During the next couple of weeks the Chords burned in to become sweeter, smoother and more natural. The final results were well worth the wait.

The SPM 400 worked into a variety of 'speakers including Heybrook's Sextets, our own KLS3 Gold Mklls and even Castle's little Kendals. The best match turned out to be the Jamos simply because in terms of detail, coherence and dynamics they suited the Chords perfectly.

SOUND QUALITY

The first thing that strikes you when listening to the Chords is just how transparent they are without being bright or forward. The 1800/400 are uncommon components because they give you that feeling of listening straight through the electronics and deep into the recording. For this to be the case you need outstanding resolution of detail. Excellent though they are in information retrieval it's not this alone that makes the Chords special. What does is a mix of abilities unmatched by anything I've heard at this price or quite a lot more.

So what are these abilities? Detail is one. Then there's the natural, unforced clarity which enables you to concentrate on the musical piece as a whole. Imaging precision and stability is another, as I found with Hideko Udagawa and the London Symphony

HI-FI WORLD

orchestra playing Brahms Violin Concerto, Op.77.

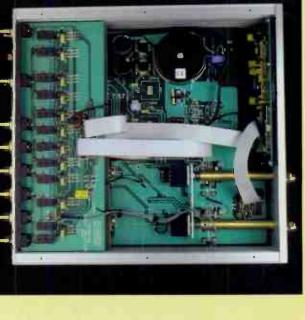
The next enviable string to these amps' bow is their dynamic power and transient speed crescendos don't have their peaks rounded off as happens with so many amplifiers. This makes the music much more invigorating and involving. Instruments in the orchestra such as triangles aren't

modulated by timpani and stay sharply focused - control is close to absolute. Even so, the 1800/400 serve the music, not vice versa.

Looking for some sort of chink in the Chords' armour I lined them up with some funky Soul in the form of En Vogue's EV3 album. The amps handled this as if reproducing a multitude of sledgehammer drum machines and synthesisers was the most natural thing in the world. There was as much slam as the hardest of bass heads could wish for without the delicacy of vocal harmonies suffering in the least.

Switching genres to Jazz and Reggae didn't make any difference - the Chords impressed with them all.

There are certain areas where you could split hairs. Compared to something like the Unison Research Simply 845 on p l 3 the Chords are less fluid and tonally lush. Swapping around with the



£4000 Etalon pre/power reviewed last month revealed the Chords to be slightly on the leaner side of neutral too.

In spite of this there's no doubt the CPA 1800/SPM 400 combination is special. Its strength is that it imposes so little character of its own on music - it won't turn relaxed tempos up-beat nor will it add sweetness to what isn't sweet. This is as honest and truthful a pair of amplifiers as I've heard in a long time. If your musical tastes are broad and you prize neutrality, very few competitors at this price come close •

Chord CPA 1800 Chord SPM 400 £1774 £1325

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Chord Electronics The Pump House, Bridge Court, East Farleigh, Kent ME16 9NB Tel: 01622 721444

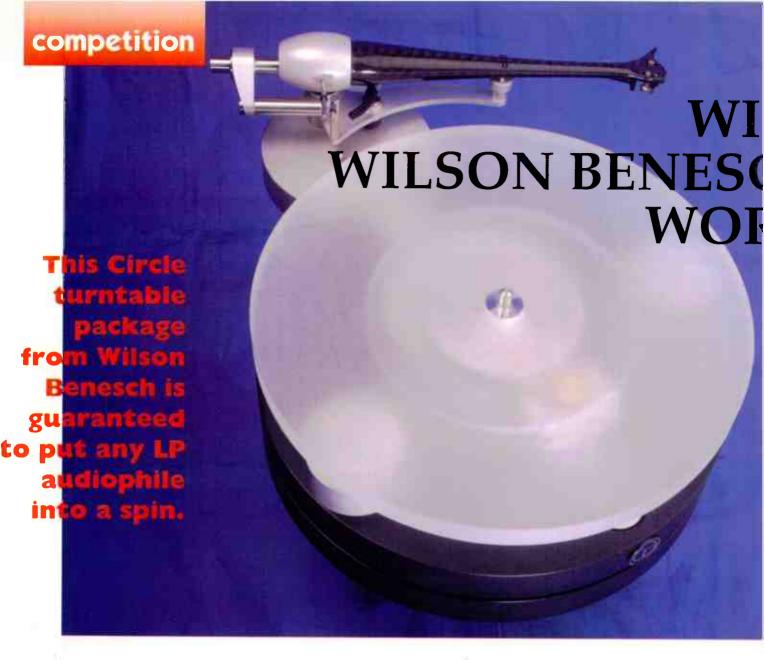
WORLD VERDICT @ @ @ @

Amplifiers which have it all - detail, transparency, slam and rhythm. In a word, excellent.

Measured Performance see PIII



World Radio History MARCH 1998



his month's competition prize is one for the analogue disc fans among you, a top-class combination of Wilson Benesch's Circle turntable, A.C.T. 0.5 tone-arm and Matrix Moving-Coil cartridge as reviewed on p16.

There are two traits you'll never fail to find in Wilson Benesch components - solid engineering and carbon fibre. Each part of this front end demonstrates these virtues.

The £795 Circle turntable is an elegant device with a functional, minimalist look. As its base it uses two circular MDF slabs over an inch thick and 12inches in diameter. The motor (where 33rpm/45rpm speed change is accomplished by moving the round belt on the pulley) is mounted on the lower of these while the upper supports and isolates the sub-chassis. The bearing and armboard sit on three carbon-fibre rods, each of which is 3mm in diameter. The platter itself is a chunky acrylic affair which Wilson Benesch say works best

when it's clothed with the supplied mat of felt

The £795 A.C.T. 0.5 unipivot tonearm could well be the true bargain of the three. It's a less expensive version of Wilson Benesch's A.C.T. 2 and is manufactured in the same way but has simplified connectors and no presentation case to keep the price down.

Final link, the Matrix cartridge is worth a hefty £786. This open-body design uses a carbon-fibre base and its inherent self-damping to reduce resonances in the generator assembly, supplied by Benz-Micro.

Add these three ingredients together and you'll realise that the Circle set-up is very neutral. Gone are the slightly fluffy bass and treble that tainted many turntables of yore. Instead, music has solidity, control and detail without sounding in the least sterile. Rhythm is in safe hands as well, as attested by numerous driving Rock tracks and permanently tapping feet.

With its precision main bearing and faultless finish the WB is going to keep your LPs turning for a very long time to come too. And where most other decks could hardly be called attractive, the Circle and co. ooze more style than the average classy-label boutique.

If you would like to win this great prize, all you have to do is answer the following questions and complete the tie breaker. Send in the entry form on the back of a sealed envelope or post card to reach us by March 6th to:

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

Don't forget to include your name, address and telephone number so that we can contact the winner promptly.

N A COMPLETE CH TURNTABLE TH OVER £2000

COMPETITION ENTRY QUESTIONS				
1) Which hi-tech material is Wilson A. Kevlar C. Nylon	Benesch famous for using? B. Carbon Fibre D. Titanium			
What kind of cartridge is the Mate Moving Magnet C. Crystal	rix? B. Moving Coil D. Toner			
3) What speeds does the Circle cate A. 33rpm/45rpm C. 50rpm/100rpm	er to? B. 78rpm/60rpm D. 8rpm/16rpm			
4) What is the base of the Circle ma A. Plywood C. Plastic	de of? B. Aluminium D. MDF			
5) How many carbon-fibre rods suppl A. I C. 3	B. 5 D. 10			
TIE BREAKER (obligatory)				
Complete the following in less than 30 words				
Carbon fibre is the order of the day, As it helps play music in an uncommon way, Wilson Benesch duly realised this fact, And created the Circle, Matrix and A.C.T.				
Name:				
Address:				
Post Code:Tel N				
\square Please do not add my name to your mailing list.				

COMPETITION RULES AND CONDITIONS

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

COMPETITION WINNERS

Now it's time to reveal the many winners in our bumper January competition where every component reviewed was up for grabs.

ALAN ALDERSON of Co. Durham wins the JPW ML510 loudspeakers.

J. HERMELE of London

wins the Mission 731 loudspeakers.

J. CAMERON of Rosshire

wins the Eltax Liberty 3+ loudspeakers.

JOHN COLLINS of Bristol

wins the Tannoy Mercury m2 loudspeakers.

PAUL SZYSZKO of London

wins the Mordaunt-Short MS10i Pearl loudspeakers.

JASON PARKES of Dudley

wins the Kenwood DM-9090 MiniDisc recorder.

JUSTIN HOLMES of Epsom wins the Roksan Ojan 3 loudspeakers.

STEVE BROOKS of

Northants.

wins the Musical Fidelity X-Pre and X-A50 amplifiers.

JOHN BOYD of Nottingham wins the DPA White Slink interconnect.

TIM HAMLYN of Norfolk wins the Pentacone Plain Soft Copper

interconnect.

JAMES MCPHIE of South Lanarkshire wins
the Prowire Silver interconnect.

DAVE EDMONDSON of Lancashire,

ADAMS of East Sussex,
 PAUL KILLICK of Guernsey,

MARK HILLIER of Suffolk,

KEITH HODGKINSON of Manchester,

BRIAN CHURCHILL of Kent,

PHIL GATES of Southampton,

ELIZABETH AVELING of Bradford, TINA NEWMAN of Hampshire

and

D. L. MURPHY of Kent all win a Ringmat Statmat each.

NEIL REEVES of Warwickshire

and

A. GILYEAD of Solihull

both win a bottle of Licon each.

HAZEL EVERETT of Cleethorpes wins the Philips CDR 870 CD recorder.

ADRIAN BUCKMASTER of Middlesex wins the GATE Troughline decoder.

Congratulations!





EXTRA SPECIAL?

Is it a case of beautiful looks partnering sweet sounds in Sony's CDP-X3000ES CD player? Leo Laminvestigates.

he first time I met Sony's CDP-X3000ES CD player was a year ago in Hong Kong where it was sitting pretty alongside its matching amplifier. I was simply stunned by its looks. Displayed between some Krell, Mark Levinson and high-end Japanese players it didn't seem even marginally out of place, despite costing a paltry £500. A quick listen told me it was a promising design but I had no chance then to really get to know its sound.

My second encounter with the '3000ES afforded me the time I hadn't had before. The Sony is a joy to use, with its acrylic cover that slides elegantly backwards as you place your CD in the machine, and drew many an admiring comment. "Beautiful, I'd buy it for the looks alone," was the general verdict, particularly from female friends who came to observe the most recent review addition to my rack. Stylish in spades the Sony may be on the outside, but do the electronics on the inside match up?

THE TECHNOLOGY

Without a doubt they do. In fact, the build and component quality are little short of amazing at this price. Opening the glamorous case revealed an array of very expensive, audio-grade capacitors, from Elna Silmic (as used by Ken Ishiwata in certain 'SE' version Marantz CD players) to Nichicon Muses, an industry favourite in the upper echelons

of equipment.
Also spotted were
two of Sony's
proprietary Current Pulse
D/A convertors and a fully
Japanese troop of semiconductor
devices. A Lexus under the skin of a
Mini Cooper!

Fancy, but this isn't the only eyecatching feature in the CDP-X3000ES. Sony has discarded its traditional transport, which features in many CD players, like those from Onkyo and Arcam (the Alpha I). The same optical pick-up head is retained but the rest of the transport has been completely redesigned. Where traditional transports move the pick-up across the disc to read the data, the Sony's fixes the pick-up and moves the transport horizontally for tracking. Sony claim this radical departure from the norm provides better overall stability and therefore sound quality than a conventional transport.

And the list of Unique Selling Points lengthens with the four variable-coefficient digital filters. Unlike the user-changeable filters in the Da Capo, which were wholly different ICs, the Sony uses the same IC - it's just the rates of roll-off and their effect on the response that change. Though more of a marketing gimmick than an advance in technology, since implementing multiple digital low-pass filters for a CD player is simple, I'm surprised it's only now,

nearly 15 years after CD's introduction, that the idea has been put into practice.

The filters are located before the D/A conversion and filter out the digital signal's high-frequency components, which are created during sampling. So the frequency spectrum is shaped in the digital domain and you can choose which of the four you prefer.

The standard filter is a brick-wall type chopping in at around 24kHz, with a claimed attenuation of I 20dB, which causes some response ripples near the cut-off frequency as our measurements show. Filter NoI has a slow roll-off which cures the ripples to give a flatter response. Filter No2 is a combination of the standard and NoI filters. Finally, the last setting, No3, is a simulation of a seventh-order Butterworth filter. Selecting a filter is as easy as pressing a button on the remote handset.

The controls on the player's fascia are minimal since all the usual functions like programming, display dimming and the various play modes can be found on the remote. Also featured is a switchable digital output where both Toslink and co-axial are supported.

SOUND QUALITY

After perusing the CDP-X3000ES's innards I was expecting a class-beating performance. Raising your hopes too

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GETTING TO THE SHOW

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high is always dangerous. I played a mix of discs as soon as I'd plugged the player in and the smile slipped from my face - the Sony sounded like a poor example from the dawn of digital replay. Treble was hard and bright, and the bass loose whichever filter I opted for. Fine, so it obviously needed a warm-up. It turned out that nearly a week, on constantly repeat all day was what the doctor ordered.

During that week, the Sony went from strength to strength, the high-frequency aberrations fading away and the whole presentation snapping into focus. It was duly connected to Roksan's Caspian amplifier and a pair of Seas Mighty Mini stand mounters from Wilmslow Audio, picked for their revealing clarity. The Castle Kendal floor standers reviewed on p57 were pressed into service as well. Cables interconnect and 'speaker included Kimber, Audioquest and DNM, and the final ingredient was Musical Fidelity's X10-D buffer.

STANDARD FILTER

A clean, open sound emerged from my Super Minis as the Sony spun the Albert Cello Concerto with Yo-Yo Ma (Sony SK 57961). The CDP-X3000ES's sense of scale was exemplary considering its price and, when compared with the Marantz CD-63 mkll Kl-Signature or even an Arcam Alpha 8, it put greater dynamics and punchier drive into the music. The sound stage was fairly wide and stable, although it has to be said it could have been deeper. Ma's cello was appropriately rich for a Stradivarius and the delicate moments in this work were portrayed with grace and subtlety.

This goes to show how tonally faithful to the music this player is - it relayed whatever was in the recording without adding its own opinion. What prevented an even better score was a shortfall in detail, especially when you remember the expensive components under that desirable lid.

The timpani hit hard as the second movement arrived and the Sony came up with the goods again. As the music became more complicated, the resolution and grip in the bass end decreased while the midrange and the

treble remained intact. However, that didn't detract from the Sony's natural musicality.

FILTER NOI

There was a shrinking in the sound stage's width and depth followed by a more rounded string tone here. Noticeable now by its absence was that feeling with

the Standard filter that if the musicians really did pull out every last stop there might be trouble. Filter No I removed that tiny hint of insecurity and made for a slightly more involving listening experience. Dietrich Fischer Dieskau's voice in Die Schone Mollerin (EMI 7471732) gained more focus with this filter too.

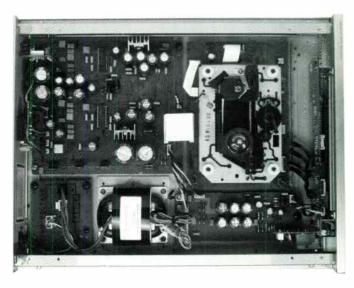
FILTER NO2

This setting produced a drier balance that lacked the richness of its two antecedents. Fischer Dieskau's sonorous voice took on a leaner tenor. as if he hadn't drunk enough water before the recording session. String tone grew thinner with Brahms Symphony No4 conducted by Sir Georg Solti (Decca 436614-2) and the whole orchestra moved back by a few feet. It is true that single acoustic instruments like the guitar on Eric Clapton's Unplugged album sounded sharper because their decay was curtailed but this left the music sounding a touch lifeless.

FILTER NO3

This filter was a mix of the characteristics of the others in that the whole sound stage moved further behind that of No2 while tonal colour was as smooth and rounded as the standard. Yo-Yo Ma's cello regained its mellow resonance and Fischer Dieskau's old recording was vocally warmer and more sensual.

Of all the filters the standard strikes the best balance for me. It has a



combined spaciousness and tonal range the others miss out on and I can't see there being many discs that would have me reaching for Nos I-3.

CONCLUSION

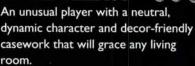
Leaving to one side the stylish appearance, filter settings and unique transport that mark this player out and going purely on sound quality, the Sony is a very well engineered player. It may not manage that trick of high-end sound on a shoestring that one component in a blue moon pulls off but it holds its ground in the £500 battle field. Factor in the looks and the tweaky filters and perhaps the CDP-X3000ES could be that extra-special, long-sought addition to your system •

Sony CDP-X3000ES

£499.99

Sony
The Heights,
Brooklands,
Weybridge,
Surrey KTI3 0XW
Tel: 01932 816000

WORLD VERDICT



Measured Performance see p | | |



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THE CHORD
COMPANY

TRI-WIRED

Ketan Bharadia takes a listen to three £60-£90 interconnects from Audioquest, Kimber and Roksan in the search for an audiophile wonderwire.

KIMBER PBJ

£68/1m.

The PBJ is the entry-level interconnect in Kimber's extensive range and uses a braid geometry for its woven conductors to reduce the effects of electromagnetic and radio frequency interference.



Carrying 'Viola Fora De Moda' (by Ana Caram from a Chesky Jazz sampler CD) the PBJ proved to be an extremely fast sounding cable. It had the ability to track musical dynamics very accurately, lending the sound an open, uncompressed feel. And the good news didn't stop there. The cable also proved natural and very transparent - the various bells and triangles on this track were easily discernible and well separated.

At the other end of the spectrum, drum beats had great impact and speed which helped the PBJ to sound rhythmic and involving.

There is a negative side to the performance which was obvious on large scale Classical pieces. The Kimber possesses a certain thinness which aids the cable's agility at the expense of tonal richness. Highlighting this shortcoming is a forwardness to the treble which benefits detail and stereo imaging but can become fatiguing in a system already slightly bright.

Providing it's hooked up to evenly-balanced or warmish ancillaries the Kimber nonetheless gives an outstanding account of itself at the price.

Russ Andrews Turntable Accessories
Tel: 0800 373467

ROKSAN HDC-01A

£89.95/1m.

Roksan are well known for manufacturing turntables, amplifiers, CD players and 'speakers, but interconnects? Well, they make those too and they've come up trumps with the HDC-01A. This cable is a shielded, twisted pair of multistrand copper conductors covered in a flexible blue sheath.

The HDC-01A has a very controlled sound which is packed full of detail and tonal colour. Weightier and more full-bodied than the Kimber it remains neutral overall and scores well on dynamics, though crescendos weren't quite given the free rein that the Kimber provided. On most music the sense of order the Roksan brings is welcome, allowing you to differentiate the instruments in an orchestra or hear subtle production effects on a Pop recording.

Erykah Badu's Baduizm album proved engrossing, the

outrageously heavy basslines relayed with genuine power and articulation. The way the various percussion instruments and Erykah's vocals were sharply etched and occupied their own space in a well focused sound stage emphasised the Roksan's pedigree.

The HDC-01A is capable of fitting into most systems without upsetting the applecart. With a bit more exuberance it would be excellent.

Roksan

Tel: 01480 431577

AUDIOQUEST TOPAZ

\$50.05/1 m

This is the only cable on test to use oxygen-free copper solid-core conductors and this gives it a less flexible feel than the others. The Topaz is also the cheapest interconnect on test, which obviously didn't hamper it.

The Audioquest has an even character which treads a path

between the Kimber and

Roksan in terms of presentation - it's livelier than the Roksan but doesn't suffer from the thinness of the Kimber.

Detail retrieval isn't quite up to the standards of its

pricier rivals and this affects areas such as expressiveness, sound staging and tonal colour. This comes to the fore when listening to Classical pieces, but even here the deficiencies aren't going to stop you enjoying the music.

On smaller-scale recordings such as that by Ana Caram, the Topaz coped better. The addictive drum rhythms and interplay between the instruments were precisely conveyed even if the heaviest drum beats lacked that last smidgen of weight. Up against pricier competition the Topaz didn't disgrace itself and at £60 is definitely worth a listen •

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Audioquest

Tel: 01223 440964

WRITE & WIN WITH HI-FI WORLD!

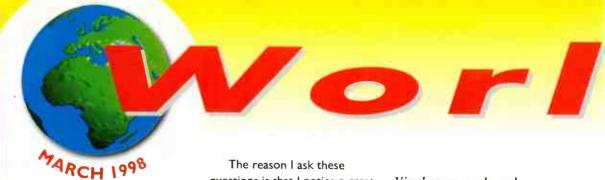
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A

The writer of the 'Letter of the Month' wins a free subscription to Hi-Fi World



ANGLE WRANGLE

Is it true that the V.T.A. (Vertical Tracking Angle, diagram No I) of phono cartridges changed from circa I 5degrees to circa 20degrees in the late '60s and early '70s? If so, then presumably the S.R.A. (Stylus Rake Angle, diagram No2) would have been adjusted as well? Also, I've heard that the lacquer-cutting process changed around this time, which begs the question, is there a relationship between the change in V.T.A. and the cutting process?

