL LEGRAND**  
**Dingo**  
 Warner 26438-2 (CD/MC)

● This latest release - only a matter of weeks after Miles Davis' death - is a soundtrack, obvious from the first haunting bars of the theme. Played on trumpet by Chuck Findley first time around, and taken up later by "Billy Cross" (aka Miles Davis) it is by Michel Legrand. In France an unassuming, quiet figure, people on this side of the Channel will know his style from the theme to The Thomas Crown Affair. If that doesn't ring bells, then "In the windmills of your mind" should, for those were the words put to the tune. In a way it is appropriate the two should share this valedictory album; Davis was a sidesman for Legrand, then with a band, in Paris in the Fifties.

The gentle swing of Legrand's theme gives way to Miles' theatre almost immediately; sharper and swingier, even if this is not Miles at full stretch. It's track seven before the old smoky sulky trumpet hits hard, followed almost immediately by the theme, returning in "The Dream". So different this time, the brass cracks with an almost speaking voice. There is that same sombre and sonorous tone that uttered out of that bell back in the sixties. A little later, there's classic late-night Miles, bright, sparky in full control in "Paris Walking II." There is not a lot of wit or humour - Davis not especially noted for either - and he is coolly in control. More swing than sting, and that mannered playing that ices over emotion.

Back in 1968, Philip Larkin, Librarian, Poet and Jazz Critic for the Daily Telegraph wrote, after hearing Back to Back, that he was surprised that Davis' "strong theatrical streak" had not been more exploited. "The listener gets a strong impression of the cafes and wet streets and suspenseful moments and rushes down the Routes Nationales that make up every French film." He hadn't seen that one, and no more have I seen this, but by the last Davis track (15) I know what he means.

Disregard the filmatic Jam Session with Chuck Findley, tight and sharp as it is, complete with a smattering of boos from the extras at the end. The last of his eight tracks repeats that lugubrious theme with the sort of plangency and sombre and magniloquent tone barely heard since his solos of the sixties. There is optimism and gentleness in the trumpet on that track, a reminder of Davis' style in Aura, as earlier ones are reminiscent of the ballad style Davis said years ago he would never go back to. Stop there: the final track, "Surprise" no doubt completes the soundtrack for the ones who know the story, but it's absurd after that.

This may not be the one you will want to remember Miles Davis by, but he was a trumpeter with a very visual sense of what the notes could look like, almost, as they came out of the bell, and the touches of genuine theatre are worth it. Twenty-eight years ago he told an interviewer "I usually don't buy jazz records, they make me tired and depressed." There is still enough vintage Miles in this not to tire - but it is hard to avoid sadness that the last we will see of him, apart from a late filmed concert in Paris, will have to be on the Cinema screen. If we get the chance: the Rolf de Heer Australian co-production with Cine Cinq will be released in France, but there seem not to be firm plans to put it on the cinema circuit here.

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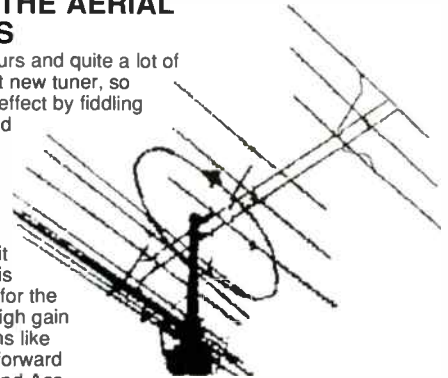
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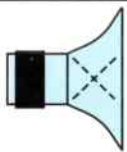
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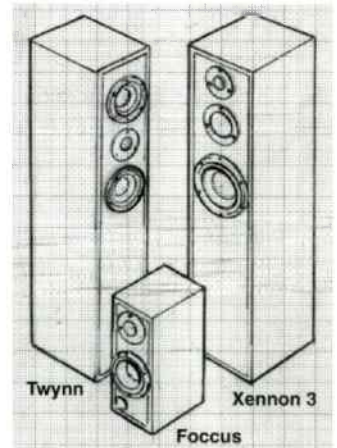
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Anyone interpreting the music of Benjamin Britten faces more of a challenge than most. It stems from the fact that Britten was not only one of the most significant composers of this century, but also a very fine musician in his own right. Very few composers make good conductors of their own music; it is, after all, a very different discipline. Two that could get the best from an orchestra were Britten's compatriots Elgar and Vaughan Williams but here, of course, later interpreters, if found musically wanting, always had the benefit of superior sound quality.

With Britten's recordings for Decca (and, to a lesser extent, those of Igor Stravinsky for CBS) that superiority cannot be taken for granted. Britten's stereo recordings, made under the auspices of such enlightened producers as John Culshaw and Erik Smith and engineered by such masters of the art as Kenneth Wilkinson, Gordon Parry and Stan Goodall, made a major contribution to what has come to be regarded as something of a "golden age" for sound. The best of the Britten tapes from the 'fifties and 'sixties concede little if anything to their latter-day competitors. Listen to the Young Person's Guide, or to Peter Grimes or Curlew River.

As a result, some of the composer's own recordings have gone almost unchallenged in the intervening years: Billy Budd, The Prodigal Son and, until 1983 when Simon Rattle's version appeared, the War Requiem.

Britten was a committed pacifist and the War Requiem represents his most uncompromising expression of that conviction. Essentially, it is a choral symphony, a bold - even brave - attempt to combine a personal experience of war (the poems of Wilfred Owen, himself killed on the Western Front in 1918) with the ritual of death as enshrined in the Latin Requiem Mass. For many, the synthesis is simply too ambitious and I confess that, for some time, I too believed that Owen's words had sufficient impact in their own right not to need the embellishments of choirs, organ and a vast orchestra. Then I heard the work performed live for the first time - in the Albert Hall many years ago - and was gripped by it. After that, purchase of the LP set, with its sombre black cover, was compulsory.

Britten recorded that set in 1963, soon after the work was premiered in the new Coventry Cathedral (the earlier cathedral was, of course, destroyed when the Luftwaffe blitzed the city twenty years earlier). Above all, he saw the War Requiem as music of reconciliation which is why that first recording quite deliberately uses soloists from the three main European Protagonists in the two world Wars: the Russian soprano, Galina Vishnevskaya; the German baritone, Dietrich Fischer-Dieskau and the British tenor, Peter Pears.

Although it remains a treasurable

recording, that 1963 set has fared less well than most of Britten's other Decca tapings in its CD transfer; the hiss level is unusually high. The choice on CD, therefore, was confined to Rattle and the CBSO on EMI, until recently that is, when the versatile Richard Hickox turned his attention to the score.

**BENJAMIN BRITTEN  
War Requiem Op66; Sinfonia  
da Requiem Op20; Ballad of  
Heroes Op14\***

Heather Harper, soprano; Philip Langridge, tenor; Martyn Hill, tenor\*; John Shirley-Quirk, bass-baritone; Roderick Elms, organ; Choristers of St Paul's Cathedral (Director, John Scott); London Symphony Chorus; London Symphony Orchestra and Chamber Orchestra; conductor, Richard Hickox.  
**CHANDOS CHAN 8983/4 (2 CDs) (DDD/I25.24)**

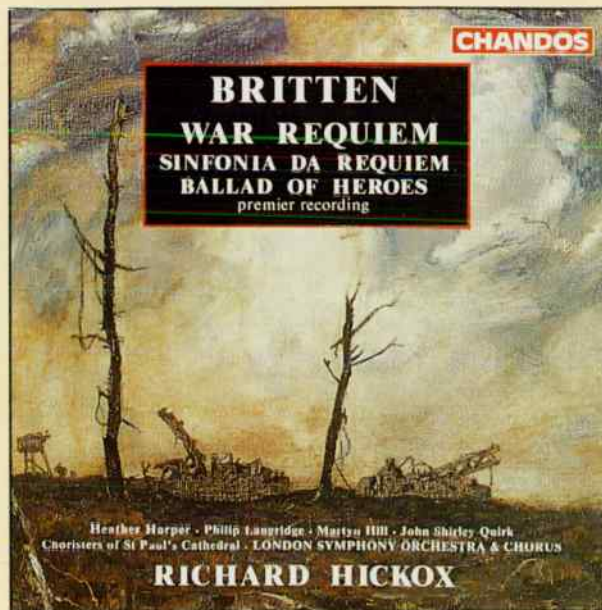
★ Hickox delivers a performance of the War Requiem every bit as compelling as the composer's own. It is also a remarkably unified one, given the diverse elements that go to make up this extraordinary score. The recording was made in St. Jude's church, north-west London and, like Kenneth Wilkinson at Kingsway Hall back in 1963, the Chandos team makes full use of the excellent acoustic to emphasise the spatial effects offered by the work. The ethereal voices, the distant, tolling bell, make for a spellbinding contrast with the intimacy of the soloists and the chamber orchestra. With these kind of perspectives and scale, the sound has a considerable impact, but not exaggeratedly so, and the clarity of the choral contribution is a tribute to both engineers and singers.