The reason I ask these questions is that I notice a great and consistent difference between '60s and '70s pressings. The former are always more textured, ambient and 'breathy'. but less clean. I mostly listen to orchestral, chamber and vocal music. Now the ultimate point is, how to design/tailor my system such that my '70s pressings retain as much of the character of their '60s counterparts as possible? Any light that you could shed on this subject would be greatly appreciated.

G. Burns London.

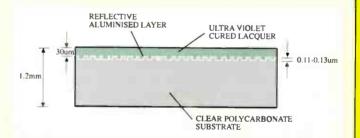
Vinyl compounds and pressing specifications changed substantially in the early '70s. A decade previously, most LPs were pressed onto 160g virgin vinyl discs, which took higher modulation levels (hence the different look of the grooves). By the late '70s, most LPs were cut on 120g recycled plastic at lower levels and with tighter groove spacing, in an attempt to squeeze long playing times onto single albums probably at the behest of Yes and Genesis fans! I'm afraid

LETTER OF THE MONTH

HOLEY CD!

Do you know which side your CDs are buttered on?! My two-year-old son, who is fascinated by anything which turns, recently waded through my CD collection. To my dismay I found him happily spinning the silvery discs in their cases and thereby scratching neat concentric circles on their playing surfaces. I later discovered that my Chandos copy of Dvorak's Symphony No9 skipped at exactly 42mins and 30secs. Examination of the surface revealed a curved scratch which, having nothing to lose, I began to polish out.

After a while I found that, having scoured and polished the surface back to a mirror finish, the scratch remained unchanged. I then discovered that the blemish was not on the playing side but showing through from the printed label side! Shining a bright lamp through this disc and others I found that apart from



A slice through a CD shows how close to the disc's surface the aluminium layer is on the label side.

scratches there were also pinsize holes piercing the reflective surface. Is this normal? Do holes have a part to play in sound quality and should I return discs that have these pin-hole punctures? For now, I resolve to take extra care of the printed surface.

By the way, great publication, particularly the old equipment articles, even though most of the stuff was already second-hand when I heard my first record.

D. Murray Sutton, Surrey.

<u>World Radio</u> History

According to a technical spokesman at Polygram, Philips' music arm, they conducted listening tests into the effect of pin-holes on sound quality in the 1980s and came to the conclusion that they didn't have any impact on it at all. The error-correction circuitry inside your player will have no difficulty at all coping with such small amounts of missing data. On the other hand, as you've noticed, a large chunk of missing data in the

dil

one of the only ways to get big '60s sound from poor '70s discs is to get a highend turntable – a Michell Orbe plays flexidiscs as if they were audiophile pressings. DP

A wide range of Vertical Modulation Angles, which a cartridge's Vertical Tracking Angle has to be adjusted to mimic, was found in cutting lathe heads for stereo recordings across Europe and America (Odegrees and 23degrees in the case of the two main cutting systems in the

LETTER OF THE MONTH (CONT.)

form of an arc cut into the reflective part of the disc will cause skipping.

Pin-holes are caused when tinu dust particles adhere to the aluminised layer in the CD during production and then drop off before the protective layer is added. With modern-day clean-room conditions in CD plants, pin-holes are a rarity.

As to the concentric arc on your Chandos copy of Dvorak, it has most likely been scratched in from the label side, either by your son or your CD player's clamping mechanism. There's a 1.2mm clear polycarbonate layer protecting the side of the CD that the laser reads, but only about 20microns (20thousandths of a millimetre) of hardened lacquer between the aluminium layer and the outside world on the label side. JM

States, for example) after the widespread introduction of stereo in 1957. There was a variety of Vertical Tracking Angles in cartridges too, from as little as 10degrees to as much as 40degrees. Therefore, in 1961, the Recording Industry Association of America (R.I.A.A.) recommended that 15degrees be the standard for cutting lathes and cartridges.

A V.T.A. figure of 15degrees was adopted in the States while 20degrees with a tolerance of

+/-5degrees was written into the guidelines in Europe in 1972.

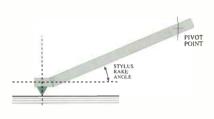
Many cartridge manufacturers changed the geometry of their cartridges in line with the recommendations but not all. A modern example is the DNM Aciore, which has a V.T.A. of 30degrees that gives higher secondharmonic distortion on left and right images than the more normal V.T.A. of around 20degrees. As you surmise, Stylus Rake Angle changes with V.T.A. to maintain the correct stylus/groove relationship.

Another reason for variations in sound quality from different pressings is the character of the cutting lathes themselves. According to Sean Davies, an expert on cutting lathes who has sat on British Standards Authority committees for audio, The American Westrex cutting heads of the early '60s had a

relatively high mass which meant only lowish levels of motional feedback (up to a frequency of 9kHz) could be applied to control their movement. This resulted in the kind of hard, powerful midrange

DIAGRAM No!

DIAGRAM No2



Here you can see how Vertical Tracking Angle and Stylus Rake Angle are measured.

that gave Atlantic Records' recordings some of their 'sonic flavour'. As lighter alternatives were developed, so the sound changed.

Ortofon and Teldec Neumann heads already had lower mass and a wider feedback bandwidth (up to 20kHz with one of Ortofon's heads) which produced much sweeter midrange and treble.

An extra factor with Decca recordings is that

Vivante: 0181 977 6600



Save your stylus having to plough through a dusty groove with one of Decca's 2+2 record brushes.

they were cut at half-speed because the company's engineers didn't think the lathes of the day were really up to the job when working at normal speed.

THE BENEFITS OF AGE

I have a NAD 502 CD player, Harman Kardon 1400 amplifier and Mission 700 loudspeakers with Cable Talk Monitor 2 interconnects and **OED Oudos** 'speaker cable. My room is about 24ft. by 10ft. My faithful old NAD 3020 amp has just been replaced by the Harman Kardon because I thought it was time to put the

old girl out to pasture.

However, instead of improving the sound of my system, I have made it almost unlistenable. Sure, the HK has a bigger sound and is able to produce violins and guitars in a more life-like manner. but I find it tiring to listen to for more than 20 minutes. What have I done wrong here? I suspect that perhaps the weak link in this case might be the Missions and that now the NAD 3020 has been replaced, they have to go as well because the system has become unbalanced.

Am I right? And could you suggest suitable replacements in the £150-£250 area? Paul Fitzgerald Moseley, Birmingham.

You've fallen into the classic trap of ...45 >

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Ideally you should sell the HK and replace it with something like Aura's VA 80SEx integrated which costs £250 and sounds



To regain the sweet, smooth sound you've lost, try Aura's VA 80SEx integrated.

smooth, fluid and detailed. If budget permits, LFD's sweet sounding Mistral integrated at £499 is another worthy option. The Mission 'speakers, although they're getting on a bit, are good enough to let these amps shine.

If, for some reason, you want to hold on to the 1400, then a change of loudspeakers is called for. Have a listen to Mission's 732is at £200 which have an engagingly sweet, fast and dynamic presentation. KB

Chord Co. Tel: 01722 331674



A pair of the Chord Company's revealing Cobra 2 interconnects will lift your system's sound higher.

A HEAVY METAL FAN WRITES. . .

One of my friends is a gifted electronics engineer and a heavy duty hi-fi nut who's built his own DAC, spending more than £800 on components and using only the best he could find. I guess a commercial equivalent would probably cost over £3000.

We haven't compared it to everything on the market but reckón it would be hard

to find better, except the megabucks offerings from Krell, Mark Levinson, Wadia et al. Alas, he's still using it with an ageing Pioneer

player as a transport. To exploit its qualities to the full he definitely needs something better, which is the problem.

Who on earth is willing to pay £4000 for transports from top American manufacturers? And look at the cheaper alternatives -Stable Platter Pioneers? Clever idea but flimsy build, even on non-budget players. Teac's V.R.D.S? Nice design, but only properly executed on machines costing £2000+. Those £750 to £1900 transports from British manufacturers? Some of them are well designed, but look at those plastic disc trays shame! If I'm not mistaken, only the Audiolab transport has the Philips CDM 9 Pro mechanism with a metal tray. Where are the good, affordable CD transports?

Remember the first CD players? Many were built like battleships. If older players had really good transports, why not today's? And is it worth trying to find a second-hand high-end player of yore and use it with one of today's finest DACs? Don't tell me it's impossible and that I'm the only one who



With CD in its infancy, early players had to be well built to be reliable and to cope with discs of varying production quality.

hates those nasty plasticky things - there are times where heavy metal is better for music lovers!

Christian Roiseux Brussels, Belgium.

Early CD players were so well constructed because they were expensive and not built down to a price. The manufacturers also knew they had to get CD right first time so they deliberately overengineered the players to withstand more than they had to. On top of this, the disc quality control wasn't as good as it is now, and hardware manufacturers had to compensate for this fact. The results were metal die-cast transports and sturdy metal disc trays, plus generous case construction, power supplies and the like. These days, manufacturers are much better at building CD players down to a cost, but haven't made such advances when cost is no object.

You'd be forgiven for thinking that all CD transports should sound the same given that they retrieve the same data. Jitter is the key. Although the same data is read, some transports get the timing spot on and some don't. Here, construction quality, accurate clocking, etc seems to reap dividends.

As an aside, don't confuse the disc tray with

the actual transport mechanism which comprises the laser assembly and running gear. Although the two usually go together, a metal disc tray doesn't mean a metal transport. And by the way, the Audiolab 8000CDM has a plastic disc tray.

As for your friend's problem, Teac's V.R.D.S. T1 transport is a great budget buy not too far behind top stuff like Pink Triangle's Cardinal but much cheaper. If money's no object, consider Linn's superb Karik 3, which not only has the slickest and fastest metal disc tray you'll find, but a fantastically tight, punchy, rhythmic sound, plus a built-in DAC should you ever need it. Alternatively, go for a second-hand early Nineties high-end Japanese one-box player with a co-axial output, like Marantz's CD-94, replace its digital output stage, with one from Trichord say (tel: 01684 573524) and use it as a transport. DP



One of Ringmat's Statmats will complement whatever transport you decide on.



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CASH INJECTION

Please could you give me some advice. I currently have a Rotel RCD-956BX CD player, Thorens TD160 turntable and SME 3009 arm with Linn K5 cartridge, Meridian 551 amp and Tannoy 611 'speakers bi-wired with Heybrook Heywire cable.

In a nutshell the sound has no bite, it appears too laid back. My musical tastes are varied (Rock, Jazz, Classical). I am thinking of buying a Linn LP12 (secondhand). My budget will be in the region of £1000 upwards. This is a long-term project for me.

Andrew McDonald 101332.3154@ compuserve.com

One immediate way to get quite a lot more from your system would be to change your loudspeaker cable -



DNM's Mica MM will easily outstrip Linn's K5 in an LP12.

the Heywire isn't really up to much. Ortofon's SPK200 at £5/m and DNM's Reson at £6.95/m (termination is extra on both) would be two to go for.

A used Valhalla/LP12 (pay no more than £300) might indeed come next. Just make sure you trade in the K5 for DNM's £150 Mica, which is based on Goldring's 1042 but sounds quite a lot better. You

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could try sticking with your SME 3009 (have a look at David Price's tips in July 1997 on how to get the best from this arm), or go for an Akito instead. Carefully set up though, the 3009 with a decent MM can sound surprisingly good.

You should still have about £450 left from your £1000 pot. The Meridian 551 doesn't need replacing so you can go for either 'speakers, if vinyl is your main source, or a new CD player. I recommend Castle Edens and Marantz's CD-63 mkII KI-S. JM

Chord Co. Tel: 01722 331674



The last piece in the puzzle - a pair of The Chord Company's revealing Cobra 2 interconnects.



MEGA UPGRADE PROBLEMS

My system comprises a Micromega T-Drive and T-DAC, Audiolab 8000A integrated and Arcam Delta 290P power amps, driving respectively tweeter and bass units of a pair of Ruark Rhapsody loudspeakers. I'm tempted to get a second 290P and use them as monoblocs, dividing the amplification between the 'speakers rather



Audiolab's smooth but slightly dry 8000Q will balance the warmth of your Arcam 290P power amps nicely.

than the drivers as at present, and use the Audiolab as a pre-amp until funds allow an upgrade. Arcams appear to be available for about £250 second-hand at present. Do you think this would make a worthwhile upgrade, and what pre-amp would you recommend for later? Richard Dixon

RVDixon@aol.com

Your source and 'speakers are both good, so you're right to concentrate on amplification. I agree that another Arcam 290P would be just the job, but your system could still work best bi-amped rather than monoblocked - you'd have to try that one out for yourself.

Next, upgrade to a decent pre-amp - if you want warmth and musicality, LFD's Mistral or Cyrus's Pre are good budget choices. But you may find the slightly leaner Audiolab 8000Q works nicely with your sumptuous sounding Arcams - it's a fine secondhand buy for around £650. DP



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SIMPLE REALLY

My room size is 15.5ft. by 15.5ft. by 11.0ft. What kind of 'speaker would suit it? At present I don't own any system as such as I plan to start from scratch. My budget is £7000 not including cables, just the CD player, amp and 'speakers. Anything you suggest should be solidly built. My musical diet mainly consists of Classical and chamber music with other types thrown in occasionally.

One thing that is especially important is sound staging, which must have good depth, width and height. Am I asking too much for my money? This is going to be my last system, so any help would be much appreciated. Jaleel (surname not supplied) jaleel@ibm.net

For £7000 it's difficult to imagine asking too much for your money! One combination which positively leaps to mind is Pink Triangle's new Litaural CD player (£2100 and sonically outstanding, although the build doesn't exactly rate as 'hewn from stone'), Unison Research's £3000 Simply 845 integrated valve amp (apparently constructed to induce hernia in whoever has to position it) and ProAc's Response 2S stand mounters (£1800, easy to

drive and crystal clear).

By single-ended valve standards the Simply 845 is a real muscle amp with 24watts available at the 'speaker terminals. I think you should find the ProAcs, an earlier incarnation of which



At £2100 Pink Triangle's Litaural one-box player makes a DAC/transport combo look unnecessary.

Ketan Bharadia uses, will fit the loudspeaker bill perfectly. This system, with its beautifully smooth, sweet and spacious presentation should keep you riveted to your CD collection for a long time to come.

Bear in mind that valves are microphonic and the Simply 845 will need some solid support. Elemental Audio's Monoplinth (£500) would work well. The same goes for the Pink Triangle. JM



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HI-FI WORLD



TURNTABLE TEASER

If you have a record player which you are rather fond of as a motor unit but you do not care much for its (non-removable) tone-arm, is there anything wrong with

fitting a better
tone-arm on a
separate plinth, for
example at right
angles with the original
tone-arm, provided the
external dimensions of the
record player plinth allow
this?

Dr Alexandros A. Lavdas a.lavdas@ucl.ac.uk



If you can get your hands on a Kenwood KD-7010 direct-drive turntable (not too expensive second-hand), you can remove its plinth to make fitting a second tone-arm easier.

Interesting idea! Providing you get the geometry spot on and you attach your plinth properly it should work. How you attach your plinth depends on whether it's a suspended sub-chassis deck or not. If it is, rather than attaching another plinth, try glueing or bolting a custom armboard made from, say, MDF to the existing subchassis. This would involve extensive surgery to the deck's plinth, so as to let the new armboard attach to the sub-chassis without stopping it from bouncing freely inside the plinth, coupled to the main bearing and platter but

decoupled from the plinth. If it's a non-suspended, Rega-type deck, you could simply fabricate an armboard and glue it to the plinth in exactly the right place. Providing your geometry's okay and everything's rigid, it should work perfectly well, and could look dropdead cool (I've always wanted a two-armed turntable, but that's enough of my fetishes!) One of those old quartzlock Japanese direct drives with good motor units and bearings but rubbishy automated tone-arms could be the ideal testbed send us a photo when you've done it! DP



Make sure your modified deck is giving of its best by getting your cartridge tracking weight spot on with one of Shure's excellent SFG-2 stylus pressure gauges.

CORNERED

I was wondering if you could give me some

give me some advice. My current system consists of a Linn Basik/Ittok/K5 turntable, a Sugden SDT-ISE CD player, and a Sugden A2 Ia

integrated amplifier. I have been using sensitive Lowther Classic 400 'speakers which worked well with the 30watt Sugden.

I have recently moved house and the room the

system is in measures 10ft. by 16ft. by 7.5ft. high. Due to the arrangement of the room the 'speakers have to be in the back corners of the 10ft. wall. The Lowthers have been damaged during the move and are too big for the room anyway. I am trying to find a suitable pair of 'speakers to match the system and the room size. My local specialist has recommended the Castle Harlechs. However, I have read that they need to be free standing which is a bit of a problem with the room. listen to a wide range of music, particularly Country, Rock and Blues. Any advice would be greatly appreciated.

Chris Griffiths CGriffi664@aol.com

There's a couple of potential drawbacks with the Harlechs (reviewed in August 1996) in your system. The first is their low sensitivity (84.5dB). Yours is a medium-size room, and given your musical preferences, I can see the Sugden running out of steam at times, in spite of the Castles' high 11ohm impedance which will draw little current from the amp.

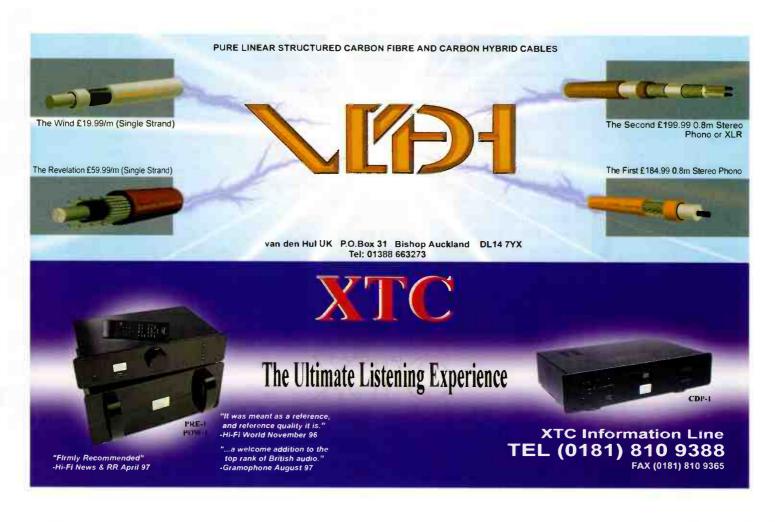
The second is where they're likely to be positioned. The Harlechs



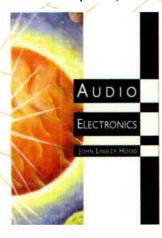
Sugden's Class A integrated, the A21a, may not pump out lots of watts but those on offer are some of the sweetest around.

have deep bass and will boom if you push them into a corner. You could try B&W's £600 CDM1 stand mounters instead, with their 87.5dB sensitivity and fairly even





70hm load. The Sugden's warmth and smoothness will help take the edge off their metal-dome tweeters to give a fast, open and detailed sound. If there's still a bit of bass boom, try some long-haired wool in the CDM1s' ports. JM



Take a look at what makes 'speakers, amps and sources tick with John Linsley Hood's Audio Electronics.



'BARIK BLUES

I'd welcome your advice on replacing my ageing passive Isobarik loudspeakers. My present system is: Naim 82, Supercap, 135s, current-spec Linn Sondek, Ekos, Arkiv, Prefix, Hi-Cap, Lingo, plus a Micromega Duo CD 2 player and Duo Pro DAC with Theta TLC. Ideas so far are the KEF Model 4, Celestion A3, Epos ES30, ProAc 2.5 and Monitor Audio 20SE. I am also interested in adding a subwoofer, but not with the Model 4s which are at the top of my price range. Musical tastes are mainly Rock and Country. Room size is 8m. by 4m. John Hill Wilmington@

What kind of improvement do you want? If you're into the Linn/Naim sound, my first choice of Quad ESL63s and a large REL sub perhaps wouldn't be appropriate - you'd get a massive increase in clarity

compuserve.com

HI-FI WORLD



If your Isobariks are past their sell-by date, try a pair of Epos ES30s.

and speed but they wouldn't quite have the weight of your Isobariks. KEF Reference Series 4s have enough grunt and also bring far superior imaging, a sweet treble and fine clarity - but may lack the speed you desire.

So my hunch would be that the Epos ES30s would be right up your street, with their dry, fast, rhythmic sound - or even passive Linn Kabers which you could later activate. When you're spending this much money the only answer is to audition as many 'speakers as you can at home - find a good dealer and start listening!



Treat your Micromega to one of Ringmat's Statmats.