The soloists are generally very fine. Heather Harper, who sang at the Coventry premiere, is now taxed by some of the writing but remains warmly expressive and deeply affecting in this role. Philip Langridge is less involving but John Shirley-Quirk is simply incomparable in the Owen settings.

Hickox sustains the performance throughout, even when the score is less-than-seamless and it culminates with the most glorious singing and playing throughout the twenty-three minute Libera Me: a fitting conclusion to a splendid and wholly convincing performance.

The two-disc set, unlike its competitors, also offers a worthwhile bonus: the 1939 setting of poetry by W.H. Auden and Randall Swingler entitled Ballad of Heroes. The heroes in question are those who fought Franco's fascists in the Spanish Civil War and, aside from anything else, the orchestration of the work is dazzling. It is sung here with great commitment by Martyn Hill and the orchestral playing is superb, as is the recording.

I wish I could be equally enthusiastic



**A new recording of Benjamin Britten's War Requiem, a worthy successor to the composer's original Decca version now almost thirty years old, takes pride of place as Peter Herring's Record of the Month. The Music Editor gives his attention to some other discs well worth searching out, including Panufnik's Violin and Bassoon Concertos.**

*peter herring*

about the other 'filler', the Sinfonia da Requiem of 1940. Both performance and recording (a bass drum of fearsome intensity) seem to sensationalize the work unnecessarily when it already has drama enough. Rattle on EMI, for example, manages restraint without in any way diminishing the impact. But for the majesty of the War Requiem and the discovery of Ballad of Heroes, a work new to me, this Chandos issue easily merits its elevated status among this month's reviews.





**ANDRZEJ PANUFNIK**  
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**a Chopin; Bassoon**  
**Concerto**

Krzysztof Smietana (violin); Karen Jones (flute); Robert Thompson (bassoon); London Musici cond. Mark Stephenson.  
**CONIFER CDCF 182**

● This is by way of being at once review and obituary. In December Peter Hering reported on the June recording session in which Panufnik conducted his Ninth Symphony for Conifer. Only a matter of days after we went to print we learnt of Sir Andrzej's death on 27 October.

His career as a composer had been interrupted by the Second World War, much of which he spent - in Poland - giving illegal cafe concerts with his friend Lutoslawski. Many of his compositions were destroyed in the Warsaw uprising in which his brother died. With the advent of communism, like so many others in the Eastern Bloc, he was pushed into Social Realism. Being a conductor (he had studied under Weingartner in Vienna before the war) he seized the chance of an invitation to conduct in Zurich to defect to Britain in 1954. The Poles heard neither his name nor his music for more than twenty years, and he himself did not visit the country again until 1990. He spent many years guest conducting, settling in Twickenham, while new styles and enthusiasms in his adopted country meant his name was hardly heard here too in the Sixties.

The three compositions on this recording span three important decades. The Hommage a Chopin, commissioned in 1949 by UNESCO to mark the hundredth anniversary of Chopin's death, was originally written, as five vocalises, for soprano and piano. It made deliberate use of folk music from Masovia, the central part of Poland where Chopin was born, the melodies interwoven between singer and piano. It was orchestrated in 1966.

The movements have melodic stretches of great beauty and sweetness, the flute of Karen Jones (a

Young Musician of the Year) weaving the folk tunes expressively in and out of the string textures. This is a Slavic nostalgia, underpinned by hope and optimism. There is an uplift in both this and the Violin Concerto which is purely emotional and undeniable.

The Violin Concerto, commissioned by Yehudi Menuhin, dates from 1971. Here, Panufnik's mathematical bent is more obvious. The Concerto begins with a quasi-cadenza, improvised on a three-note cell, followed by another thematic idea built on another three-note cell, after which the original short improvisational theme returns. Panufnik has always, latterly, brought attention to his near-geometrical constructions - the Ninth comes complete with explanatory diagrams - but this need not be frightening. This is far from the dice-throwing tricks of John Cage. The violin, said Panufnik, "is treated as a singing instrument . . . I wanted to convey feelings of joyousness and vitality."

The Concerto has a redoubtable exponent in Krzysztof Smietana, who I heard recently playing Sibelius' rarely heard Serenades for Violin and String Orchestra with splendid sympathy, tone and technical control. He was born in Poland, worked with the Polish Chamber Orchestra and came to London in 1980, where he now teaches at the Guildhall School of Music. Look out for his recordings on EMI and Conifer; he is definitely a rising star.