CARTRIDGE TIPS

I have been a music nut for some thirty years. I prefer the live variety but unfortunately cannot get to concerts as often as I'd like. I have had many systems over the years and have found hi-fi a very frustrating 'black art' - one step forward two steps back! I have finally recognised that there's no perfect solution and that the real answer is to find the best compromise, My musical tastes are wide though I listen to mainly Classical -

orchestral, choral, organ and chamber music. Musicality and an ability to create a realistic acoustic and 'real' performance are very important. My system consists of the ubiquitous Linn Sondek LP12, Ittok and Asaka, feeding Michell Iso, Unison Research Mystery I preamplifier. Meridian 508 20-bit

Research Mystery I preamplifier, Meridian 508 20-bit CD player, Quad FM4 tuner and Art Audio Quintet monoblocs driving a pair of Klipsch Klipschorns.

The Asaka cartridge is unfortunately nearing the end of its life and I am therefore now considering potential replacements. I have spoken to several dealers and have found them pretty unhelpful. They seem to expect me to buy blind on their recommendation and are unwilling to demonstrate in the shop let alone in my system. The budget for the new cartridge is £500 and names like Ortofon, Lyra or perhaps your own favoured Goldring 1042 come to mind. I would also appreciate any advice on cables and system tuning. I have recently installed DNM Reson interconnect and 'speaker cable and whilst it is excellent it does seem a touch bass

light at times. I would

appreciate your comments.

Many thanks for an excellent magazine.

David King
David.I.King@btinternet.
com

I'd go for a Goldring 1042 or DNM Mica which will bring more smoothness, fluidity and bass power than your old Asaka, at the expense of a little treble detail. Then, invest your next £300 on a Cirkus upgrade for your LP12 - an absolute must for owners of older Linns! This done, you'll have a bigger, more confident and rhythmic sound with far better imaging and dynamics plus the improved bass you



Soup up your Sondek with Linn's high-tolerance Cirkus bearing.

crave. In the long term, I'd think about upgrading your old tic-toc to a Naim ARO, which is stunningly fluid and musical on a Sondek, and Linn's latest top MC, the Arkiv. DP



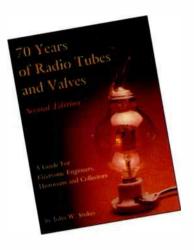
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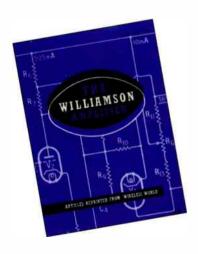
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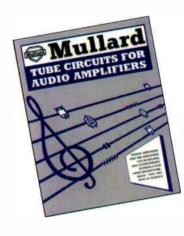


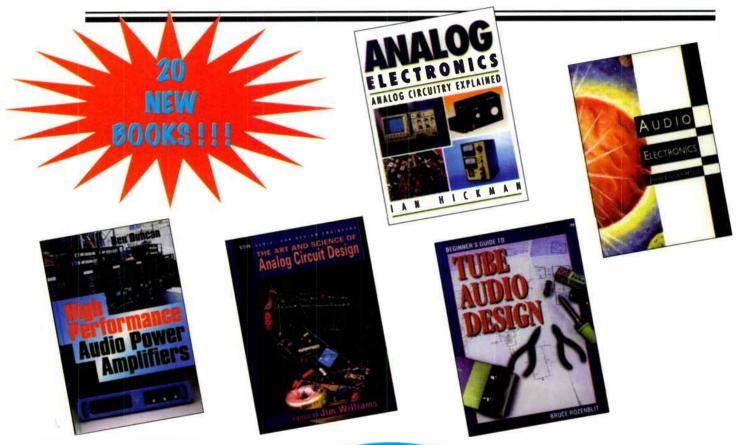




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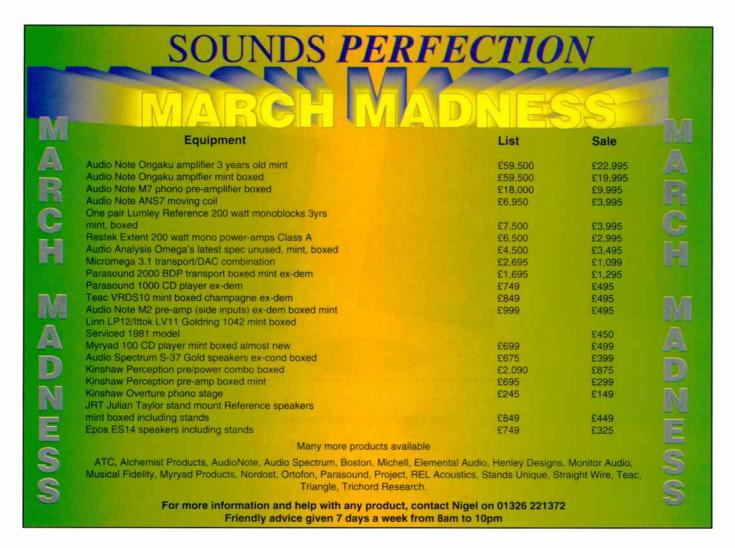
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VARMERPERFORMER

Dominic Todd dons his hi-fi ear-warmers for some smooth tunes from Musical Fidelity's X-Cans headphone amp.

o this isn't a reprint of the Musical Fidelity X-DAC convertor (November 1997) or X-Pre pre-amp (Jan 1998) although it might look like it. It's just that there's a certain family resemblance that unites MF's X Series of 'hi-fi in a can' components. The word 'can' is especially apt here as the little silver cylinder of the X-Cans is a headphone amplifier. Featuring a valve output stage, it's designed for use with amps that either don't have a headphone socket or possess one of dubious ability.

Shaping up against the £130 X-Cans was the headphone output of an NAD M1300 pre-amp and two sets of 'phones, Beyer Dynamic's DT411s and Jecklin's Floats. Initial musical fare consisted of Richard Thompson's 'Calvary Cross', a live recording with attacking drums and vocals, and searing guitar offset against mellow bass and accordion.

The X-Cans definitely shares that Musical Fidelity trait of smooth warmth which makes long periods of listening pass by without ear ache - the valve output stage allows the music to ebb and flow with the minimum of fatigue. A warm presentation shouldn't be interpreted as a lack of detail or dynamic contrast though. Cymbals might not have enjoyed that last degree of finely-etched detail that an electrostatic headphone like the Jecklin can depict, but they shimmered and crashed in a manner the NAD couldn't hope to replicate. The only 'snag', if you can call it that, was that the X-Cans

could show up the rather soft bass response of the Beyers. Clearly, if the matching headphones have any weaknesses, then the MF will expose them.

The rather more professional production on Finlay Quaye's 'Sweet And Loving Man' put this transparency to better use. Vocals were fuller-bodied and the layering of backing vocals was more convincingly structured than with Richard Thompson's album. The percussion snapped into sharper focus too, and the sound as a whole was less mechanical.

To see if complex Classical music would trip the X-Cans up I plied it with an LP of Schubert's Symphony No8 (Unfinished). There was certainly a mass of detail but this had its downside. Surface noise from the record was more prominent than it had been through the NAD during quieter passages. This wasn't hard to forgive given the separation which enabled the X-Cans to unravel trying pieces without fuss. Timbral reproduction, particularly of strings, had an enviable harmonic richness, and the entire work was imbued with a sense of tension that's rarely achieved in most amp/headphone combinations.

Gregson and Collister's 'The Most Beguiling Eyes' proved the Musical Fidelity had a way with female vocals. Their emotion and vivacity through the X-Cans couldn't be equalled by the NAD's solid-state offering.

In answer to the question, "Is the Musical Fidelity X-Cans worth £130?" I

would say resoundingly yes. Provided you match it with a decent pair of headphones (I'd recommend spending a minimum of £100) it represents excellent value for money. Even if you already have an amp with a headphone socket you'll probably notice big gains in terms of depth of sound, control, timbre and musicality.

If you use headphones as your sole output, then you may find something like the Sennheiser HE60/HEV70 (£1000) or a pair of Stax more rewarding due to the remarkable insight into the music they are capable of. But for a much, much smaller impact on your wallet and use accompanying loudspeakers, the X-Cans partnered with a decent set of Sennheisers, Beyers, Grados or the like could prove an enlightening experience •

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hichever report you read, the story on DVD is different; nobody even knows what the initials stand for! I believe I am right in saying that developer Toshiba called it Digital Video Disc, but somewhere along the line it picked up a peculiarly vague alternative title, Digital Versatile Disc. Whatever, the format and future of DVD is as confused as its nomenclature.

DVD is, for the moment at least, thought of as the successor to CD. However, current standards mayhem is encouraging others to consider launching alternatives. But that's another story.

A DVD disc in today's form will hold 4.7GB of information, seven times as much as a CD, yet it's the same size and, the industry thinks, more acceptable in the eyes of buyers because of it. The one thing no one wants to introduce is a wholly new format because too many have failed before. This fear affects a lot of thinking.

Although early DVD discs will hold the aforementioned 4.7GB (Gigabytes), dual-layer, doublesided versions will reach 17GBs. The original idea behind DVD was to make a 'CD' that could oust Laserdisc, CDV (CD Video) and the VHS cassette as storage media for films. To that end Toshiba and the DVD consortium first started talks with Hollywood's film studios and promptly got themselves entangled in a web of protectionist issues, such as world-wide zoning, that hampered and still hampers the global availability of DVD. Asia has it, but Europe does not, for example.

Like a CD, a DVD can be stamped out, facilitating mass production. However, because the pits are then permanent, such a disc can only be used for replay. Toshiba et al. had to come up with recordable DVD if it was to compete against the recordable video cassette, as well as CD-R and its

Mysteries from Noel Keywood

successor, CD-RW. It looks as if they made a serious, perhaps fatal mistake here,

Recordable DVD was put in a caddy for protection. But Philips believe the caddy system is unpopular with users, I

adding greatly to their

woes.

result, every article I have read on DVD has failed to mention either this topic or why Philips and others decided to break away from the DVD consortium. So I'll speculate a little, drawing on what I have recently been told about the situation from sources close

"The original idea behind DVD was to make a 'CD' that could oust Laserdisc, CDV (CD Video) and the VHS cassette as storage media for films. "

have been told by someone close to the company. It creates two forms of media, which is confusing, and it raises their cost and complexity. Disc price is a crucial factor and a caddy is expensive. Storage space and shipping weight also increase, adding to background costs. Early DVD players will not play these caddy discs apparently and, also annoying for Philips I am told, current DVD players are not sensitive enough to read the low reflectivity of CD-RW discs. This means DVD at present is not fully compatible with all media, including CD-RW.

I note that Philips' press releases talk darkly about "incompatibility" without being specific about precisely what is incompatible with DVD as originally proposed. As a

to Philips.

I suspect Philips are not being specific for the following reasons. I cannot see why recordable DVD (DVD-RAM), in its latest form, is incompatible with anything in theory. Even if it cannot read CD-RW discs now, and cannot be read by old DVD drives, it can be made to do so. The disc tray of a DVD player will carry normal CDs and ones in a caddy, so there is no physical incompatibility here. Philips are unable to make any allegation of incompatibility, over and above those I have described here, that cannot be refuted, I suspect.

Licence fees might also have something to do with it. The original DVD consortium was big, so royalty fee income from discs and players would be spread thinly amongst the



participants. The breakaway group comprises Philips, Sony, Hewlett-Packard, Mitsubishi Chemical, Ricoh and Yamaha. This is a smaller group so each will receive a bigger slice of the

Finally, Philips are making big bucks today

from their involvement with computers. Technologically, computers are the Wild West - standards, products and technologies come and go virtually overnight. And remember Philips was almost going bankrupt a decade ago. The bickering,

protectionist attitude and delays imposed by Hollywood on DVD have brought back memories to Philips executives of their problems with the music business and DAT, I have been told. They have been dismayed by it all and don't want to know.

So it looks as if we will shortly be presented with both DVD-RAM (recordable CD in a caddy) and DVD+RW (recordable CD not in a caddy!) Even though I'm not convinced by Philips' arguments I still understand their viewpoint. My feeling is DVD+RW will walk it, mainly because of lower disc cost. Expect to see this 3GB recordable disc by late 1988. By 1999 I suspect it will be storing 24-bit at 96kHz audio, amongst other things.

DVD? Digital Vexatious Disc I call it •

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Castle's latest, the £450 Kendals, boast advanced carbon-fibre drivers and lavish cabinets. Leo Lam enjoys.

astle has managed to build up a respectable reputation since its birth in 1973. This comes as no surprise if you have ever laid eyes and ears on any of their 'speakers like the new Kendal floor standers. Their immaculately-finished cabinets, competent engineering and impressive sound are a potent combination.

Compare the £450 Kendals' stature to that of Castle's other floor standers and you might come to the conclusion someone's been getting trigger-happy with the magic shrinking raygun at the factory - these are small floor standers! But then they've been designed with the average space-challenged British domestic environment very much in mind.

The Kendals differ from the rest of Castle's range for another reason - they lack reflex loading. This, according to Research and Development Director Fred Clayton, was because putting in a port would create bass boom in the small rooms where the bi-wireable Kendals will find their abode. Instead, the 130mm woven carbon-fibre mid/bass driver and 25mm polyamidedome tweeter are bolted to an infinite baffle enclosure of 18mm MDF.

I decided to set the drive units in motion with the very capable Roksan Caspian and Aura VA 80 amplifiers fed from a modified Arcam Alpha I CD player and Musical Fidelity X10-D. I followed Castle's recommendations and pushed the Kendals close to the rear wall and toed them slightly inwards.

After the superb midrange lucidity bass was most noteworthy. Instead of being deep and thunderous, it was clear and taut in a way that recalls the much

more expensive Chario Academy 2 or classic L\$3/5a. Though some might condemn the Kendals as 'bassless', it is more a case of quality over quantity. Like a bottle of ripe and dry white wine, the bottom end is not quite fullbodied but indisputably mouth watering. Only those who seek an extended synthesised low-

end to bolster Dance tracks should look elsewhere.

The natural presentation of these 'speakers left a lasting impression with Jazz recordings from the renowned Chesky Records - the artists seemed to have jumped out of the cabinets to play in front of me. The recording venue's far wall extended 'into' my neighbour's flat and, with the lights dimmed, I could lose myself in the music.

Turning to Classical, I dipped into the Orpheus Chamber Orchestra's A Little Light Music (DG 429783), which contains some well written yet not widely-known pieces by Mozart. The orchestra was accurately located in the sound stage, something of a holy grail to a lot of Classical listeners since it gives a real sense of presence. It was more obvious here that the Kendais' tonality tends to the drier side of neutral though. Overstep the mark with the volume and the upper midrange will start to dominate events.

Mahler's grand Titan Symphony with Claudio Abbado and the Chicago Symphony (DG 445565) revealed another minor flaw. In the second





movement, the timpani begin rumbling along after a brief rhythmic

development by the cellos and doublebass. There was a lack of real low-end definition to the timpani, which sounded quite woolly down at the limit of the Castle's response.

The Kendals are appealing little loudspeakers. True, their midrange and slightly blurred bottom octave may not be to everyone's taste but, if you treasure clarity and an open sound stage more than warmth and outright bass extension, there are many worse ways to spend £450 ●

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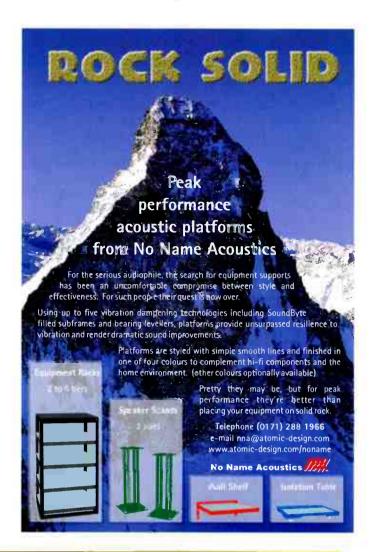
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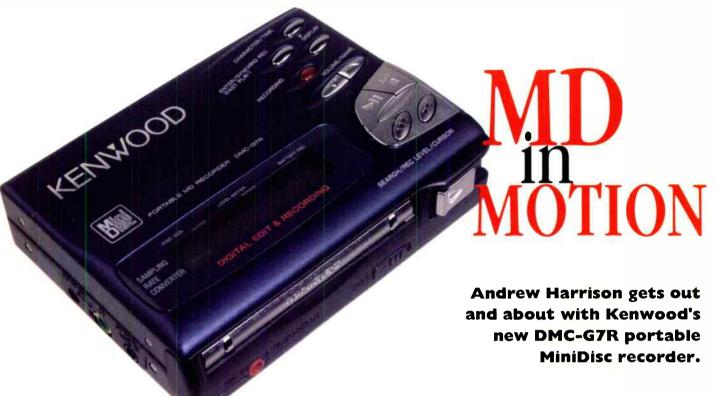


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ow do you know when an audio format has really arrived? When eager buyers start flocking into their local electrical retailers for it? When every forward-thinking manufacturer has a couple of models in their line-up? Or maybe it's when the format receives its paternal blessing from the hi-fi press? Perhaps it's one or all of these, but love it or loathe it, MiniDisc and machinery like Kenwood's DMC-G7R portable recorder have definitely arrived.

You couldn't exactly describe MD's progress as lightning - better late than never would be more appropriate. And now it's finally here, where does a portable MD recorder fit into the musical life of hi-fi enthusiasts?

A lot of people enjoy music on the move, whether it be commuting, walking the dog or jogging around the park - the huge success of portable cassette players testifies to that much. And since MiniDisc equipment is still a not-inconsiderable investment it makes sense to combine a mobile player with a home recorder, which is what Kenwood amongst others have decided to do.

The DMC-G7R with ATRAC 4 measures a pocket-friendly 108mm by 78mm by 27mm. Power comes from a dedicated rechargeable Lithium battery, supplied along with its charger and inear headphones with detachable remote control for the sum of £330. The

competition isn't weak though - Sony's MZ-R30 records too but costs £30 less.

Listening to the Kenwood in the context of a domestic hi-fi system was a mixed experience. The sound was crisp and even, images occupying their own spaces. Dynamics swung easily from the tiniest triangle strikes to the most thunderous of timpanic onslaughts and silences were just that. In every area where cassette has been faulted, the little Kenwood excelled. Track access was rapid, and MD's editing and naming facilities formed the icing on the cake once I'd mastered the little multifunction buttons.

Cassette, in the form of Sony's WM-D6C professional Walkman, showed there was still a lot of fight left in the old format yet. For example, the DMC-G7R's stage width was limited to strict boundaries - through headphones there was an absence of that out-of-head sound where recording venue acoustics or engineers' trickery can widen the scale of presentation. It also had what could be termed an 'understated' bass response which took some of the warmth from music.

The D6 turned out to be more of a communicator as well. Given a metal tape to keep down noise and extend dynamics, it captured the speed and drive of Rock in addition to the delicacy of Classical music. Played on the Kenwood tunes lacked that vital fluidity and pace because of a perceptible loss of

sustain, especially on piano.

In day-to-day use the DMC-G7R is a pleasant travelling companion that provides fuss-free listening in a very small package. Navigating your way around functions other than simple playback requires some patience initially and the format is not as resistant to bumps as the advertising suggests. This MD portable uses a ten-second memory-buffer for shock protection but continuous agitation from purposeful walking caused it to trip up on occasions.

As a maintenance-free pocket-sized portable with good battery life that doesn't resemble a housebrick like the Sony WM-D6C, the DMC-G7R scores well. And even if it fails to better analogue alternatives, it'll still please ears attuned to the crispness of digital home recordings •

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y this time next year, several important issues will have been settled. Questions ranging from, "Is the Millennium Dome a complete waste of space?" to "Will MiniDisc survive?" will be resolved. But the answer I most want concerns the great super-CD debate. The scuffles going on over competing systems (DVD audio, Direct Stream Digital (Philips and Sony.) will hopefully be history, and the new highresolution digital audio disc well on its way to the High Street.

With every photo of Japanese DVD machines published we contemplate the heady prospect of an audio disc so advanced it makes existing CD look positively Neanderthal. Hi-fi magazines world-wide are beginning to get questions like, "Should I buy a new CD player, or wait a

year for super-CD?" The idea of affordable, topquality digital audio is tantalising, that's for sure.

But aren't we missing something here? Haven't we forgotten to ask the most basic

question of all - whether this new generation of 'uber-player' will actually sound any better than current, bog-standard Compact Disc? With such a dramatic technical superiority over CD it might seem stupid, but as CD itself proved with LP. paper specs don't always mean better sound. Surely we should have learned that the latest isn't necessarily the greatest?