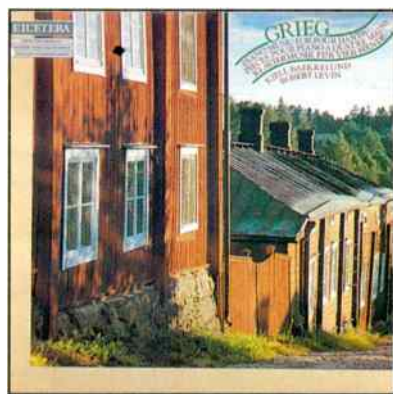
Do not let the geometry in the notes put you off. The violin leads off in the first movement with the three-note "cells", sweet and solemn at the same time. Serialism underlies the composition, and the contrapuntal strings jar before the violin floats ethereally in and out. The violin has passages of Sibelian mistiness and soaring delicate lament. There is heartfelt emotion and nostalgia in the central Adagio: the violin not only sings, but the orchestral strings become a chorus. The third movement of the Violin Concerto, marked Vivace, is exactly that: it is a folk dance where violin and strings join in. This could have been Mozart if he'd heard of the Second Vienna School.

The Bassoon Concerto was commissioned by Robert Thompson, who is the soloist on this recording, later, in 1985. That poor instrument has so often been a figure of fun in the classical canon; yet alongside Prokofiev's jokey Scherzo for four of them, you can put Mozart's sublime Concerto. The Concerto, Panufnik points out, is purely abstract, without a programme, but there is, he writes in the notes, a subconscious one nonetheless. The murder of Father Jerzy Popieluszko was much in his mind when he wrote it, and Panufnik

in his notes draws the musical and horrific real life events together. But, he stresses, it is related to his earlier works, "in which I have expressed my feeling of compassion and deep sorrow for people who have suffered and lost their lives in the cause of freedom and justice."

Again, the bassoon is treated as a singing - and speaking - voice, with an emotional range I never really thought this instrument possessed. Sad and sharp by turns in the Prologo, at once an act of homage and an attack, the softer folk background comes once more into play in the Recitativos and the long Aria. This is an expert and fascinating Concerto for an underrated instrument.

The recording is clear and realistic, with excellent tone. Mark Stephenson has an empathy and grip on this music which is clear in every bar. The London Musici, a relatively new band, play superbly. Hearing repertoire like this we should be thankful that at least one group of musicians haven't listened to the carping of critics who say there are already too many orchestras in London. We should also be grateful to Technics for having the courage to sponsor a recording without which our appreciation of this Polish composer would be the poorer. I'm sorry to have neglected Panufnik before. Buy this, and the Ninth Symphony, and like me, pay a late tribute.



**EDVARD GRIEG**  
**Piano Music for Four Hands**  
**Four Norwegian Dances (for one**  
**piano, four hands); Old Norwegian**  
**Romance (for two pianos, four**  
**hands).**

Kjell Baekelund and Robert Levin.  
**ETCETERA KTC 1004**

● Etcetera is a small Dutch label formed by a couple of executives who escaped from one of the majors a few years ago. They, like some of the smaller English companies, specialise in small-scale instrumental repertoire culled from unlikely comers, or re-license rarer repertoire from other companies when their accounts have threatened suicide



over sales with only three or four noughts behind the first figure. This is one of the latter, which, unless I am deceived, was around on the CBS label in the late Seventies, though for the life of me I don't recall seeing it in the U.K.

Like other composers hunting for folk roots, Grieg discovered a collection of Norwegian folk music in 1868, the year he wrote the Piano Concerto, and six years before Ibsen asked him to compose for his play, *Peer Gynt*. They surfaced in the Norwegian Dances in 1885. The first uses a tune called Sinclair's March (very ethnic Norwegian!) while the other three are reels.

The dances trip along delightfully, with the odd rumblings of Grimm fairy-tale goblins alongside, but even they are soon caught up in the enthusiasm. The Second inescapably has you thinking of a kind of syncopated Frere Jacques, No 3 is a music-hall Lisztian piece, sharp on its toes, a real reel with some oom-pah rhythms, while the last is a speedy reel at the end of which all but the two pianists are near to collapse. These are light pieces, but splendid for breaking out of a fit of the glooms.