In truth, those who reckon super-CD will automatically better our current, cooking 16-bit CD are ignoring a critical factor in the equation; development. What these people are really asking is, "Is a theoretically superior but unrefined technology better in practice than an inferior one with countless years of development behind it?" Put like this the promise of all those extra

David Price

digital bits isn't quite so

Think about it like this: we've now got transports optimised for reading 16-bit CDs superbly - any keen audiophile can tell you which players have the to NICAM and Dolby Digital than hi-fi. In five to ten years, super-CD will doubtless be a knock-out, but industry professionals whose judgement I know and respect say that at the moment, our current high-

"Rather than blaming the technology itself, the problem with CD sound lies in our hitherto inadequate digital engineering. "

> best transports, and which good ones work best with which DACs. We've also got 16-bit DACs that sound far better than they've any right to, considering the paucity of digital data they have to work with. This comes not from fancy, state-of-the-art digital technology but painstaking research and development. Everything from powersupply regulation and internal earthing to digital filters and analogue output stages are meticulously fettled to sound right. This takes literally years and years to do, which is why high-end CD players aren't changed every six months like their budget brethren.

Along comes super-CD with theoretically superior resolution, but it's likely that most of the development work will have been done by big corporations more attuned end players beat the new machines they've heard hands down.

A number of hi-fi luminaries, including Linn's Ivor Tiefenbrun and Naim's Julian Vereker, have recently intimated that in their opinion standard 16-bit still has a long way to go. Rather than blaming the technology itself, the problem with CD sound lies in our hitherto inadequate digital engineering. Interestingly, this is precisely what they were saying about vinyl as recently as five years ago, and they were right about that too.

We know CD can sound dynamic and rhythmic witness Linn and Naim's own range-topping players. We know it can communicate emotionally like DPA's Enlightenment. We know CD can sound effortlessly musical, like



the best Pink Triangle players. And we know it can give tuneful, powerful bass like those firstgeneration Philips designs. The task is to get the best of all worlds, and then ratchet down the price with mass production.

Until recently, CD player manufacturers have majored on getting costs down rather than quality up. Contrary to what some mags tell you, high-end players from a decade ago really aren't that far behind modern equivalents. (This was brought into sharp relief when I heard a 1984 Philips CD202 - its superb die-cast metal CDM1 mechanism driving that crude 14-bit four-times oversampling DAC was still amazingly musical.) Only now are high-end players really beginning to outclass the early machines comprehensively. If super-CD simply means switching to a higher digital specification but continuing with flimsy transports, poor power supplies, bargain-basement DACs and nasty op-amp output devices, we'll be nowhere closer to nirvana.

This is what worries me. It would be so easy to rush out the new superdiscs and players, advertise them as 'technically perfect' (sound familiar?) and then sit back and let the cash roll in. Once again, buyers would snap them up expecting great things, and be disappointed. Let's hope history doesn't repeat itself •

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he Denon TU-S10 is one of those rare products in hi-fi that just exudes class. On first inspection I guessed £600 would be the minimum necessary to take it off Denon's corporate hands such is the quality of the champagne-gold casework. I'd have been seriously wrong though, as the TU-S10 sells for a solitary penny under £400.

Despite its uncluttered fascia this tuner isn't short of features: AM/FM bands, 40 presets, Radio Data Systems, two aerial inputs and a remote control. On the other hand, obvious by their strange absences are a mono switch and a signal strength meter, both useful facilities.

The TU-S10's quality image is helped by an 8mm-thick aluminium front panel and a copper-plated steel chassis which helps shield the innards from extraneous electrical noise. The control buttons work in a slick, positive manner which only goes to reinforce the Denon's 'feel good' factor.

Rolling across the airwaves I paid a visit to Radio 3 and a Joan Bakewell interview with Dame Joan Sutherland. Through the Denon it was readily apparent that the interview was taking place in a cramped studio. A small amount of sibilance to the two Joans' voices didn't prove distracting as I was drawn away from the cosmetics of the sound and into their conversation.

There followed one of Joan

Sutherland's performances of Bellini's Norma in which she duets with Marilyn Horne. It wasn't difficult to imagine myself in a large concert hall so well defined was the acoustic of the venue. Tonally the Denon erred on the bright side of neutral as our measurements had suggested. This served to highlight detail at the expense of relaxed long-term listening in systems that are themselves a tad bright.

The backing orchestra for Norma had impressive scale and instruments were clearly discernible - deep double-bass notes were controlled though the actual detail rated as satisfactory rather than great. Of greater significance was a lack of solidity and weight which left the TU-S10 sounding a little thin and insubstantial. Vocals showed the Denon in a better light with their easy articulation and expression.

The Denon was rhythmically adept as a switch to Virgin FM and George Michael's 'Faith' proved. None of the song's zest had been leached out and there was an unstoppable drive which kept me listening. And despite that lift in the upper regions the guitar solo didn't end up sounding sharp or unpleasant.

Bass was once again impressive not so much for its weight and slam but definition and tunefulness - Denon have got the balance right here since heavy, loose bass soon becomes tiring. Male newscasters, the classic bugbear of most tuners, were reproduced with only small traces of the chestiness and sibilance that is normally apparent.

Classical music failed to trip the Denon up, its detail retrieval coming to the fore in realistic instrumental harmonics and textures. Only that treble thinness stopped it cleaning up in the £400 price bracket.

Denon's TU-S10 certainly looks like it should cost a lot more than it does, designed as it is to fit in with the rest of the company's flagship components. It almost manages the same feat with the way it sounds, but it can't quite conjure up the warmth and colour of something like the Cyrus FM7 for the same money or Naim's NAT03 at £595 •

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WORLD VERDICT



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The TU-SIO is a stylish tumer which has a detailed sound but needs careful system matching for best results.

Measured Performance see PIII

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S Marlin House, The Croxley Centre, Warford WDI 8YA. Tel: 01923-819630. Fax: 01923-236290. Teach has already established a virtual world-dominance in the manufacture of precision recording equipment and data storage products and the company is now turning its attention to its core hi-li and audio related products. The Tokyo Electro-Acoustic Company (hence TEAC) was formed in 1956. Over the years TEAC has produced some of the world's most outstanding recording equipment, including many excellent alfordable home cassette decks (for which the name TEAC became almost synonymous) and by the time of the dawning of the digital age at the beginning of the 1980's it was internationally aclinowledged as a world leader in audio technology with a string of high fields pinst; to its name 1997 saw a significant turning point for TEAC with the launch of a superto new mini-system, a newly developed VRDS mini CD player and a British designed CD player.

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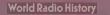
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VINTAGE VIRTUES

by Haden Boardman

long with the Rogers Cadet MkII and the Quad II, there can be no other valve amplifier as popular in the 1960s as the Leak Stereo 20. Introduced in 1958, the Stereo 20 used the same basic circuits as all of Harold Leak's 'Point One' power amplifiers. The first of these was the classic mono TL12 Point One, the second an economy version, the TL10, which could only lay claim to 'Point One' percent distortion up to five watts rather than its full output. There was also a 'Public Address' TL25A, although this wasn't a member of the 'Point One' family.

At the end of the 1950s, Leak



redesigned the range and added to it. There was the TL12+ with its EL84s, the TL25+ with the larger EL34s, and the most powerful of the three, the TL50+ which used a pair of KT88s. No prizes for guessing the output power of each! The sad thing is, the bigger they

get, the worse they sound. The TL12+ is the best of the bunch, the '50 the worst by far. As for the TL25+, it has the same basic output transformer as the TL12 and sounds hardly any more powerful.

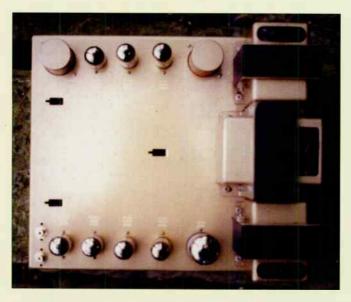
At the same time in 1958, Leak launched two stereo amplifier chassis, the Stereo 20 (EL84) and the Stereo 50 (EL34). The same sonic rule applies here

- the smaller '20 floors the larger '50 and is far more reliable to boot.

In the Sixties, Leak revamped the Stereo 50 and turned it into a Stereo 60, which is even less reliable and uses strange dual wire-wound resistors which are impossible to obtain these days. (The same items can be found on the TL50+ and some TL25s). The later models are finished in a Charcoal grey and date from roughly the same period in the mid-1960s as the Garrard 401. These stereo amplifiers had pretty much the same circuit as the monoblocs but used ECC83s throughout the driver stages where the monoblocs used EF86s and ECC81s.

Out of the entire range, in standard form, the Stereo 20 has the best sound, followed by the TL12+. There are a couple of potential problems in the Stereo 20 - the mains transformer is a little marginal although it's fine in normal operation, and, as was usual for the time, the input sensitivity is very high at 100mV for 10watts output. On the whole however, the Stereo 20 is an excellent design well executed.

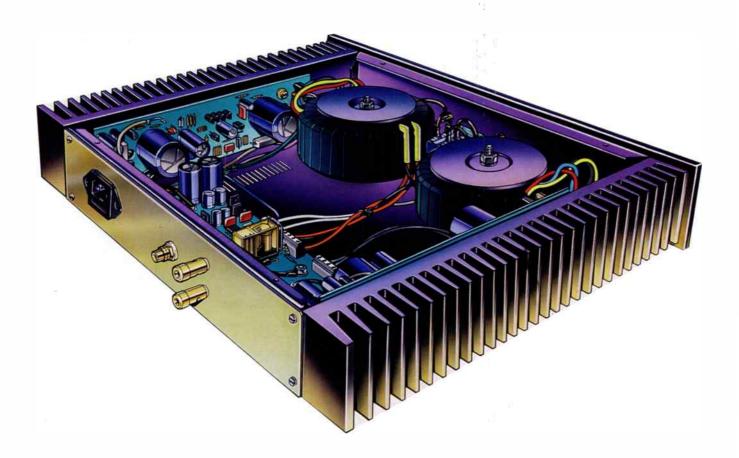
In standard, untouched form, the '20 is very sweet. The midrange is quite



Along the top of the chassis are the right-hand channel's ECC83 drive valve (left) and the EL84 output valves (right). Along the bottom the same valves in the left-hand channel are fronted by an ECC83 for the input section (left) and the GZ34 rectifier (right).



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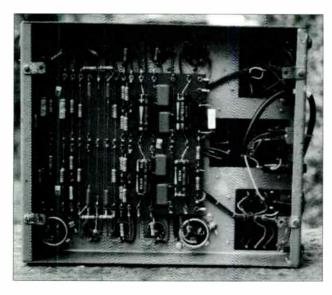
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World Radio History



Unless your Stereo 20 is a mint original sample, the best bet is to rebuild it with modern components like Elna electrolytics and metallised-polypropylene coupling caps.

lucid while bass and treble are a little rolled off, but then that's all part of the 'vintage' experience. More to its credit is the way the amp reveals those little instrumental and vocal details that make all the difference. In comparison to a new, modern amp of about £500 though, the Stereo 20 is amazing. The solid-state competitor obviously has more power and will play much louder but, like most valve amplifiers, the '20 has a real musical heart. Unfortunately, that's something that most transistor amplifiers, regardless of price, just don't possess.

A few words of warning on the service side. The mains transformer, as mentioned earlier, can be problematic. If you're thinking of purchasing a Stereo 20, check the underside for large amounts of wax which may have run out of the transformer if it's been overheating. More importantly, check the 100ohm, three-watt safety resistor (normally green in colour) is still fitted at the base of the board near the transformers.

As the amplifier ages, old EL84 valves pass more current than the 48mA specified and coupling capacitors 'leak' electrically with age, which means the output valves will pull even more current. It is extremely likely the main electrolytic reservoir capacitors will be leaky too.

With the three-watt resistor fitted

and the amplifier operating normally (ie, capacitors and valves in good condition), this resistor dissipates two-and-a-half watts and therefore runs pretty hot. Do not be tempted to change it - it is supposed to run hot. If a coupling capacitor fails and puts a positive voltage onto the control grid of the output valve, it will pass more current and may eventually go virtual short

circuit. The resistor will then get extremely hot, and, if fitted correctly, will de-solder itself from the board, thus protecting the mains transformer from damage.



Using a modern pre-amp via the Stereo 20's phono sockets will give much better sound than Leak's matching Varislope or Point 1.

If you are running a Stereo 20 with a higher wattage resistor fitted here, then get it changed to a three-watt one pronto. The number of barbecued mains transformers I have seen because some so-called engineer has fitted a larger resistor here rather than curing the actual fault is depressing.

The quality of the passive components in the Stereo 20 wasn't great but they do sound nice. Those that invariably need to go are the coupling capacitors, the output valve cathode resistors (use 270ohm at two-watts), the output valve cathode resistor bypass capacitors and the two electrolytic 'can' capacitors. These last two can be troublesome - there's a lot of ancient 'new old stock' floating around, most of which is probably worse than what you're trying to replace!

An easier option is to buy tiny switch-mode power supply capacitors (47uF, 400V) and mount them on the base of the old capacitor. To do this, leave the earth tag on the can connected and then cut off the two positive terminals. The earth tag anchors the new caps which can be secured in position with a dab of silicon adhesive.

To be honest, unless you have a totally mint, original amplifier, the best idea is to strip and rebuild it completely - just remember that three-watt 100ohm resistor. Caution should be exercised when it comes to the GZ34 rectifier as well. Never replace this with solid-state diodes - their performance from an audio point of view is inferior and they stress the mains transformer heavily.

Leak's power amps may be great at their best but the same can't be said of the matching pre-amplifiers, the Point One and the Varislope. They might suffice as a stop-gap to partner CD players, but they are members of that select breed of British pre-amps that have an output signal substantially smaller than the line-level input. To top that, the phono stage is poor and the controls are noisy. The best thing you could say about the earlier versions is that they look nice.

But the main thing is the great sound of the Stereo 20. The quality of its output transformers was impressive, and due to this the performance considering its price in standard form is excellent. Pay about £200 for an unmodded Stereo 20, less for a non-mint example and up to about £350 for a fully rebuilt and modified version •

uilt-in obsolescence. Anyone who's purchased a computer at some point will know exactly what I'm talking about. No sooner have you purchased your 'cutting-edge' numbercrunching marvel than something more powerful comes along in a matter of months. The same is true of hi-fi, only on a rather less frenetic time scale.

It happens with individual components. For example, when CD was originally introduced all you could buy were multibit DACs. These then gave way to single-bit, or Bitstream, designs. Whether they were any better didn't seem to matter - Bit-stream was supposedly what people wanted. Now anyone in the market for a quality CD

player has to decide whether to go for HDCD (High Definition Compatible Digital) or not.

This is all well and good when we're merely talking about technological advances within specific formats. When the entire format is under threat it becomes a different matter.

In the 1960s we saw valves making way for transistors. During the 1970s it was the turn of Compact Cassette to close the door on reel-to-reel (and the various other recording formats that had been launched with little success). The last decade saw the rise of CD over vinyl, whose sales plummeted.

What about the 1990s then? Well, since the beginning of the decade there has been much speculation as to the fate of the Compact Cassette and its eventual replacement. Last year looks to have been a turning point in the fortunes of a technology that was never intended for high-fidelity use

from Dominic Todd, our man in retailing

anyway.

Over five years ago the battle between DCC (Philips) and MiniDisc (Sony) began. Although it was generally agreed that the Philips format sounded better, the Sony system offered the most potential

battering too.

I've seen first-hand the slump in sales of cassette decks priced above £200. Only the very best, such as the Yamaha KX-580SE, are still selling, and even then at a greatly reduced rate.

Cassette was dealt a "I've seen first-hand the slump in sales of cassette decks priced above £200."

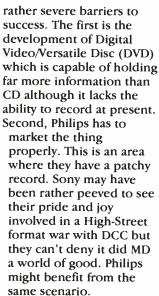
> with fast access times and a plethora of editing features. Despite this, neither really caught on. Up until this time last year it seemed both were dead in the water. Then Sony mounted one last marketing offensive with a revised machine that actually sounded decent and cost under £300.

The clumsily-titled MDS-JE500 began a price war in the High Street that raged on right through the summer, autumn and winter of last year. This model and its predecessor, the MDS-JE510, were (and still are) selling for as little as half-price as the major hi-fi retailers battled it out for volume sales and image enhancement. The result was that tens of thousands were sold and they're still selling at a prodigious rate. So much so that not only was DCC firmly knocked on the head but, for the first time, Compact Cassette began to take a

further blow with the withdrawal of Nakamichi from the market. There just wasn't any other company in the business which had amassed the same expertise as Nak. Without mechanical miracles like the Dragon to aspire to, the whole image of the format began to wane, leaving the door wide open for MiniDisc. So that makes MiniDisc the victor in the recording format battle with its future assured? Well, not quite.

Right at the end of last year, Philips brought the price of a recordable/rerecordable CD player down to around £500 with the CDR 870. Blank CD-R discs also came down to around &3 while CD-ReWritables were rather more costly at £16 a hit. Most reviewers agreed the system outperformed MiniDisc. Round two to Philips then? Perhaps.

Philips face several

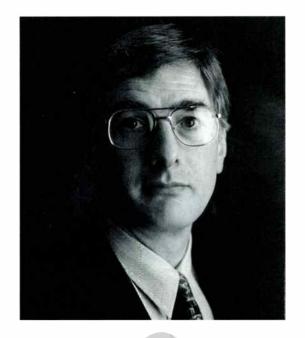


Finally, as we saw with the VHS/Betamax clash, it doesn't matter if one format is technically better than the other. What counts is price, availability and marketing. There's a lot of people out there with MiniDiscs already who are unlikely to be ready to switch to another format. Instead, they're telling friends how good MiniDisc is, and believe me, word is spreading rapidly amongst even those with very little (or no) interest in hi-fi.

The fate of MD and CD-R/CD-RW is going to be the talk of the pundits this year but, whatever happens, I don't think there's going to be room for both. It's ironic looking back to those former format losers - valves, reelto-reel and vinyl have all acquired cult status and loyal followings. Perhaps the hardy Compact Cassette will have the last laugh after all

This man can't believe what he's hearing...





...But it's true.

Peter J Comeau is no ordinary reviewer. As designer of the only product to win the coveted What Hi-fi Best Loudspeaker Award three times in succession, he's generally regarded as the guru of small speakers. With 30 years'

experience as a specialist hi-fi retailer, Cercussion is firm co-founder of a highly respected UK hi-fi manufacturer and one of the 'terrible three' who pioneered subjective reviewing in the staid hi-fi press of the 1970s, his opinion carries formidable weight.

and practically floor shaking in its intensity - just a few bars and you are already reaching for your wallet. **99**Hi-Fi News & Record Review

Seasoned hi-fi critics are notoriously hard to impress. So how come we weren't surprised when Peter J Comeau CC...The 12i marks enthused so fulsomely about our new 12i? "They sound like a grand's worth of exotic compact," he wrote in October's Hi-Fi News.

"If Celestion can achieve this sort of performance for a miserly figure, why are most of the speakers that arrive on the market so poor in comparison?"

Well, we can't speak for anyone else - but we know what makes the 12i such a remarkable performer.

The smooth, natural-sounding vocals? Celestion's 19mm tweeter, whose neodymium magnet is ferrofluid-cooled for improved power handling.

The phenomenal bass response? 130mm long throw bass drivers, which allow the cone extended movement without removing the HF coil from the magnetic gap where energy is most concentrated.

The acoustic purity and lack of distortion? The use of laser interferometry to tune out the response peaks of conventional speakers. Celestion crossovers to ensure seamlessly smooth transitions. Mounting the drivers and reflex port in a dense one-piece composite baffle to minimise resonance. Cabinets computer-designed to eliminate box coloration.

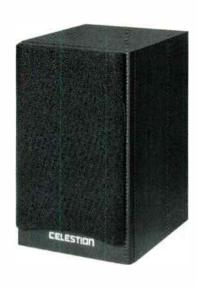
In the words of the Hi-Fi News lab report, "the horizontal off-axis trace is brilliantly managed." To the listener, that means the same seductive audio experience wherever you sit in the room.

CELESTION

the baseline performance above which all other speakers should rise. But do they? Do they hell! >>



No wonder the 12i reproduces the most demanding material with such accuracy



and emotional depth.

"The coherence is extraordinary," Peter J Comeau remarks. "That each note is so well defined is remarkable for a speaker of this class."

Peter concludes "When you close your eyes, they (the artists) might just as well be in the room with you."

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At only £119, no wonder he couldn't believe his ears.

Nothing prepares you for the sound of this new model. Ask listeners to guess the price, I guarantee an answer closer to £500 than the spare change you have to sprinkle on the counter to own a pair.

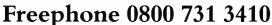
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The 12i is available at:

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DESIGN MATTERS

David Price looks at the changing face of hi-fi design.

Until recently, hi-fi styling was fast losing the plot. The once weird and wonderful world of design was becoming sanitised, uniform and deathly dull. Gone were the crazy wedge-shaped cassette decks and mad, cylindrical loudspeakers of the Seventies, and in their place arrived tedious black boxes. Where had all the excitement gone, the ideas, imagination and inspiration that should come standard with every hi-fi separate?

Of course, sound quality and reliability should always be primary concerns, but they're not the only ones.

Hi-fi should seduce the eye and pull on the heartstrings as much as it gratifies the ears. What's wrong with audio that sounds superb as well as looking and feeling the part too? Was it a design-bycommittee approach that resulted in hi-fi with all the aesthetic appeal of a toolbox? Like military intelligence, the concept of 'hi-fi styling' was becoming a contradiction in terms.

Fortunately, things are now taking a turn for the better. After more than a decade

the tyranny of the 'minimalist' black box is being overturned, and manufacturers are realising that hi-fi should be life-enhancing, with aesthetics and ergonomics to match its sound. The reason? Could it be the Midi system?

During the early Nineties' all-in-one systems and Audio/Visual boom, 'real hi-fi' makers suddenly realised there was little to differentiate their wares from the black plastic rubbish that masqueraded as hi-fi in the High Street.

So they finally had to take a good look at what buyers really wanted.

FORM OR FUNCTION:

While sonics and reliability are commonly-agreed engineering aims, a product's look and feel has been neglected by too many designers for far too long. Only now are manufacturers realising how important this is, along with the fact that what you house your circuits in actually affects the sound of the finished product.

Because electronic components are microphonic, the best thing to put them

neither.

in is some form of casework resistant to vibration from within and without the component. Unfortunately, the cheapo, thin-gauge pressed-steel affairs of most separates do

Cyrus was one of the first to appreciate this, and almost a decade ago their designers began using light, rigid die-cast alloy casings which not only look great but sound better.

Meridian, makers of some beautiful miniature pre and

power amps during the Seventies, opted for rigid plastic mouldings topped with glass, which damps vibrations, to house their latest 500 series separates. Michell Engineering has long used acrylic (aka perspex) for its excellent vibration-reducing properties. Although it's very expensive, it looks gorgeous, is easy to work with and sounds superb - ideal for hi-fi applications. Others agree, and acrylic now surfaces in everything from Pink Triangle Tarantella bases and

'70s excess - bigger was better.

Audiovalve valve amplifier cases to Thorens Consequence CD players.

Once a designer has chosen the right material to house the electronics, size is the next decision. Before integrated circuits and surface-mount components, a product's size was determined pretty much by what was inside it, but nowadays it's more of a marketing decision. Rose's Sean Sedwards says the standard 430mm width is de rigueur in Asia-Pacific



'80s tedium - black boxes ruled.

markets, but Europe prefers more petite products. Certainly, 'midi' is now the size of choice for British favourites like Quad, Linn, Meridian and AVI. The States though, with Japan obediently following, remains committed to the 'bigger is better' aesthetic - rest assured, Krell and Audio Research will never go midi.

But maybe the biggest variable for the designer is finish. LFD Audio's Dr Richard Bews believes it to be, "very market-dependent", with the UK still "notoriously conservative" in its penchant for black boxes. But abroad he says, "it's easier to be a bit more individualistic", with mainland Europe, and in particular Belgium and Germany, going for black fascias and gold detailing. By contrast, Far East markets want bright stainless steel or brushed



Midi - the size of choice for Britain.

aluminium finishes with gold detailing. SME's Graham Whitley concurs, saying their biggest export market is Germany,

which can't get enough of the company's classic Series 2 tone-arms finished in black and gold!

In Japan, champagne gold is the order of the day whether you like it or not. This means that imported British kit, much of which comes in black, stands out from the crowd. Japan's

hardcore hi-fi nuts like this, and it's certainly added to the appeal of UK components. Remember, this is where people buy left-hand-drive foreign cars (even though they drive on the left like Britain) to emphasise their cars' foreign origins! Aura's Japanese importer knows this, and despite the fact that the electronics are available in beautiful polished chrome, advertises under the slogan 'UK Blacks'!

STYLE WARS

Eighties hi-fi was all about awkward, unreliable, minimalist boxes, but today's designers are coming up with some attractive, fine sounding, user-friendly creations. Mission's Henry Azima says his latest Cyrus range was a result of, "questioning the validity of all the tin boxes, and asking why can't we do something different?" Other designers also asking this question include Alchemist, Aura, Copland, LFD, Myryad, OED, Rose and Roksan, who've all eschewed black boxes for svelte new separates finished in chrome, steel, brass and gold. Even Britain's more conservative hi-fi companies have pushed the game forward. Arcam has

abandoned its 'safety first' squared-off boxes for swooping, curvy fascias, and Quad - once the bastion of pipe 'n' slippers styling - has resurfaced with the 'carbon look' 70 series.

Real wood finishes are back in fashion after a decade as the poor relation of black ash. Dealers report that real wood veneered loudspeakers are selling better than ever, while some companies like Mission have started

is a second seco

Radical '90s - futurist meets retro?

offering Primavera wood-look vinyl wrap on their budget boxes! Efectronics manufacturers are also using it as a styling feature. Moth's range of Stan Curtis-designed separates is fronted by real

Quad ESL 57 - form and function in harmony.

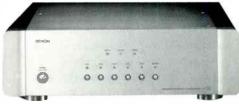
finishes to blend with the home and Unison Research's Simply series valve amplifiers have more fine Italian burr veneer than a Maserati Bi-Turbo. Other valve amps are increasingly using chrome, stainless steel and brass top plates and casings to striking effect when the valves are glowing.

One of the surest signs of good design is when form and function are combined, with the engineer making a striking visual feature out of engineering necessity. Take Michell's Alecto amplifier for example, which uses its huge acrylic-encased toroidal transformer as a central styling cue.

Likewise Quad's dramatic ESL 57 loudspeaker, whose clean planar lines derive from its electrostatic drivers and lack of a conventional box

cabinet. Most amazing is that this object of sonic and visual beauty dates back to 1957 - proof positive that good design is timeless.

Another, if slightly less successful, attempt to make aesthetic virtue from sound acoustic design principles was JR's 149, an innovative if imperfect Seventies loudspeaker with a cylindrical cabinet of rigid aluminium. Latterly, B&W has taken up the radical mantle



Big and brassy - the preferred look in Japan.

with its bulbous Blue Room Minipods, claimed to eliminate the colorations inherent in conventional box loudspeakers. And as for the high-end Nautilus with its weird rear protrusions, mere words cannot suffice!

At the less esoteric end of the market Tannoy's Six range has shown that innovative cabinetry isn't the preserve of the rich, with its distinctive polygonal shape offering fine out-of-the box imaging. Rogers, meanwhile, claims to have identified a 'life-style' niche in the loudspeaker market, having introduced a range of stunning plastics finishes on its dB101 - a bold, if risky move in a conservative market.

GOOD TECHNOLOGY

Ergonomics and user-friendliness are also finally occupying designers' imaginations. CD has long disappointed vinyl enthusiasts because they find it fiddly and unintuitive to use. After dispensing with the clutter that afflicts so many silver-disc players, Thorens' designer Helmut Leitner produced a stripped-down, top-loading format for the Consequence CD player. By relegating all the bells and whistles to the remote, this 'hands-on' design has a sense of continuity with Thorens' turntables of yore. Naim and Rega players also espouse this approach, along with a rapidly expanding clique of high-end Japanese players from Lux and Denon, for instance. How ironic that it's



home.

taken CD designers so long to build in true userfriendliness when the very first of the breed back in 1983, the Philips CD100, had it in spades.

ages for hi-fi 'purists' to come to terms with the idea The JR 149 tried to that systems can be blend hi-fi in to the convenient, easy to use and sound

It's also taken

good too. Not so long ago the UK hi-fi press derided the likes of Bang & Olufsen for making sleek, ergonomic products, but now they've finally realised that yes, convenience is a good thing. Offering remote control with your electronics isn't actually tantamount to selling your soul at all reviewers laughed when Linn introduced their first remote-controlled pre-amp a decade back, but now they wouldn't be able to work without one! Latterly, intelligent system remotes and bus-linking have become the order of



Early CD players were easy and intuitive to use.

the day, as implemented so affordably by Cyrus.

Nowadays, even the most flat-earth, dyed-in-the-wool vinyl junkies acknowledge that technology has its uses. The once fraught process of recording music for domestic and car consumption has been transformed with the introduction of MiniDisc. a remarkably fuss-free medium which makes

Lecson pre/power - '70s audio modernism.

cassette seem a real chore. And for radio freaks, the Radio Data System is nigh-on impossible to live without, what with its automatic preset programming, radio text and station identification. Both are proof that when technology is developed in answer to customers' needs rather than being pursued as an end in itself, it can reap dividends.



Mission 776/777 - amps with something to shout about!

DESIGN FOR LIFE

In the early Nineties most hi-fi manufacturers were still content to sell low-brow design to the public for as long as they could get away with it. Now things are changing, and finally the creativity and inspiration that once characterised British hi-fi is coming back. At last, hi-fi is becoming more diverse and imaginative through a combination of excellent industrial design and modern manufacturing

processes. This can only benefit buyers and manufacturers alike, so we say, "Long may it continue!"

SIGNS OF THEIR TIMES

Aesthetic milestones through the years.

QUAD ESL 57 LOUDSPEAKER.

Their dramatic swooping lines give the Quads an air of sci-fi kitsch without dating them. An awesome combination of form and function and surely one of the designs of the century.

MICHELL REFERENCE TURNTABLE, 1965

Using a platter mass-loaded with gold-plated brass weights, this seminal piece of industrial design found its way into moviedom (Stanley Kubrick's A Clockwork Orange) as well as the New York Museum of Modern Art.

YAMAHA TC-800GL CASSETTE **DECK, 1974**

Recognising that early cassette decks were gawky, fiddly things, Yamaha sought the help of Mario Bellini, who came up with this 'skislope' tape deck. The TC-800GL is a superbly-packaged machine with its striking wedge shape that still looks fresh today.

LECSON API/AP3 AMPLIFIER, 1975

A radical departure from accepted amplifier design, the pre-amp was a large, flat expanse of black plastic with colour-keyed slider controls for quick recognition, while the power amp's 'Post Office Tower' proportions gave it excellent heatsinking.

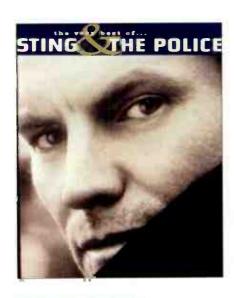
MISSION 776/777 AMPLIFIERS, 1981

A superb sounding pre/power combo that boasted lots of original engineering thinking, along with the Mission logo dramatically diecast into the fascias.





Jon Clarke



THE VERY BEST OF

Sting has been all things to all people at the peroxide Punk, the sensitive campaigner and the slick Jazz showman. Though he may have seen better days, he remains, above all, a living icon.

This album predictably runs the entire gamut of the man's various lifestyle choices down the years from 1978, when he was impoverished and desperate to impress, to the present, which finds him a reserved landowner.

The later numbers are particularly unimpressive, coming across as being apolitical and too smug by half. And not a Kayapo Indian in sight. Unsurprisingly,

The Very Best Of Sting And The Police draws most heavily from his early years, with half of the tracks recorded by 1983. This seems a bit unjust considering he has been a solo artist for twice the amount time that he wore the badge.

The tracks unfold in an arbitrary fashion, firing off with the immense 'Message In A Bottle' before taking a short hop and skip to land on 'Seven Days' from the recent Ten Summoner's Tales by track five. Thence back to 'Walking On The Moon'. Dr Who's Tardis could not achieve a more miraculous chronological translocation.

Certainly the Police tracks capture the best of the album, from the instantly likeable but faux Reggae of 'Roxanne' and 'Can't Stand Losing You', through to the obligatory 'Every Breath You Take' and the entertaining nonsense that is 'De Do Do Do, De Da Da'. It makes the very grave error, however, of leaving out tracks like 'Invisible Sun' and 'Wrapped Around Your Finger' - a gesture which will not go unnoticed by the die-hard fans.

>Sting's solo studio cuts are generally straight-laced, serious and far mellower in comparison, the best being the splendid 'Englishman In New York' and the eerie 'Fragile', which curiously has been covered by both Julio Iglesias and Isaac Hayes.

The rest serve only to show a dull

craftsman going about his business and the compilation ends on the biggest bum note of them all - the Puff Daddy-reworked 'Roxanne '97'; uninvited and unnecessary.

This slab of songs is worth buying in reality only for the Police songs, which begs the question: wouldn't it therefore be better to buy The Police's careerspanning Greatest Hits album released a few years back instead? Let caution prevail.



BIG WILLIE STYLE

Fnaar Fnaar, and I kid you not. Besides

being the resident Fresh Prince Of Bel-Air and part-time alien-terminator, Will Smith lays claim to real musical ability and a mean line in rap. Big Willie Style, his long-awaited return to the music industry, will either lay waste the critics or prove that he has been playing with his and everyone else's todger all along.

The man is clearly on the crest of a wave and will inevitably be ridin' on the success of Big Willie Style too, all the way to the tills ringing with receipts, I suspect.

This much is known - the man loves himself and leaves absolutely no room for doubt on this. The songs are almost entirely reprises of his earlier 'Summertime' - upbeat and positive where cruising is the norm and life is one round of beach parties after the next.

n this sense Will Smith, Philadelphia born and bred, is more in step with the languid, booty-loving Rap of the West Coast than the reflective political Rap on the Eastern seaboard.

Stripped down, the tracks range from hip-swivelling groovy Disco to just plain hip-swivelling groovy. The former is well represented by 'Gettin' Jiggy Wid It', which samples Sister Sledge's 'He's The Greatest Dancer', while 'It's All Good' positively loots Chic's 'Good Times'. Then, of course, there's the far

from downbeat 'Miami'.

Even the singles 'Men In Black' and 'Just Cruisin', which are also included here, are invigorating blasts of hardedged Pop/Funk. Crowd-pleasing though these are, the album also carries the low-tempo Bill Withers classic, 'Just The Two Of Us' and the swingbeaty 'Candy' where he gracefully but momentarily shares centre stage with someone other than his ego. That man happens to be Larry 'Word Up' Blackmon of Cameo who (only just) manages to get a word in edgeways.

Which all leaves one question unanswered - will pack leaders The Wu be gettin' jiggy wid it? Probably not, but

rock & pop record of the month

STRANGEST PLACES

Whatever happened to Edie Brickell and The New Bohemians? Has she now fallen silent after marriage to Paul Simon? You may well wonder, but for my money she disappeared only to come back as someone called Abra Moore, For here on Strangest Places is the same traditional song writing, the same sweet but devastating vocals and the same emotive subject matter.

An uncanny resemblance indeed, and the only main difference I can point to is that while Edie hails from Canada, Abra Moore hails from Austin, Texas.

Stacked with ethereal Folk, catchy ballads and swaggering Rock, Strangest Places has mainstream written all over it yet is edgy

enough for US tastes to be considered alternative at the same time. In other words, Alanis Morrisette triple-A-rated



abra moore

austin

corporate Rock it most certainly is.

Starting with the breathy 'Four Leaf
Clover', which is to be released as a

first single, the LP lifts off with a simple but quirky guitar riff, Abra's strong vocals providing the song's melody. A distinctive voice with great warmth it is too, a fact reaffirmed throughout the album.

Strangest Places may veer a little towards MOR on occasions, but there is surprising variety here too; take the Bluesy piano ballad of 'Happiness' and 'In The Light Of It All', the psychedelia of 'Keeps My Body Warm' and the Indie Folk/Pop 'Never Believe You Now'.

And if this selection isn't to your taste, more traditional Rock 'n' Roll fare can be found everywhere else on the album, from 'Don't Feel Like Cryin" to 'All I Want', where Abra's supercharged warblings plumb depths of rage reached only by Alanis herself.

Overall less rockin' than Sheryl Crow, less angry than Alanis Morrisette and less melodramatic than Meredith Brooks, Abra Moore is carving out another niche in a market increasingly besotted

with female-fronted Rock acts. No doubt she will cast her spell too. Abracadabra!

who cares when there's this much fun going on?



KETTLE WHISTLE

Perry Farrell, latterly of Porno For Pyros, came to prominence in the late Eighties with Jane's Addiction. A then up-and-coming band, they released Nothing's Shocking (1988) to acclaim but then disbanded at the height of their popularity at the Lollapalooza festival in 1991

>Jane's Addiction, it seems, has been resurrected with the release of Kettle Whistle merely to show off their past achievements since there are only two original songs here. The remaining 13 ditties are demos, live recordings and out-takes.

In their day they were as highly-prized as the innovative Pixies, likewise as non-conformist in their approach but with a special flair for pumped-up theatrics and twisted lyrics. The only weak attribute was that they were tainted by the ghost of Led Zeppelin, with repeating Rock-riff motifs and acoustic Blues brazenly used on all tracks. In short, as All-American as Chuck Norris.

Enlisting the support of the Chili Pepper's Flea as replacement bass on the new songs - the title track, 'Kettle Whistle' and 'So What!' - it is evident that it is business as usual for Perry and company. A healthy dose of atmospherics, distorted guitar and trumpet don't do much to alter the view. Chances are the new Jane's Addiction will be beggared by comparisons with its former incarnation and sink ignominiously.

There is, however, the

compensation of hearing Perry's extraordinary vocals again, if you like that kind of thing. Reed-thin but very powerful, they are best captured on the album's highlights, the magnificent 'Jane Says' and the hitherto unreleased 'Slow Divers'.

On the whole Kettle Whistle is grossly indulgent. You have, for instance, the plain silly 'My Cat's Name Is Maceo' written for Perry's cat but in homage to Maceo Parker of James Brown's All Stars, which ends up not so much funky as downright trifling. Then there's 'Been Caught Stealing', the world-wide hit, which is funky but rendered nonsensical by crass ad-libbing and an undisciplined studio jam.

Worse than that are the songs which were clearly not good the first time round, the early, thrashy demos and inferior textbook Rock that passes for most of the live songs. 'Mountain Song', 'Three Days' and 'Stop' are simply bump and grind of the lowest calibre.

Out-takes are usually out-takes for a reason and we know what that is, folks. There is no sign that the album even tries to please, and it is, to sum up, not one speckle better than it needed to be in order to be released.



THE ALBUM

Dr Dre made the collaborative album Aftermath last year with a special plea for black East/West appeasement in the wake of the shootings of Tupac Shakur and Biggie Smalls. "Collaborative venture" takes on a whole new meaning though with this latest offering from The Firm, a collective made up of Dr Dre, the New York Rap posse of Nas, Foxy Brown and AZ, plus an assortment of other luminaries, the most important of

whom are NY's Funk producers, The Trackmasters.

It is a veritable coming-together of the families - East meets West and even Coppola couldn't do it better. Each song represents part of a traditional Mafiosi storyline, including the mandatory family bickering, the deceit and the ensuing blood bath. To that we can add the drugs, the hos and the hard-core violence.

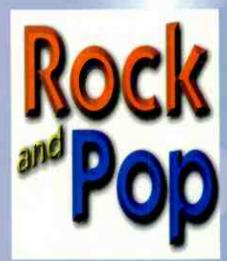
The scenes are splattered with driving basslines and roller-coaster rhymes; fittingly there is even a mournful Italian violin when The Executive Decision has to be made. Heady stuff but it's hardly opera.

The laid-back production is classic Dre and this is nicely complemented and funked up by the contributions of The Trackmasters who perversely choose, now and again, to throw in a jazzy George Benson-type guitar line just when the mood is anything but.

The femme fatale of the piece, Foxy Brown, makes them jealous again with her honed seduction techniques but takes a serious risk with the Gamble and Huff sampled '(You're Gonna Make Me) F**k Somebody Else'. I'm sure it was not intended to sound this way but the highly funky Rap diva with the dirty mind makes it sound as innocent as 'Boogie Wonderland'.

'Five Minutes To Flush' is the finest moment on an otherwise patchy album - a 4am cocaine bust by the Feds which is recounted in brutal detail and culminates in the high-noon shoot-out of desperadoes, all to the lilting strains of a Mexican guitar.

Despite the unevenness, while The Firm is certainly sophisticated it preaches to the converted, with the famous old adage murder and mayhem sells.





Sara Davis & Leon Palmer



23AM DECONSTRUCTION CD74321 54113 2

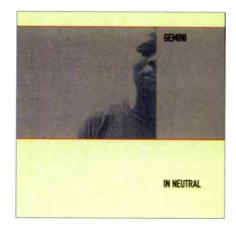
Robert Miles is the best-qualified Dance producer to win the Nobel Peace prize. He invented Dream House, the less-hectic-than-Techno dancefloor sound that curbed post-club violence in Italy. Miles' debut album Dreamland encapsulated the swirling, orchestral anthems with top-ten classics 'Children' and 'Fable' and had more of an impact on young Europeans than a police antiviolence campaign ever would.

23am has the potential for a similar effect. It combines a wider range of musical instruments and influences but still holds true to the Dream House vibe. The first track slated for release, 'Freedom' is a fine example of Miles' talent, building the soulful vocals of Kathy Sledge into a poppy, Radio I framework. But 'A New Flower' showcases Miles' ability to take the sound deeper with energised samples, Orbital-style, and the result is enigmatic.