The other work, the Old Norwegian Romance, is a less light-hearted, more virtuosic piece from six years later, but also taking its melodies from the Folk collection. Grieg had met Liszt on two trips to Italy, and this is a great pianistic display, if at times the writing is a little heavier than the folk-themes can really bear. Romance with a capital R and some attempts at Lisztian pyrotechnics lie somewhat uncomfortably on some of the variations, but some, with more of Grieg's ear bent to his folk tunes are enjoyable if not of Liszt's calibre. The first theme, preceded by an introduction, was originally the fourth Norwegian Mountain Melody for piano, published two years after the dances, which was originally called Sigurd and the Troll-Bride. It is followed by fourteen variations - the thirteenth of which is a deft and humorous waltz - and a finale.

The whole is full of lively wit, charm and humour, and it's just the thing to expel the trolls with on a cold winter evening. It is well recorded - you can see the fingers flashing - if somewhat closely, but without some of the harsh CBS excesses of some piano recordings of the same period. The two pianists, who I've spotted elsewhere in a programme of music arranged for pianos from shows, are theatrical when they need to be, and sensitive when the score requires it.



**THE ART OF MONTEVERDI**  
I Fagiolini  
FACTORY CLASSICAL FACD316

● Factory? Classical? That's right, and despite the cover which conforms much more to the pop scene than the art reproductions designers seem to believe are appropriate for classical recordings, this is definitely a classical release from the people who gave you Durutti Column, Joy Division and New Order.

Anthony Wilson, Factory founder, loves Mozart, Tallis and Byrd: he's probably not alone, for young people in the pop market seem to find a natural affinity for Renaissance music once they've been introduced to it. Wilson took on Stephen Firth, Music Officer at the Arts Council, to get the Classical half going. He has a foot firmly in the modern camp - he got Birtwistle's *Silbury Air* onto tape when he was at the Arts Council - and the Factory Classical list is an eclectic mix of the avant-garde and the more obvious classical composers. Firth himself, with top-knot and close-shaven above the ears, looks like those new buyers eager for a different experience to Durutti Column. Players are young and enthusiastic. Apart from I Fagiolini, look out for the ensemble Red Byrd and composers Walter Hus and Graham Fitkin.

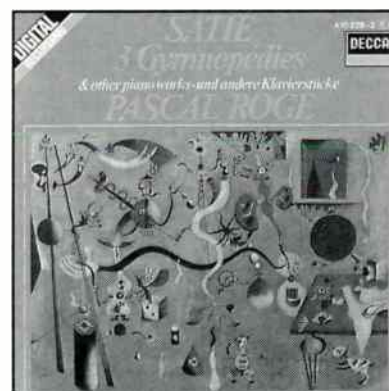
The youth policy has certainly come off. I've never been one of those who thought sixteenth century madrigals should be all tra-la, sweet harmony and glee-club singing. It was a brutal and exciting time - think of the Borgias, Michelangelo and Kit Marlowe - and you only have to read some of the words for it to dawn that madrigal doesn't equate with sappy romance. I Fagiolini go into Monteverdi with immense energy and verve. The enthusiasm runs away with them at times - 'Ninfa che scalza il piede' is a bit too fast and some of the music trips up in a tangle, and 'Si ch'io vorrei morire' is more forceful than beautiful, but there's no denying the energy.

Monteverdi can make you laugh or cry, now and then at the same time. I Fagiolini have adopted a wide and

various expression, perhaps not authentic, but the emotions come over so clearly I'm not going to argue. The a capella 'Lamento d'Arianna' is without doubt one of the best, expressive and imbued with emotion. So too is 'Interrotte Speranze', sung by tenor Andrew Tusa and baritone Henry Wickham, accompanied by Tom Finucane on the archlute. The instrumental accompaniment is generally kept delicate and simple, though when the two ensembles join en masse, there are moments of recklessness when they are not kept together as tightly as they should be. Perhaps this is more the microphone technique, which in the simpler pieces like the 'Lamento della Ninfa' shows up the acoustic of All Saints Peter-sham where the recording was made but develops a flatter perspective for larger forces.

A word of praise for 'Vorrei Baciarti', sung again by Tusa and Burden, who imbue what on the printed page might look a bit too Barbara Cartland-ish with breathless sexiness. Superb. Equally good is 'Interrotte Speranza', moving quickly from sotto voce to anguish to match the words perfectly. This sounds very Italian in temperament, more than conventionally sixteenth century, which I suspect is how it should.

This is splendid, and I hope we hear more of I Fagiolini, bringing their redoubtable enthusiasm to music that can sometimes be treated far too academically in the name of authenticity. Monteverdi, on this recording, is alive, well, and entertaining.



**ERIK SATIE**  
**Three Gymnopédies and other Piano Works:**  
Gymnopédies 1, 2 & 3; Gnossiennes Nos. 1-6; Four Preludes Flasques; Prelude en Tapissierie; Quatuor Nocturne; Vieux Sequins et Vieilles Cuirasses; Embryons Dessechés; Sonatine Bureaucratique; Le Picadilly.  
Pascal Roge, Piano.  
DECCA 410220-2

● Though he died, in the end, in poverty, Satie's wry ironicism and deliberate simplicity of style was a powerful inspiration on French music in the 1920s. If it hadn't been for him





(and Jean Cocteau) we might not have had, for example, Honegger's *Jeanne D'Arc*, which after nearly thirty years out of the record catalogue has now been revived, or the musical style of "Les Six" which he inspired. He acquired followers rather late: it was only two years before he died that he acquired a "school" of disciples, the *Ecole d'Arcueil*, named after the Paris suburb where he lived.

There are two halves of Satie's personality on this disc: the experimental eccentric, who omitted barlines and inserted written instructions to the performer, and the output of the cafe pianist, which is how he kept body and soul together playing in the cafes of Montmartre.

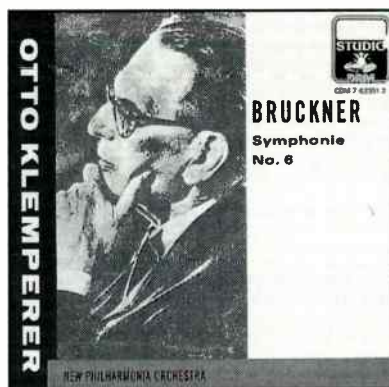
The *Gymnopédies* of 1888 most of us will know in the orchestrated form of Nos 1 and 3 by his friend Debussy. (Of which there is an excellent recording by Previn and the LSO originally on RCA LP LSB 4094, now re-issued on CD. The recording was engineered by Kenneth Wilkinson of Decca, something of a name to conjure with among collectors.) Inspired by the decoration on a Greek vase, these three rhythmical hypnotic pieces at first sound superficially the same, a single formal stately dance with minute variations and twists between the three. The effect has been likened to walking around a sculpture and viewing it from three different angles. Anyone who likes Michael Nyman's music for Peter Greenaway's films will catch on quickly.

The *Gnossiennes* are equally haunting and oriental, especially in the left hand where scales float and linger, the right hand playing embellishments. Small musical phrases are repeated in different transpositions and permutations, and the effect is of a subtly spiced and scented musical dream. Of the other pieces, 'Embryons Dessechés' is a piano picture of crustaceans, would you believe, and very lobster-and-shrimpish it is too, with Satie indulging in a good deal of quotation for fun. A little of Chopin's funeral march sneaks in, mischievously described by him on the page of the score as "the famous Mazurka by Schubert"! The 'Sonatine Bureaucratique', a clever pastiche of Clementi, tells the story of an office worker who dreams of promotion while humming "an old Peruvian air which he collected from a deaf-mute in Lower Brittany." No guesses as to which folk song collector-composers Satie was making a sly dig at.

From the cafe days come 'Je te Veux' (I want You - nothing to do with The Beatles, but it has taken its place in France as a delightful lilting song) and a piece of Cafe Ragtime, 'Le Picadilly', which whirrs around with a syncopated detail that sounds

like the postcards of the horse-drawn traffic in Piccadilly look at the turn of the century. It's better than Scott Joplin!

This is a splendid array of Satie's composing talent, and it's put together like a live concert, a marvelously inviting and enjoyable construction from beginning to end. The recording is splendidly clear and lifelike, though in a markedly empty hall, with the piano obviously on a wooden platform. Those with very revealing equipment might be disturbed by a good deal of chair-creaking, but the music itself quickly allows you to forget it. There is, I thought at first, a rather odd haze over the upper notes, but this is not a recording fault: I've heard the same effect in the Queen Elizabeth Hall, which goes to show how wonderfully accurate Decca's piano recordings can be; teamed with Pascal Roge's sensitivity and delight in the scores, this is a disc well worth having.



### BRUCKNER Symphony No 6

New Philharmonia Orchestra, cond.  
Otto Klemperer.