Miles ventures further with 'Heatwave', a medley of chunky breakbeats, brass melody and Rock

geeetar, as if by way of musical revenge on all those critics who've claimed his records invariably sound the same.

The concept behind 23am is that the music is a journey, an expression of the emotions Robert Miles experienced recently whilst travelling around the world. The album certainly reflects a maturer, more complex identity and the broad span of musical flavours, from Classical to Drum 'n' Bass, amounts to a new, more cosmopolitan style. But the real message of 23am deals with the politics of society, from the mysterious 'Everyday Life' to the inner-sleeve plea for humankind to reject "destructive materialism". This man ain't heading for a Peace Prize, he's heading for sainthood



GEMINI
IN NEUTRAL
DISTANCE SUB 4844.1

With two releases already out on Relief and the highly acclaimed In And Out Of Fog And Lights on Peacefrog, Spencer Kinsey squeezed one more album out in 1997 for Distance which nearly slipped through the net. Gliding along the fine line between Techno and House with ease, Gemini's In Neutral turns away from the tried and tested formulas and takes a new approach. With more than enough Chicago-style House around at the moment, Gemini still manages to stay ahead of the rest.

The trademark heavy-jacking Chicago rhythms appear pretty much throughout, even in the mellow, lo-fi stuff. However, the routine is easily outweighed by the innovative - Gemini is pulling new sounds out of the groove to the last.

People who lean toward the Techno side will appreciate the bugged-out, skipping flavour of On This Planet, a large and loud one for the dancefloor. In a similar tone yet deeper is the fast and spacey 'Shadowland' with its Techno tinge.

Sitting comfortably next to these are the cooler sounds of tracks like 'De Bass' and 'The Wave'. On top of the customary punchy basslines Gemini treats our lugholes to a cocktail of chord washes and soft samples with these numbers. There's nothing that hasn't been done before here, but at least it's done in style.

The slower, funkier tracks are obviously the tunes most suited to the at-home-with-my-hi-fi fraternity. 'Motion' is down-tempo enough for residential raving but marks a mere warm-down to the mysteriously-entitled final track, '?', which retreats into a slow-motion mixture of beats and the occasional bleep.

As you'd expect the album provides its fair share of thrill to go with the chill, so you'll still be able to go mad on the dancefloor. And most jocks could easily be persuaded to find room in their collective boxes for the likes of 'Campanula' and 'Memory'. In fact Houseaholics everywhere will find

Gemini's magic deep and invigorating. After all, if this is the Gemini-mobile in neutral, just imagine what it'll be like when it gets into gear.



VARIOUS ARTISTS

SOUNDS LIKE GLASGOW PIAS PAN 1002 PROCD

Dance music compilations will try anything to improve sales. Box sets, CD ROMs and OTT deluxe packaging are old marketing chestnuts, but moving into the travel business and using different city names in your quest to flog CDs is a turn-up for the books.

Unfortunately though, the collaboration of Pan productions and Play it Again Sam aren't offering a free city-break with each album. Mind you, Sounds Like Glasgow showcases an intriguing view of some of their finest music so you needn't leave your living room to sample their handiwork.

Featuring a mixture of quality
House, the odd Trance classic and
some excellent down-tempo funksters,
this compilation impresses in most
departments. The accessibility of the
music, demonstrated by the opening
catchy underground House groove 'Jazz
The Sea Turtle' by 4AM, gives a familiar
feel to the album. An improvement on
the labels' first foray into this theme,
the more broad-minded Sounds Like
Paris album, Glasgow is, as you'd
expect, a bit harder hitting.

We are treated to only one hardassed Disco romp of the kind so common on the Paris compilation, but 'Bedroom Hustler' by East End Trax with its Reggae-style chants and '70s whoops is Funk with enough freak to satisfy any serious Glaswegian clubber.

Once the Dubby stuff has run its slow, subterranean course, with Fresh and Low's aptly-named 'Wind On Water' deserving special mention, it seems the obvious counter is up-tempo House. Instead, to my delight, we are exposed to a couple of spell-binding headstretchers - two decelerated Trance tracks, URB'n'Rl's 'Aquan's Realm' and the unforgettable 'Funk De Fino' from Gypsy, a 10-minute orgy of phasers, subtle sound scapes and hypnotic background breakbeats.

If that's the climax of the album for lovers of Trance and Ambient, then the tracks that follow should give Househeads something to groove to.

Representing the best of underground originality without being too 'out there', the Housey tracks chosen for this album all have that, stomping four-four beat and a raw, Glaswegian Garage feel. Devoid of vocals, efforts from Robinson Wall Project and Slam rely on their soulful piano samples and pumpin' basslines to keep us uplifted.

Need calming down after all this? Try Fresh and Low's second down-beat exercise in hi-hat-laden Trip-hop, 'Freefall', punctuated by some eerie female wails and sexy sax.

Whether you're looking for Scottish sound scapes or city breaks the Sounds Like posse should give you some ideas. I wonder when they'll bring out the Istanbul version. Now that would be interesting!

dance & ambient record of the month

COXBOX DRAGON TALES BLUE ROOM RELEASED BR058

Danish Techno outfit Frank'e, Peter Candy and Ian Ion were first discovered by cult German Techno fiend Sven Vath, which was a very good start indeed. As trio Koxbox they quickly established themselves in the fickle underground scene with singles 'Too Pure' and 'Stratosphere' on the very hip Harthouse label. What worked for beat-busting Vath was their catchy breed of Techno'd up Trance and it's this innovative sound which will catch the imagination of Trance lovers the world over, many of whom will have experienced the live Koxbox in a recent wave of tours.

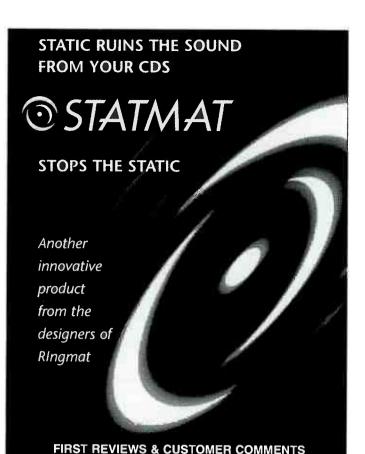


Koxbox followers and, for that matter, anyone with a healthy interest in meaner, harder beats will love Dragon Tales, particularly those who

appreciate a mystical, psychedelic quality of music too. Tracks like 'Searching For Psychoactive Herbs' and 'Electronic Brainwash' typify the hypnotic, acidic sounds of Koxbox while every track on the album showcases the ingenious Trance/Techno concoction.

The Koxbox sound befits their new label, Blue Room Released, who traditionally always opt for Techno - Juno Reactor and Silicon Attic have done well on this B&W subsidiary, benefiting from top-class technology and crisp sound reproduction.

A must for disillusioned Trance-heads who like it meaty, Dragon Tales makes the Acid-Techno genre exciting again. Fantasy on CD.



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"..It definitely worked. What I heard was impressive...the sound isn't just smoother, sweeter or sharper. Rather, the music itself seems to change, becoming rhythmically more cohesive, and altogether more purposeful and coherent."

Jimmy Hughes (Hi-Fi Choice, December 1997)

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Simon Hopkins



WOMAN'S DAY GRAMAVISION GCD79516

Perhaps it's just me, but over the last year or two I've become increasingly aware of a growing body of trumpeters making some of the most exciting lazz electric and acoustic - around. Off the top of my head I could cite: one-time guitarist, Sonic Youth-mentor and minimalist composer Rhys Chatham, whose EP Neon, a collaboration with programmer Martin Wheeler, saw him marrying post-Miles FX-enhanced trumpet lines with sharp Hip-Hop beats; the Scandinavian Nils Petter Molvaer. whose Khmer album I reviewed here rather enthusiastically a couple of months back; the ever-present Japanese Toshinori Kondo, whose harmonised, multi-tracked, swooping arcs of melody have made something of a reemergence, with his playing gracing work by such Ambient music stalwarts as David Toop and Paul Schütze; the New Yorker Ben Neill (another colleague of Schütze's), who also works as much in the Ambient and Electronica fields as in Jazz, and has pioneered the use of an instrument he himself made, the double-belled "mutantrumpet";

Graham Haynes, son of the great Bebop drummer Roy and one of the few genuinely mainstream virtuoso Jazz trumpeters to be exploring a wider influence-base and sound palette than the tradition might ostensibly allow; Dave Douglas, a quarter of John Zorn's on-going Klezmer-meets-Ornette project Masada, and, as his own Tzadik-released album Sanctuary showed last year, a fine composer and conceptualist in his own right.

I say all this by way of introduction to trumpeter Ron Miles for perhaps two reasons. Firstly, this has all come as a bit of a surprise to me. For pretty much outrageous reasons I'd personally not really looked to either trumpet or flugelhorn players in expectation of exciting music, despite the obvious objection that some of the greatest electric Jazz albums of all time came from groups led by Miles Davis and Eddie Henderson. I don't know, think of it as an over-reaction to that (admittedly virtuosic) tradition-loving, innovation-hater Wynton Marsalis.

Secondly I bring this up by way of confession; I now realise that Woman's Day, released arguably too early last year to deserve coverage, is easily one of the year's outstanding Jazz records. Yet were it not for the presence of guitarist Bill Frisell among its personnel, I might never have bothered picking it up, which would have been disastrous.

Anyhow, an initial - and, as I say, somewhat late-in-the-day - listen to the album didn't have me as bowled over by Ron Miles as I have been by some of the other aforementioned players, but intrigued me enough to go back to it and keep going back to it.

On the surface, Woman's Day isn't in any sense a breakthrough album. The kind of music on display is exactly the kind of serious-yet-accessible, free-ish

(but never, ever capital-F Free), somehow essentially optimistic contemporary take on post-Bop and modal playing that has typified the output of such record labels as ECM and JMT for a long time now. Yet there's something else at work here, some rare passion, some sense of adventure in the arrangements that sets it apart, at any rate in at least half the material here.

Other than Frisell, whose unquestionable stance as one of the most important lazz guitarists of the last two decades has, of course, made him a regular visitor to these pages, every player here is a new name to me. The album's basic group is a quartet: Miles, Frisell, bassist Artie Moore and drummer Rudy Royston. They're joined, on occasion, by guitarist Todd Ayres, whose power-chording forms a nice counterpoint to Frisell's flightier, if equally passionate, soloing (his playing on 'Mommy On Top' is pure King Crimson), second bassist Kent McLagen, bass clarinettist Mark Harris (I have to admit to bias here: the presence of bass clarinet on any Jazz record irrationally excites me) and pianist Eric Gunnison.

Well, relative unknowns they may be, but this is a fine group. All the pieces here are Miles' own. Yes, they owe a lot to certain influences; to my ears the spectre of the UK's own master of understated romanticism Kenny Wheeler looms large over many of these pieces (although there are touches here, touches which really make the album, that would never turn up on a Wheeler date - sudden bursts of guitar feedback, unexpected driving riffs). But, they have their own character too, and these musicians make the very most of them. Moore and Royston, for a kick off, are extremely impressive, by turns fiercely swinging, confidently loose



and genuinely stomping. Miles himself is an admirably eclectic player; he eschews some of the more outlandish approaches his contemporaries take (you won't find any use of even the subtlest FX here), but he brings an elegance and ease to all the lines he plays. And Frisell gives as good a performance here as he has done for a long time, turning in his trademark distortion-drenched searing solos and gorgeously hanging, pianistically-voiced chords, yet avoiding the more overtly idiomatic stylings of his own recent albums.

Overall, I'd say that what the album has is grace. Woman's Day is a work of confidence and maturity on one hand, and of wide-eyed pleasure on the other, but beyond this, it has an easy, accessible beauty that only makes me wish I'd picked it up sooner.

the tony williams lifetime

THE TONY WILLIAMS LIFETIME TURN IT OVER VERVE 539 118-2

Unquestionably one of the saddest things to happen in Jazz last year was the death of the great, great drummer Tony Williams, easily among the top five percussionists ever to have worked in the genre. It was a particularly sad death given that he'd just participated in one

of the finest outings of his recent career. For the dates which produced Arcana's Arc Of The Testimony revealed Williams still to be at his peak, somehow combining awesomely powerful Rock drive with his legendary polyrhythmicity. His death does seem to have provoked Verve, at long last, to reissue the first two albums he recorded with his pioneering Jazz group Lifetime, 1969's Emergency! and 1970's Turn It Over. (How these albums have remained unreissued in this country on CD beggars the imagination, but that's the music industry for you).

Emergency! had already proved controversial. At an obscenely early age, Williams had been one of the music's stars, but with Lifetime's debut he pretty much alienated the bulk of that audience, which still wasn't ready for this group's wholesale embracing of Rock, and not just Rock's form and instrumentation but its righteous anger and musical power too. What listeners he didn't lose with Emergency! he well and truly dispatched with its follow-up. The core of the group remained the same: Williams, the young English one-time R 'n' B and session guitarist John McLaughlin and the astonishing organist Larry Young. To the group Williams introduced Cream's former bassist Jack Bruce, perhaps the ultimate indicator of just what he wanted to achieve with this group.

If the results still sound astounding today, what must they have sounded like in 1970? The very notion of Jazz Rock now is so bound up with glossy, flashy, empty showmanship, but at this point the very idea of marrying Jazz and Rock seemed sacrilegious. Miles Davis is, of course, widely thought of as having kick-started the movement towards the introduction of electric instruments and Rock rhythms to Jazz. Yet his great breakthrough albums, Bitches Brew and In A Silent Way, for all their considerable beauty, don't come close to what Williams was doing with

Lifetime.

For one thing, Williams dumped Jazz's formal make-up more readily than Miles; None of Turn It Over's 10 songs run longer than five minutes, and most clock in around three. If these pieces provided the platform for longer, more open improvisations live, here they're absolute. What the group crammed into these short bursts was defining stuff, the solos (McLaughlin's all spider and Young's grunting, fiery, truculent, supremely confident) strung out across some of the most overwhelming rhythm section work in Pop music history. Williams on his own could generate enough electricity to power a small town, but Bruce's bass, if anything, gives it even more weight. Actually, there are serious comparisons to be drawn with Cream full stop. For if Cream gave birth to a monster in Pop music - the supergroup - at their best they remain one of Rock's most inspiring forces. Lifetime displayed that kind of freewheeling energy, a similar darkness of overall vision and then some.

A word of warning to the uninitiated: a good deal of this album features Williams' singing. At best, this is something of an acquired taste, at worst an irritation which could get in the way of the music. Williams had a nasal, whiney voice that often sang unspeakably sixth-form lyrics (and is only shown up on this CD release by Jack Bruce's own strong singing on the McLaughlin-composed out-take 'One Word') yet I feel that this was simply another attempt to be as distant from the mainstream Jazz audience as possible (and, frankly, I actually rather like his voice).

This line-up of the group would burn itself out shortly after the album, and its participants would go on to various careers and various degrees of fame. But Turn It Over, along with its predecessor, despite years of critical neglect, remains one of the music's truly great albums •

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This work was written soon after Shostakovich's first brush with the Soviet cultural commissars over his opera Lady Macbeth Of Mstensk, and his 'reply' to their criticism, the Fifth Symphony. By 1949, however, the date of the composition of his Fourth

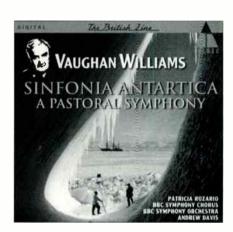
Quartet, he had learnt that it was preferable not to invite the displeasure of Stalin in the first place and, given the strong anti-Semitic feeling then prevalent in the former Soviet Union, a work whose lengthy finale incorporated elements from Sephardic Jewish Folk music was unlikely to find favour. The Fourth Quartet, therefore, like the Fourth Symphony, was put to one side until after Stalin's death and had to wait until December 1953 for its first public performance.

There was no such problem with the Eighth Quartet, composed in Dresden during 1960 and given the impeccably politically correct subtitle of "In memory of the victims of fascism and war". This highly programmatic and pictorial work was destined to become the best-known of Shostakovich's quartets, even being transcribed as a chamber symphony for string orchestra. Yet, as in so much of Shostakovich's music, it is impossible not to feel that the superficial 'message' masks a deeply personal expression.

As with the Tenth Symphony, each movement uses a theme based on the notes D, E flat, C and B which, in the equivalent German notation of D, Es, C, H spells out the initials of Dmitri Shostakovich; and, given the incorporation of quotations from several earlier works, including Lady Macbeth, the conclusion that the composer was giving voice to his own oppression as well as that of the peoples of Europe is inescapable.

The Rubio Quartet, who incidentally take their name from their instrument

maker, the Cambridge-based David Rubio, give as compelling a reading of the Eighth Quartet as I have yet encountered, sensitively paced and shaped and, as in the other quartets, aided by a tonally warm, intimate and coherent sound.



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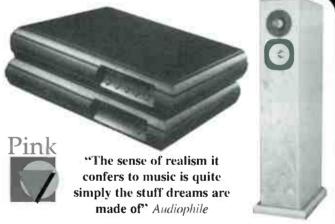
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the Vaughan Williams symphonies for Teldec.

Both symphonies were inspired by landscapes and by acts of vain heroism, which has led some to undervalue the purely musical qualities of both pieces. Not so Andrew Davis, for whom the symphonic argument is paramount. Not that he seeks to impose a structure; rather, his is an understanding of the character of the works which allows eloquent and unforced expression. I found these to be performances whose full impact and stature did not come across with the first hearing, but only with repeated listening. With each playing, the sense of involvement increased, and that in works which I believed long ago to have yielded all they had to say.

The Sinfonia Antartica, premiered by the Halle Orchestra under Sir John Barbirolli in January 1953, has its roots in the music Vaughan Williams composed some five years earlier for the film Scott of the Antarctic, which was based on the disastrous South Pole expedition of 1910-12. A similarly tragic landscape prompted the composition of the Pastoral Symphony: that of the fields of Flanders during the First World War, where Vaughan Williams served as an ambulance driver. But these images were just starting points, as the superscriptions placed at the head of each of the five movements of the Sinfonia Antartica are perhaps intended to emphasise: only the last refers to the subject of the film.

Davis captures the visionary mood of both works supremely well, generating an awesome power in the Sinfonia Antartica and making the Pastoral hauntingly elegiac. The balancing of soloist, chorus and orchestra in the former is first-rate, with the deep perspectives of St

Augustine's, Kilburn, used to excellent atmospheric effect. The playing of the BBC Symphony Orchestra, in this work especially, is outstanding, with thrilling brass and percussion. The recording of the Pastoral is marginally less successful: the chillingly evocative trumpet cadenza in the second movement is surely too distant and recessed, but the ethereal, wordless soprano of the finale is magically conveyed, with Patricia Rozario in radiant voice. However, while one might question the odd detail of interpretation or recording, the integrity and conviction of these performances is simply incontestable.



TOMAS LUIS DE VICTORIA

Sacred Choral Music Volume 1: Devotion To Our Lady The Sixteen; conductor, Harry Christophers

COLLINS CLASSICS 15012 (DDD/52.16)

The music of the 16th-century Spaniard Tomás Luis de Victoria has been frequently championed in these pages, most often in the ongoing Hyperion series with James O'Donnell directing the Choir of Westminster Cathedral, but also with important contributions from the likes of Magnificat on Linn and

the Tallis Scholars on the Gimell label. However, to judge from this new Collins Classics issue, the pre-eminent Westminster discography is about to face formidable competition.

It comes in the shape of Harry Christophers and his marvellous team of voices, The Sixteen. The first volume of their survey is devoted to music written in honour of the Virgin and contains some of Victoria's most sensuously beautiful choral writing, including settings of five Marian motets, the Salve Regina à 8, the Ave Maris Stella à 4, the Alma Redemptoris Mater à 8, the Regina Caeli Laetare à 8 and the Ave Maria à 8, and concludes with the radiant Magnificat à 8. The main work though is a substantial Mass setting, the Missa Salve à 8, published in 1592 and - in the tradition of the time based on an existing work, in this case the 8-voice double-choir antiphon Salve Regina with which The Sixteen usefully precede their rendering of the Mass.

To lovers of Renaissance polyphony, and all who respond to the human voice at its most resplendent, this issue is self-recommending. The Sixteen is in as fine form as I have ever heard this highly consistent outfit, displaying an innate feel for the distinctive character of Victoria's music, with its intense mixture of the luminously serene and the fervently ecstatic. Who could fail to be moved by, say, the Gloria of the Missa Salve or the pure, soaring lines of the four-part hymn Ave Maris Stella (Hail, star of the sea)?

The recording, engineered and produced by Mike Hatch and Mark Brown of Floating Earth in the ideal acoustic of St Jude's-on-the-Hill in London's Hampstead, is an object lesson in how to convey these glorious sounds.