EMI STUDIO CDM7 63351-2

● EMI are really not doing the dealers in collectables many favours; this is another re-issue of a favourite from vinyl days. In many ways, this is the Bruckner Sixth to have, much sought after in its original 1965 Columbia SAX pressing. For those who still prefer early pressings to CD remasters, the catalogue number was SAX 2582. Remastering and the length of a CD has at least cured one little technical problem: the awkward side-break on the LP, in the middle of the second movement, is no more.

The Philharmonia had had its famous row with its founder Walter Legge only a year before, and the renamed New Philharmonia were on peak form, busily proving the Producer-Autocrat wrong about there being no room for the orchestra any more. Somehow they played from the heart for Klemperer, and it shows. This is not grandiose, over glossy Bruckner, nor is it too much the other way, constantly reminding us of

the touch of naivety that had him offering Karl Richter a tip. That tale could be better construed, maybe, as honest gratitude, and honestly is how Klemperer plays it.

I'll take issue with other critics here, because the Klemperer was taken to task gently for missing some of the mystery in the slow movement. Yet I've never been able to avoid the feeling that bluff Bruckner had his feet fairly firmly on the ground, however often he raised his eyes to heaven, and the more I hear it, the more judiciously judged I think Klemperer's handling of that movement is. That degree of expression from the orchestra is worth any amount of affected insight.

The first movement is marked "Majestoso" and majesticism is Klemperer's forte. The great canvas of the composition builds up in strong brushstrokes until the volcanic eruption of the recapitulation comes as the blinding shock it should.

The Scherzo is the true delight of the performance. The lower strings have a steady fateful tread, while the eerie upper strings and wind shiver and melt. Klemperer always puzzled other orchestras who couldn't make head or tail of his sometimes near-invisible beat, but the New Philharmonia understood him by instinct, and it serves him and Bruckner well in this movement. This is not a mystical Bruckner but a mysterious one in the Trio.

Klemperer and the Philharmonia come up with a performance that is powerful, glorious (especially in the brass, which is heart-stoppingly luxuriant) brilliant and brisk. This Sixth doesn't linger, it is a symphony of effort, struggle and final attainment: like climbing a mountain with spells of near exhaustion, but seeing a beautiful sunrise from the summit.

Something of the success of this as a recording is down to Klemperer recording movements in single takes. An increasing rarity, these days, it is worth having simply for that. Even in old age he could never be persuaded that tiny edits should be made: when it was explained to him, he merely shook his head in disappointment and muttered "Ein Schwindel." "A swindle." He was right, I think; this Bruckner proves there is nothing quite like the orchestra knowing what it is supposed to be doing from beginning to end and there are very few minimal blemishes. A little clanging of music stands and so on here and there.

A snippet for the diary. It's now just gone on ninety years since the Sixth was first performed as Bruckner wrote it; this recording is thirty five years old, and apart from some analogue tape hiss it hardly shows a single day of it.

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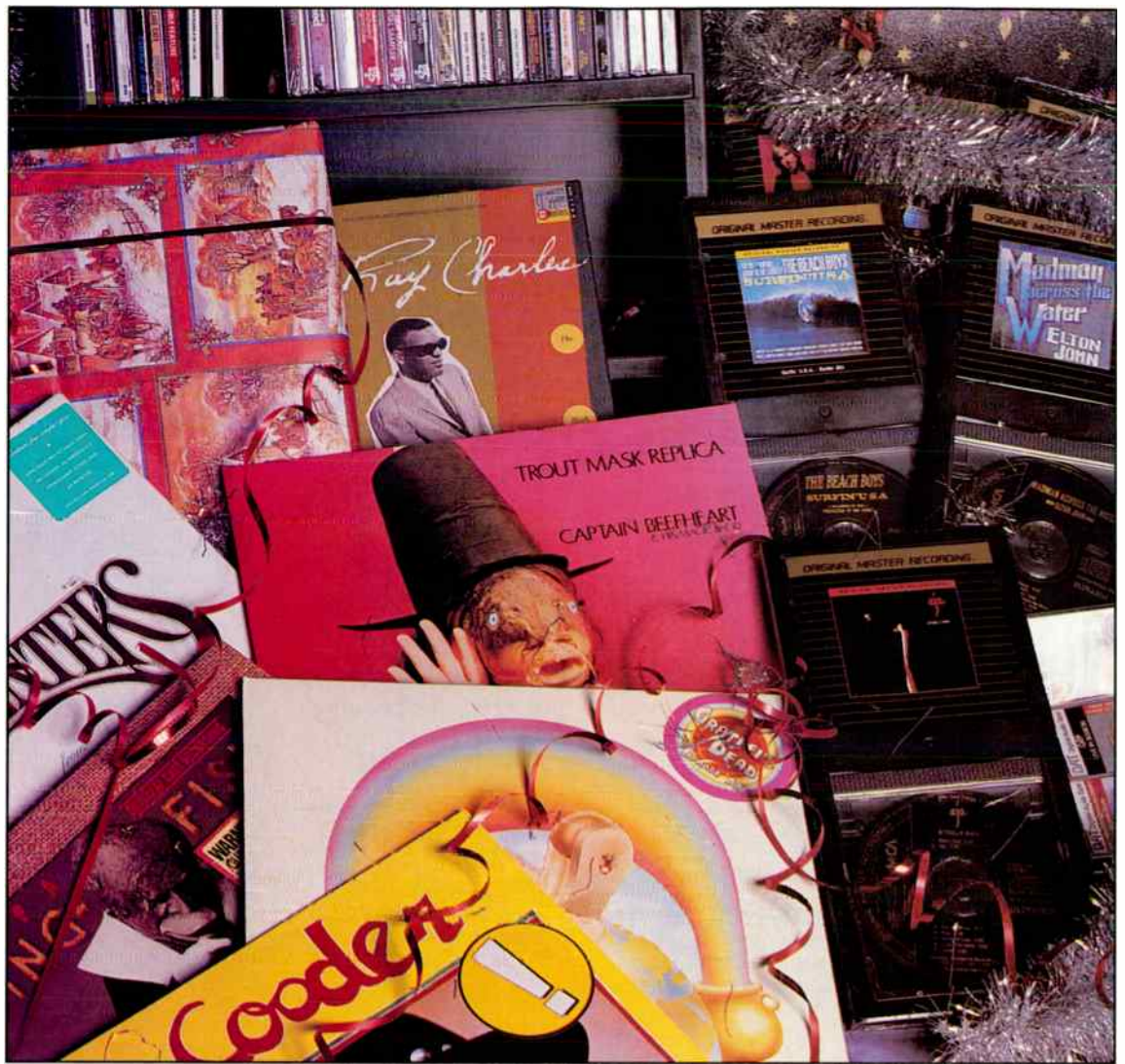


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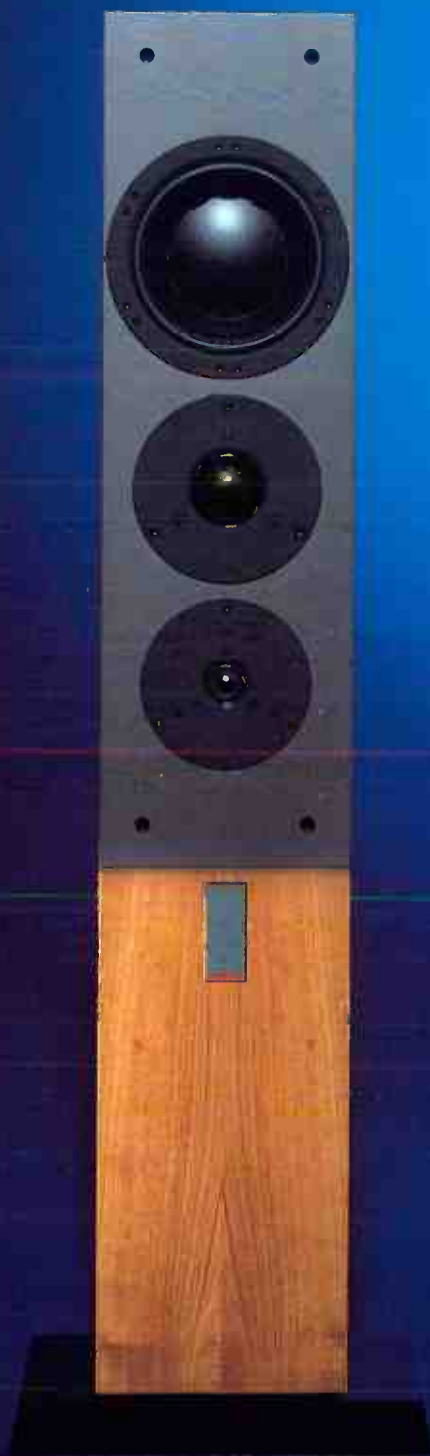
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