HI-FI WORLD World Radio History MARCH 1998

Record of the month

BENJAMIN BRITTEN

Spring Symphony, Op44/Hymn To St Cecilia, Op27/Five Flower Songs, **Op47**

Alison Hagley, soprano; Catherine Robbin, contralto; John Mark Ainsley, tenor; The **Boy and Girl Choristers of** Salisbury Cathedral; The **Monteverdi Choir**; **Philharmonia** Orchestra; conductor,

DEUTSCHE GRAMMOPHON 453 433-2 (DDD/62.04)

John Eliot Gardiner

Britten's jubilant and joyful Spring Symphony was the outcome of a commission from the conductor of America's Boston Symphony Orchestra, Serge Koussevitsky, but its premiere - with Koussevitsky's approval - was an all-European affair, Eduard van Beinum conducting the Amsterdam Concertgebouw Orchestra at the 1949 Holland Festival. The work represented something of an about-turn for Britten who, in his early career, had

rebelled against the Folk/Pastoral mood prevalent in so much British music. This potent and evocative mix of voices and orchestra, however, wears its muddy wellies with pride!

For his texts, Britten drew upon six centuries of English poetry, from Spenser and Herrick to his friend and mentor, W.H. Auden, as well as Milton, Blake and John Clare. It is all carefully arranged to mirror the 'progress' of a conventional four-movement symphony, from the melting of the winter ice and

the first stirrings of nature to the exultant finale which combines Beaumont and Fletcher's London, to Thee I Do Present with the anonymous 13th century Sumer Is Icumen In. The emotional heart of the work, though its 'classical' slow movement - is undoubtedly the Auden setting, his moving, almost mystical Out On The Lawn I Lie In Bed. Britten was fully

forged his reputation, and the vitality and exuberance of this interpretation place it on a par, and in some respects ahead of, the composer's own recording, recently reissued on Decca. This new recording, made in

Walthamstow Town Hall, is notable for the way it clarifies Britten's complex vocal and instrumental textures while still maintaining lively tempos. The

> singing of the Monteverdi Choir is remarkable even by its standards, with breathtaking precision and judgement of dynamics. The focus is sharp and the attack clean. You might argue that it is a touch too refined in the more earthy numbers such as the rumbustious final chorus, but that would be nit-picking.

> The soloists, too, deserve plaudits: the beautifully-shaped and expressive singing of Alison Hagley is a delight, as is that of John Mark Ainsley, although the recording places him too far back in the sound picture. Catherine Robbin is fresh-toned but

in the key Auden setting suffers a little in comparison with Janet Baker in Previn's EMI version. But these are minor caveats in what is a richly enjoyable musical experience, one enhanced not only by DG's clear, vivid sound but by the well-chosen 'fillers', both a cappella works for chorus: the lovely Hymn To St Cecilia (another Auden setting) and the rarely-heard Five Flower Songs. Altogether a recording worthy of ushering-in the eagerlyawaited spring



aware of the significance of these words to Auden, the product of a spiritual experience which prefigured the poet's conversion to Christianity.

Gardiner's performance of the Spring Symphony is outstandingly successful, which initially at least may seem surprising for a conductor not normally associated with 20th-century English repertoire. Yet its cantata-like structure and masterly choral writing share many similarities with the Baroque music in which Gardiner

MARCH 1998



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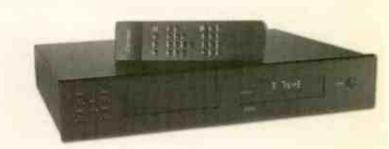
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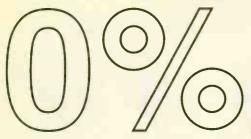
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ASM100 ACTIVE SUBWOOFER MODULE



This attractive module consists of a low pass filter and power amplifier ready for you to mount in a suitable sub-woofer cabinet. The combined unit can then be combined with any new or existing hi fi or home cinema speaker system to add in the real bass punch missing from most setups.

from most setups.

The ASM 100 module comes as a ready-to-mount unit on a solid diecast aluminium frame/heatsink. Input signal can be at line or speaker level for easy system integration. There are three separate stereo inputs at line level and the unit will use any signal presented or mix all inputs to add bass to any signal. The speaker level inputs are used by simply wiring the unit in parallel with the existing speakers to provide them with strong bass support. Crossover frequency can be selected to 50, 100 or 200Hz and the bass level can be adjusted by a front panel control. The 'Green' power supply switches the unit to standby if no signal is present. Drawings are included free for the compact 418 x 380 x 303mm cabinet.

With its powerful 125 wat output and versatile filtering the ASM 100 is the ideal universal active driver module for all subwoofer

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requirements.

ASM 100 Module, complete with IEC mains lead, instructions and ASM - W20 cabinet drawings. Pt. No. V7000 £185.29

W 200 S 20cm Long Throw Drive unit for use in ASM - W20 cabinet £36.68

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A speaker kit from the VISATON range that really fits the modern idiom, giving a full uncoloured, and highly defined, sound stage combined with unobtrusive elegance that does not look out of place, even in a smaller room. A frequency response from 38-20,000Hz and a power rating of 100W make it easy to drive. The novel arrangement of five high/mid tweeters, angled at 45 decrees. novel arrangement of rive high/mid tweeters, angled at 45 degrees, creates a really dynamic sound stage with sharply defined sound staging. With its compact 200mm square section it can also be used as ultra high quality main speakers



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Crossover Frequency	450Hz, 3KHz
Mean Sound Pressure	88dB
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Width	300mm
Depth	3 60mm
1 MEDGE Des Dois	PE20 70

ASM - T20 SUBWOOFER

ASM - T20 SUBWOOFER
An easy to build, but very effective, bass reflex cabinet design using the ASM 100 Active Sub-woofer Module and the W200S, high compliance, 8" driver, with its 20mm maximum cone displacement. Easy to incorporate into a modern living environment the size of the cabinet has been kept as small as possible at 418 mm high, 303 mm wide, and 380 mm long. To aid it is ease of positioning in the room both the drive unit and the vent are situated on the front of the cabinet. Despite these compact dimensions, and with a volume of only 31Ltrs, the ASM T20 gives up to 106dB with an acoustical cut-off frequency of 25 Hz.I. The cabinet is made from 19mm MDF, and needs about 8 so.ft. needs about 8 sq.ft.

W200S 20cm, Long Throw Drive unit, Part No. 9030



COUPLED CAVITY SUBWOOFER. COUPLED CANTY SUBWOOFER.
An alternative design by David Purton, from his little "Coupled Cavity Handbook", using the same drive unit but requiring a bit more woodworking skill as the speaker is set on a baffle in the middle of the box. The total box size is even smaller than the ASM T20

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BASS HORN DESIGN. A.L. Senson.

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RORSAN RERRES, WALNUT with xpx2 power supply and modified RB300 arm and ORTOFON MC10 super moving	
modelind 48300 sem and ORTHSON MC10 cuper manin	lion .
cartridge	550
OBICION CREMEIGID ROCK THRUTERIS	230
ORIGINAL CRANFIELD ROCK TURNTABLE with open style	200
Excalibur arm	700
FONS SQ30 with SME 3009 II, 33, 45 & 78 rpm	150
STD turntable	100
SYSTEMDECK I biscuit tin with lid and grace arm	200
HEYBROOK TT2 come on someone its a Bargain	150
THORENS TO 150 £20, TO 160 £40, ADC accutrac autom	afte
turntable with remite	50
PINK TRIANGLE original Model in black	200
CME 304 ML3 CONTROL HOUSE IN WILCO	500
SME 20A Mk2 as new condition with SME Y	
	300
	1100
REVOX B795	200
ORACLE DELFI MARK I	500
	400
IBE STAD S HEATY WEIGH TURNTABLE	500
	250
ONTE PSU FOR GRACLE	150
	300
SLATE AUDIO PLINTH FOR 301 BOXED	300
CASSETTE DECKS & TUNERS	

MAKIMICHI 600 EXCELLENT	
AIWA 4900 OLD BUT MICE 3 HEAD, DUAL CAPSTAN	
TANDBERG 30 I TUNER, A CLASSIC	
LEAR TROUGHLINE 2 WITH STUDIE 12 DECODER	
OUAD FM2 VALVE BUT MATCHES 33 PRE	
QUAD FM4 TUNER	
MAIT BAT OI WITH MAPET OID STYLE	41

MAIL MAI DI, HIIN MAI SI, DED SILEE	1030
SOLID STATE AMPS	
MERIDIAN 201 REMOTE CONTROL PRE AMP MERIDIAN SSS STERED POWER AMB	350 400
OF CROSS BETWEEN MAIN & DNM MAIN 42/140 pld style	450 550
REGUING \$350 STREET FOWER AND METALLED SOUND OF THE STREET SOUND O	850 150
NAIN NAC 12 Å HOMEREW PSII PS. AUDIO PASSIVE/MODEL TWO PRE/POWER	300
PS. AUDIO S.S. PRE AND PSU, FULLY ADJUSTABLE P INPUTS, NICE PREAMP PS. AUDIO MODEL TWO C PLUS STEREOPOWER AMP	450
QUAD 34/405, DIN PLUGS QUAD 34/606, GOLD PLATED PHONOS, BOXED	300
QUAD 33/303 LUXMAN C12/B12 PRE/POWER ARCAM DELTA 110/128 PRE/POWER 100 WATTS120	350
MICHEL ALECTO MONO BLOCKS ROTHWELL DELUXE PASSIVE PRE.	1350
STEPPED ATTENUATOR	200 400
MUSICAL FIDELITY P270 YAMAHA C2/07 MANOWH PRE POWER COMBO JUST AT IT MAXES FOU SWEAT	LOOKING
	800

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the above spk.

interconnect.approx

by wire set (10m)

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GEMINI line integrated S. Ended

RHYTHM LINE Ex review/as new

BARGAIN!! Stunning sound/looks

Epoch loudspeakers Ex-demo

Soundlab Dynastat loudspeakers - mint Muse Serris II one seven fives mono power Balance amplifers mint go well with

Transparent Audio Musicwave plus cable 8ft speaker pair | x | 15ft interconnect | x 5ft

Audionote SPX reference speaker cable 2.5m

RHYTHM 211/VT4C phono Ex-Demo Marked

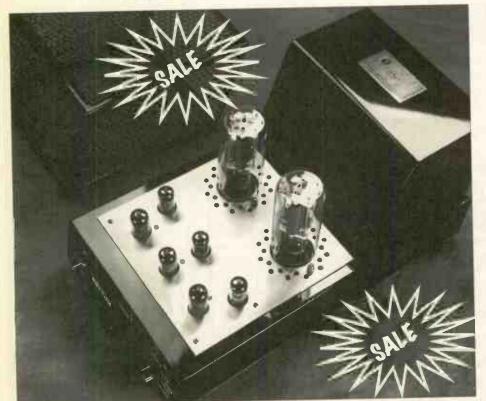
AEON MKI MONOBLOCKS 20Watt S.E. Si

construction Ex-review new marked - to clear

SPACE REFERENCE MKII ex hi-fi show display as new

Era Std. phono mm preamp New marked

Voyd bi s.p.u. £1870 SME4 Siltech wired £1000 Audionote I.O cartridge £1495 Audioinnovations £1000 M.C.T £349 BARGAIN! All above mint as new £2400



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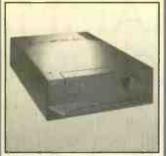
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€5499

£799









EAM SYSTEMS: WE M

CYRUS GETS SERIOUS WITH MICRO SYSTEMS

> FROM AS LITTLE AS £**72.**90 PER MONTH

While some customers can be attracted to the appearance of many mainstream mini and micro systems, they are quickly won over by a demonstration of the sheer musical superiority of these diminutive Cyrus components.

As beautifully constructed as anything on the market, this superb Cyrus and Mission line-up provides an exquisite system for anyone looking for legitimate hi-fi performance but with the minimum import on their domestic decor.

The system offers a stylish and genuinely sophisticated quality of reproduction with all types of music that is likely to satisfy its owners for many years to come.

Call in for a demonstration and find out about our unbeatable trade-up offers.

CYRUS 111i Amplifier CYRUS PSX-R Power Supply £328 CYRUS daD3Q CD Player 8982 Mission 752F £578 TOTAL £2402

PART-EXCHANGE (example) £602 or Denosit

BALANCE *00812 INTEREST FREE PAYMENTS 12 X £150

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No hi-fi manufacturer can claim to have a more significant history of innovation than Quad, and this latest system continues that tradition, offering both exceptional sound quality outstanding value.

Judging by demand for older Quad equipment through our own 'second user' store, we would guess that Quad offers the best "investment' potential amongst hi-fi products, and owners of older Quad equipment will be pleased to know that because of the demand through our 'Trading Station' we always offer exceptionally generous part-exchange allowances against Quad hi-fi of any vintoge when you up-grade to the wonderful Quad 77 system.

QUAD 77 Control Amplifier £849 QUAD 77 (D Player €699 QUAD 77 Tuner €699 Quad 101 Speakers £599 TOTAL £2846

PART-EXCHANGE (example) £846 or Deposit BALANCE £2000* INTEREST FREE PAYMENTS 12 X £167

*OR DEFER PAYMENT

90 DAYS THEN 3YEARS AT JUST £18.69 PER WEEK

TRADE-IN YOUR HI-FI

Generous allowances for your carefully used hi-fi equipment plus a 'CASH-IN-HAND' facility.

FOR MANY OF US VINYL STILL RULES!

FROM AS LITTLE AS £89.91 PER MONTH

There is still something so beguiling about the quality of vinyl that even now, some fifteen years after the introduction of digital sound, many of us treasure our LPs more than ever. You know that old saying " you don't know what you've got until you lose it!"

If you're no longer playing your old albums, or if you've replaced your collection with CDs, it's worth knowing that we have a high demand for quality used turntables - so whatever you do, talk to us - please don't throw it awoy! But, if you're a 'vinyl junkie' you'll want to speak with kindred spirits.

So this is our recommended 'Re-start System' for anyone with a dominant collection of the beautiful block stuff!

PINK TRIANGLE TARANTELLA With Rega RB300 & Grado £795 **COPLAND CSA 14** Amplifier SONUS FABER Concertino Spkrs £599 SONUS FABER Speaker Stands £290 TOTAL £2883

PART-EX (Example) or Deposit £663 £2220* INTEREST FREE PAYMENTS 12 X £185

OR DEFER PAYMENT 90 DAYS THEN 3YEARS AT JUST £20.75 PER WEEK

WE'LL BUY YOUR HI-FI

Instant Cash offered for Used and Vintage hi-fi equipment. Complete systems always wanted.

WHEN IT'S RIGHT YOU KNOW IT'S RIGHT!

> FROM AS LITTLE AS £91.53 PER MONTH

There's little we can say about Audiolab and Monitor Audio that isn't already well known. Other than that they are near neighbours of ours in a concentration of top-name manufacturers in the hi-fi hotbed that is Cambridgeshire.

The two companies come even closer in this system, demonstrate how bi-amping a superb two-way speaker with Audiolab's latest 'minimal' integrated and additional power amp creates a soundstage of amazing scale and precision.

We commend Audiolab and Monitor Audio, not only for such obvious sonic qualities but also for their outstanding engineering as well as a cosmetic finish which enhances the sheer desirability of all their award winning components.

AUDIOLAB 8000CD (D Player \$999 AUDIOLAB 8000LX Integrated £469 AUDIOLAB 8000SX Pwr Amp £549 **MONITOR AUDIO Studio 12**

Floorstanding Speakers 2999 TOTAL £3016

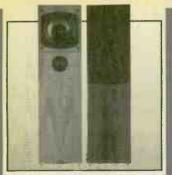
PART-EX (Example) or Deposit £756 BALANCE £2260* INTEREST FREE PAYMENTS 12 X £188

OR DEFER PAYMENT 90 DAYS THEN 3YEARS AT JUST £21.12 PER WEEK

WE'LL SELL YOUR HI-FI

Let us help you get THE BEST PRICE for your old hi-fi by selling it for you on a commission basis.

ARCAM ♦ ARION ♦ AUDIOLAR ♦ AUDIO RESEARCH ♦ AVI ♦ BOWLES & WILKIN ♦ CASTLE ♦ CERWIN VEGA ♦ COPLAND ♦ CYRUS MICHELL ♦ MISSION ♦ MISSION ♦ MUSICAL FIDELIT ♦ NAIM ♦ PINK TRIANGLE ♦ PIONEER ♦ PRO-AC ♦ QUAD ♦









HEM A FINANCIAL REALITY

NAIM THAT TUNE IN ONE!

FROM AS LITTLE AS £ **1 28**.79 PER MONTH

If you're after that 'toe-tappin', 'finger poppin', 'hand clappin', 'thigh slappin', sound experience - simply call in and listen! We'll demonstrate Naim, a company that places a convincing emphasis on the value of true system synergy. For a growing number of our customers, Naim reproduces music the way they like it, and we'll place a bet that when you listen, you'll probably discover that you do too! A complete Naim system starts from around £2,300 which you can build incrementally to a staggering £30,000! What's more, if you'd like a personal endorsement, we can tell you that some of our people have chosen to spend their own 'hard-earned' on complete Naim systems. We can't say fairer than that!

 NAIM CD2 CD Player
 £2000

 NAIM 102 Pre-amp
 £1050

 NAIM 180 Power amp
 £1060

 NAIM Credo Speakers
 £1060

 TOTAL £5170

 PART-EXCHANGE (example)

 or Deposit
 £1990

INTEREST FREE PAYMENTS 12 X £265

BALANCE

£3180*

*OR DEFER PAYMENT 90
DAYS THEN THREE YEARS AT
JUST £29.72 PER WEEK

VALVE & SOLID STATE - BEST OF BOTH WORLDS?

FROM AS LITTLE AS £324.00 PER MONTH

No dogma here! While different technologies provide different solutions to achieving state-of-the-art sound reproduction, The Hi-Fi Company will always provide an appropriately wide choice of top quality equipment for your personal assessment.

Audio Research have earned a global reputation with their highly sophisticated vacuum-tube amplifiers which, with the help of their new OD player in this system, produce an utterly convincing partrayal of all types of music.

Add the ProAc Response 2.5 loudspeakers and, in our view, these rare devices help this system create the transparent sound of electrostatics with the sheer power that only superior cabinet speakers can achieve.

AUDIO RESEARCH CD2

CD player £3399
AUDIO RESEARCH LS9 Pre £1949
AUDIO RESEARCH VT50 Pwr £2895
PRO-AC RESPONSE 2.5 £2700
TOTAL £10,943

PART-EX (Example) or Deposit £2943 BALANCE £8000*

INTEREST FREE PAYMENTS 12 X £667

*OR DEFER PAYMENT 90 DAYS THEN 3 YEARS AT JUST £74.77 PER WEEK KRELL CLASS A POWER DRIVES MARTIN LOGAN

FROM AS LITTLE AS £364.50 PER MONTH

For many years we have delighted in the transparency of electrostatic speakers, but never more than when driven by hugely powerful Class A amps.

Electrostatics really open up to Krell amplifiers, enhancing their clarity with a three dimensionality which can be eerily real in some instances. With well recorded discs one can feel as if it's possible to walk right through a literally transparent soundstage to mingle with the musicians in your own living room!

Any system affering this level of performance usually deserves a home demonstration and if that is something you would like to experience for yourself, please contact us and we will be delighted to make the arrangements for you.

The system is of course on dem in store.

KRELL KAV300CD CD player \$3549 KRELL KAV250P Pre amp \$1999 KRELL KAV250A Pwr amp \$3195 MARTIN LOGAN CLS11 \$4555 TOTAL £13,298

PART-EX (Example) or Deposit £4298 BALANCE £9000*

INTEREST FREE PAYMENTS 12 X £750

*OR DEFER PAYMENT 90 DAYS THEN 3 YEARS AT JUST £84.12 PER WEEK MULTI-CHANNEL EXPERTISE IS HARD TO FIND

FROM AS LITTLE AS £405.00 PER MONTH

Digital technology leads the way in audio-visual systems and there's no doubt that Meridian of Cambridgeshire are world leaders in the design of state-of-the-art multi-channel sound equipment. With our own extensive expertise in home-cinema installations at all budget levels we have to place this system as

levels, we have to place this system as perhaps offering the perfect combination of hi-fi pedigree and sonic performance with genuine up-to-the-minute audiovisual compatibilty.

If you are serious about creating a multichannel 'home cinema' and hi-fi system, this is the ultimate installation.

 MERIDIAN 500 CD Transport
 £1245

 MERIDIAN 518 Processor
 £925

 MERIDIAN 519 RF Demod
 £450

 MERIDIAN 562V Dig Control
 £995

 MERIDIAN 565-7.1
 £2850

 S/S Decoder with AC3/DTS
 £2850

MERIDIAN DSP 5000

Digital spkrs Rosewood (2 pairs) £6920 TOTAL £13,385

PART-EX (Example) or Deposit £3385
BALANCE £10,000*
INTEREST FREE PAYMENTS 12 X £833

*OR DEFER PAYMENT 90 DAYS THEN 3YEARS AT JUST £93.46 PER WEEK

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TURNTABLES	/ ARMS	
Dual CS505 Grado tonearm		280
Grado tonearm Linn LP12 (Afr) Zeta Linn LP12 Ekos/ Troika Linn LP12 Basik/LVX// Linn LP12 Basik/LVX// Linn LP12 Basik/LVX// Manticore Mantra / Ma + MBP6 pwr sup / Ort M Michelf Gyro Power PS Rega Planet / Acos Lus Revolver / Helius Sup		£498 £795
Linn LP12 Ekos/ Troika	£3000	£1298
Linn LP12 Basik/LVX/A	\$48E1400	£595 £595
Manticore Mantra / Ma	gician	2393
+ MBP6 pwr sup / Ort Michell Gyro Power Po	MC3000	£998
Rega Planet / Acos Lus	stre	£195 £120 £249
Revolver / Helius Scon	pion / P77	£249
Revolver / Helius Scon The Voyd Turntable (i external power supply Voyd 0.5 c/w SMFV	nci Hetere	£1298
Voyd 0.5 c/w SMEV (Silver wired)		
AMPLIFIERS - SO	£5300	£2998
Alchemist Kraken Pro	£395	£288
Arcam Delta 90 (Int)	£500	£268
Audiolab PPA	£1100	6700
(Phono stage) Audiolab 8000A&P (Ole	d Style)	£798
PCW 200 (0	£1200	€648
BGW 202 (Control/Pre) Burmester 838 Head a	mn/Chrom	£275
Classe Audio Thirty Pre C J Sonographe FET (P Counterpoint Solid 1 P DPA 2008 Pro/Pount	£1500	£695
C. J. Sonographe FET (D	£1320	£695
Counterpoint Solid 1 P	NT £1495	£495 £795 £745
DPA 200S Pre/Power DPA 50S Power DPA Renaissance Int		£745
DPA Sus Power	£1500 £595	£695
Dynaco ST120 (Classic	circa '76)	£477 £328 £350
EAR 834P Head Amp	£500	£350
Exposure VII/VIII Pre/Pr	wr £700	£448
Dynaco ST120 (Classic EAR 834P Head Amp Exposure VII/VIII Pre/P- Finestra EC (Inc mains Heybrook C3+P3 Pre/P Jeff Rowland	wr£1425	£795 £795
Jeff Rowland	05500	
Krell KBL Line Stage	£5500 £4998 £4998 £	2798
Consumate Pre Krell KBL Line Stage Krell KSA150 Power	£4998	2998
Krell Ref KRSBP (6 component balanced Krell KPE Phono stage Lecson AC1/AP1 (Circa LFD LSB + PA2 (Pre/Pw LFD LS2/PA1 (Pre/Pwr) Meridian 551 Int Meridian 603 Pre/DAC Michell Argo/Hera (Pre/F	ore) .	3995
Krell KPE Phono stage	10)	A OGS
Lecson AC1/AP1 (Circa	1975)	£295 1798
LFD LS2/PA1 (Pre/Pwr)	£2600 £	11/98
Meridian 551 Int	£795	£568 £794
Meridian 551 Int Meridian 603 Pre/DAC Michell Argo/Hera (Pre/F	£1750	£794
	£1339	£898
Musical Fidelity A120 Musical Fidelity B140 B	£1339 £549	£295 £250
Musical Fidelity A120 Musical Fidelity P140 P NAD 3020e Intg Naim 92 Pre / Flat Cap / (6 months old & mint)	£130	£250 £80
Naim 92 Pre / Flat Cap /	30 Power	amo
Naim 42 Pre	£1252	£998 £195
Naim 72	£725	£528
Naim 180 Power	£1095	£698
Naim 250 (Old Style)	£1655	£495 £795 2245
Naim 135 Mono's (Late)	£3330 £	2245
NVA AP30 (Integrated)	£700	£495 £228
Nytech CP122 / CPA602	£700	£325
OCM 500 Power amp	£2750 £	1698
PS Audio TwoC power ar	nos X 2	£145 £595 £498
Quad 66 Pre-amp	1	£498
Quad 34 Pre-amp	£495 §	2265
Quad 405 Power-amp	£400	2220 2195
Rotel BR850 Power	9	2005
Sugden A48 (Circa 1976)	5	195 128 1795 295
Sumo Athena (Pre) & 9 (F	wr) \$	795
Threshold \$300 (pure)	£450 £	295
Tornado 1/ Hurricane 1	£5500 £1 £995 £	500
BA 2 (Pre)	£1700 £	798 878
Nalim 42 Pre Naim 72 Naim 180 Power Naim 180 (Old style) Naim 250 (Old Style) Naim 250 (Old Style) Naim 135 Mono's (Late) Naim 135 Mono's (Late) NVA AP30 (Integrated) NVA AP30 (Integrated) Nytech CP122 / CPA602 OCM 500 Power amp Onkyo A809 Integrated PS Audio TwoC power ar Quad 66 Pre-amp Quad 44 Pre-amp Quad 44 Pre-amp Quad 44 Pre-amp Quad 44 Pre-amp Sund 44 Pre-amp Rappaport Pre 2 (Pre) Rougher BRB50 Power Sugden A48 (Circa 1976) Sumo Athena (Pre) & 9 (Prechnics SU VX820 Threshold S300 (pwr) Fornado 1/ Hurricane 1 IBA 2 (Pre) VALVE AMPLIFI	ERS E	
Arion Electra Integrated Art Audio Quintet (Monos) Art Audio Conductor (Pre)	£1400 £	875
rt Audio Conductor (Pro)	£700 £1	198

Maridian 554 1-4	-	Maill CD1 £1999	£1298
Meridian 551 Int £795 £568		Parasound DAC-1000 £795	£528
Meridian 603 Pre/DAC £1750 £794		Pioneer PDS901 (Silver)	£250
Michell Argo/Hera (Pre/PSU)	-	Pioneer PD9700 £450	
£1339 £898		Pioneer PDM900 (Multi) £600	£298
Musical Fidelity A120 £549 £295		Proceed PDT1/ PDP1 £3490	
Musical Fidelity P140 Pwr £600 £250		PS Audio UltraLink 2 DAC£2200	21090
AD 3020e Intg £130 £80			
laim 92 Pre / Flat Cap / 90 Power amp		QED Digit Heference £450	£284
		Quad 67CD CD Player £900	€695
		Technics SL-PS 770A £250	£155
1-1 70	ш	Technics SL PG500A (Silver)	£150
1-i 400 D		Teac P700 Trans + Opt Remote	
laim 180 Power £1095 £698		£900	€645
laim 160 (Old style) £495		Trichord Pulsar 1 £1195	£847
laim 250 (Old Style) £1655 £795		Wadia 2000 (Trans/DAC) £12,000	€5998
laim 135 Mono's (Late) £3330 £2245		Yamaha CDX 530E £230	£125
laim Hi-Cap (Late) £700 £495		TAPE DECKS / TUNERS	LILU
IVA AP30 (Integrated) £350 £228		Audiolob 0000T	
ytech CP122 / CPA602 £700 £325		Audiolab 8000T £750	£538
CM 500 Power amp £2750 £1698	-	Avantic BM611 Valve Tuner	
nkyo A809 Integrated £145		Circa 1960 (no decoder)	£148
S Audio TwoC power amps X 2 £595	-	Cambridge T55 Tuner (Black)	£78
uad 66 Pre-amp £498		Creek T40 £199	£125
144 8		Cyrus Tuner £399	£268
1010		Marantz SD55 3 hd / 2 mtr £400	£195
1000	_	Nakamichi 680ZX £600	£398
		Pioneer CT70R 3 head (Silver)	£150
appaport Pre 2 (Pre) £295		Quad 66 Tuner	£438
otel RB850 Power £195		Revox B215 £1950	£658
ugden A48 (Circa 1976) £128	_	Yamaha KXW282 (Twin) £260	
umo Athena (Pre) & 9 (Pwr) £795	_		£168
echnics SU VX820 £450 £295			£138
hreshold S300 (pwr) £5500 £1500	-		£90
ornado 1/ Hurricane 1 £995 £798	-	LOUDSPEAKERS	
BA 2 (Pre) £1700 £878	_	Acoustat Model X (valve amps)	£1298
VALVE AMPLIFIERS		Acoustic Energy AE1 £799	£498
		Acoustic Energy AE1	00
rion Electra Integrated £1400 £875		(Rosewood) with stands £950	£648
Audio Quintet (Monos) £2000 £1198		Apogee Caliper Signature £4000	1500
t Audio Conductor (Pre) £700 £428		Audio Note AN J/D (Bik) £930	
	м	1000 (DIK) £930	£548

Audio Innovations 1st A	.ontinued)
(7 5watt heated triodes	
Audio Note M1 (Pre)	
Audio Note P3 (300B Po	£498
Audio Research SP11 M	wer) £1298
(Revalved & Serviced)	
Audio Possess Dates (5	£4995 £1698
Audio Research D130 (P	
Audio Research LS7 (Pre Avantic SPA II Vintage va Counterpoint SA20 Pwr	£1890 £1495
Augustia CDA III/	£1599 £1295
Avantic SPA II Vintage va	lves £188
Counterpoint SA20 Pwr	tyes £188 £3000 £1398
Golida SG-502	£950 £698
Gordon Welford (Pre)	
mand made/Hard Wired	£448
Croft Micro (Pre) Grant G100 MC / Pre / Pv	£144
Grant G100 MC / Pre / Pv	r £2200 £998
Sonic Frontiers	
SFM160 (Mono's)	£5495 £2498
(D PLAYERS / D	274
Arcam Alpha 1 Arcam Delta 170 /Black B Arcam Black Box 5 DAC Arcam Alpha 7 CD	£320 £195
Arcam Delta 170 /Black B	£320 £195
Arcam Black Boy 5 DAC	ex 3 £585
Arcam Aloha 7 CD	£295 £330 £235
Arcam Delta 7 CD Arcam Delta 70 CD Player	£600 £254
Acoustic Prec Eikos (New)	£1050 C1 440
Audio Alchemy Drive Suc	1100U 11448
Audio Alchemy Drive Sys 4 Box CD Player	£1950 £1098
	£1950 £1098
DPA Renaissance DAC Krell SBP64X DAC Krell MD164X DAC	£695 £498 £569 £395
Krell SRP64Y DAC	£9900 £4798
Krell MD10 (Transport) Marantz CD94 Marantz CD65II	
Maranta CD04	27990 £4398
Marantz CD6511	£799 £398 £250 £125
Meridian 602/606Trans/DAC	2230 2125
Meridian 200/263	
Micromega Duo (2 box)	1400 £694
Micromega Duo (2 box) Micromega 2.5 Trans	2299 £1198
Micromega 2.5 Irans	2500 £1495
Micromega DAC1 Mission PCMII	2299 £1198 2500 £1495 £500 £298 £250 £150
Mission do D 7000	£250 £150
Mission daD 7000 Musical Fidelity Digilog Musical Fidelity Tubalog	£195
Musical Fidelity Digliog	£195
Musical Fidelity E600	£500 £368
Naim CD3	£600 £428
(6 months old / mint) Naim CD1	£993 £798
Paragound DAC 4000	1999 £1298
Parasound DAC-1000	£795 £528 £250 £450 £254
Pioneer PDS901 (Silver) Pioneer PD9700	£250
Pioneer PDM000 (Mark)	£450 £254
Proceed PDT1/ PDP1	£600 £298
PS Audio Ultration o DAGO	3490 £1690
OED Digit Deferred	2200 11346
Quad 67CD CD Player	£450 £284 £900 £695
Technics SI DS 7704	£900 £695
Technics SL PGEODA (City	£250 £155
Teac P700 Trans (Ont Day	r) £150
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_	1900 1045
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AMPLIFIERS

CHORD CPA 1800 AND SPM

The Chord SPM 400 power amplifier produces a healthy 112watts into 80hms and no less than 182watts into 40hms, so there's plenty of power for all loudspeakers and rooms, even though the '400 is very compact.

Frequency response was wide, stretching from a low 4Hz right up to 70kHz. Chords normally display plenty of low-end grunt and this model is unlikely to differ.

Distortion was low right across the audio band, at all power outputs, from low

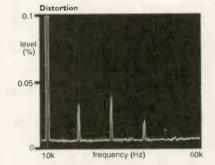
to high. Like most solid-state amplifiers though the distortion spectrum, seen in our analysis, has extended harmonics, especially at higher power levels. This may add a little hardness to the sound.

The Chords measured well, as they usually do. This is a well-engineered amplifier. **NK**

Power 112watts

CD/tuner/aux.

Frequency response 4Hz-70kHz Separation 68dB Noise -96dB Distortion 0.05% Sensitivity 450mV



UNISON RESEARCH SIMPLY

Rated at 24watts, the Unison 845 managed 18watts before running into soft clipping. It could deliver this power at 40Hz and 10kHz too however, so its power bandwidth was good. Both channels were the same.

Unison are hardly conservative in their rating methodology, especially because SEs get progressively non-linear as output increases. So at 12watts the Unison 845 was producing 0.6% distortion, primarily third harmonic in nature. This will have a slight brightening effect on the sound. However, there is unlikely to be any harshness, because SEs have no crossover distortion either.

Noise and hum were very low and input sensitivity high at 120mV input for full output. At low signal levels of a few watts - all that is needed if you use big, sensitive floor standers of 90dB SPL or more - the Unison 845 produces just 0.1% distortion right across the audio band, a good result. Our analysis shows second harmonic is dominant, with third present. As power goes up third harmonic distortion increases relative to second.

The Unison 845 measures well enough, but low power output means it must be used with sensitive loudspeakers. **NK**

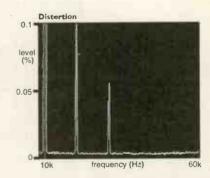
Power 18watts
CD/tuner/aux.
Frequency response 6Hz-32kHz

 Separation
 82dB

 Noise
 -99dB

 Distortion
 0.11%

 Sensitivity
 120mV



CARTRIDGE

WILSON BENESCH MATRIX MC

The Wilson Benesch Matrix has a high output of 1.3mV at 5cms/sec rms, so it will work well even with relatively hissy budget MC stages. However, this suggests a few more turns have been put onto the signal coils, raising effective tip mass. Therefore I wasn't surprised to find that the cartridge

had poor tracking in the midband (1kHz) as a result. I'd expect it to let go on high-level vocals. Tracking performance wasn't great at 300Hz either, suggesting low-ish compliance.

Vertical tracking angle was high at 26degrees, to give adequate disc surface clearance. This raised vertical modulation

distortion to a modest 3% - not bad. Lateral modulation distortion was low though, measuring 0.7%.

Channel separation was unbalanced, measuring 20dB in one direction and 30dB in the other, suggesting a misaligned generator assembly.

Frequency response displays smoothly

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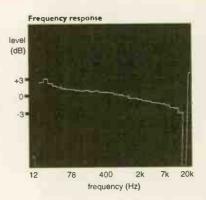
falling treble on outer grooves, as our analysis shows. Output was -3dB down at 20kHz relative to 1kHz, so the Matrix won't sound bright. Inner-groove tracing loss amounted to -3dB, which will make it sound warmer as it goes across the disc.

My main reservation about this cartridge is its poor tracking performance. Most alternatives are significantly better.

IN I	L/
1.4	\mathbf{r}

1417	
Tracking force	1.9gm:
Weight	6gms

Vertical tracking angle	26degrees
Frequency response	25Hz-10kHz
Channel separation	25dB
Tracking ability (300Hz)	
lateral	45µm
vertical	45 µm
lateral (IkHz)	14cms/sec.
Distortion (45µm)	
lateral	0.7%
vertical	3%
Output (5cms/sec rms)	1.3mV



CD PLAYERS

SONY CDP-X3000ES

Technically the Sony is a well-designed player with low distortion figures, excellent separation and fine dynamic range. But the real interest in this player comes from the choice of digital filters on offer to the user via a button on the

The standard filter gives a very flat frequency response with an abrupt cut-off at the top end which causes some ringing. Combined with the good distortion figures I would expect this to produce instruments such as cymbals and triangles with plenty of sparkle.

Filter position No I gives a significant roll off at high frequencies which should yield a smoother, fuller sound. Filter position No2 goes further in this direction by providing an even slower roll-off rate. Both these filters limit frequency response (-1 dB point) to around 17kHz.

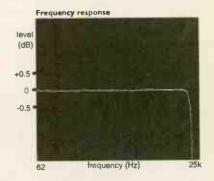
Filter position No3 is a compromise

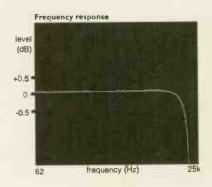
between the standard filter and filter No I, extending the frequency response to I 9kHz and eliminating any ringing. Ultimately the best filter subjectively will come down to programme material and personal preference. On a final note, the output level is rather high so take this into account when auditioning. KB

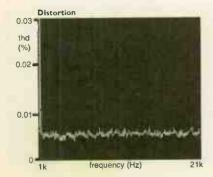
Frequency Respor	nse	4Hz-21kHz
Distortion (%)	left	right
-6dB	0.005	0.004
-30dB	0.007	0.006
-60dB	0.38	0.38
-90dB	29.2	29.4
-90dB dithered	14.6	14.9
Separation (dB)	left	right
IkHz	118	116
20kHz	100	104
Noise		-104dB
with emphasis		-104dB
Dynamic range		110dB

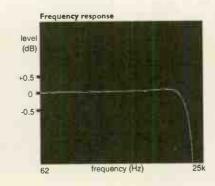
Output

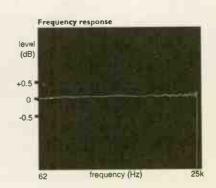
2.5V







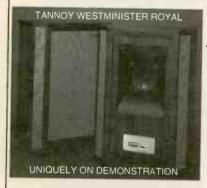




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Hi-Fi Choice July 1995

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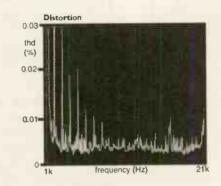
ANTHEM CDI

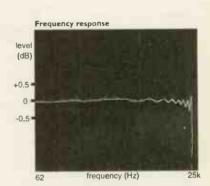
The Anthem CD1 has a fairly flat frequency response, though there is a noticeable amount of ringing at higher frequencies due to the high-frequency 'brick wall' filter used. Distortion figures are fair - they're worse than average at higher signal levels but improve as the level drops. Unusually the figures for separation are slightly better at 20kHz than at IkHz; you'd normally expect the reverse. Noise performance is acceptable but spurious outputs are very well suppressed, measuring -75dB or so. KB

Frequency Response		4Hz-21kHz
Distortion(%)	left	right

Distortion(%)	left	right
-6dB	0.013	0.012
-30dB	0.030	0.033

-60dB	0.41	0.40	20kHz	77	76
-90dB	24.5	24.5	Noise		-100dB
			with emphasis		-101dB
Separation (dB)	left	right	Dynamic range		108dB
IkHz	72	72	Output		1.97





LOUDSPEAKERS

MISSION 750 LE

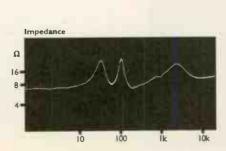
Under test one Mission 750 loudspeaker exhibited a slight whistle and a high peak in the response trace at 800Hz, caused by rear-panel reflection. On the other, the reflection was less noticeable but still there. This will result in coloration. Otherwise the 750 has raised bass and a small amount of treble lift to give it a lively, forward sound. The bass peak around 130Hz will give this 'speaker fast bass.

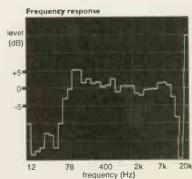
Sensitivity was low at 85.5dB, but miniatures are less sensitive than big 'speakers. The 750s will need a powerful amplifier to go loud, around 60W or so.

One reason for low sensitivity was a high overall impedance of 9.5ohms, meaning the 'speakers will draw little

current. They are, however, an easy load, possessing little reactance.

Technically this isn't Mission's best loudspeaker, but it will probably sound lively and entertaining. NK





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Hi-Fi Choice, June, 1997] Virtuoso Reference

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CASTLE KENDAL

The Kendal has over-damped bass and a slow bass roll off as a result. This is rather odd. The only way to balance out such a trend is to use both wall and floor to boost bass output. The Kendal is a floor stander of course, and it was measured off the floor to minimise the undulations in response a floor will introduce, for the purposes of visual clarity. It must be used close to a rear wall though.

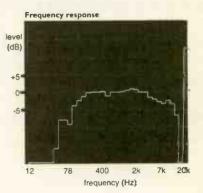
Castle integrate the two drivers well, as usual, so there's no crossover dip even when listening off axis. However, our response analysis shows the tweeter rolls

off slowly, a trend which will soften out treble, giving the 'speaker a warm sound.

The Kendal's impedance measured out at 10ohms overall and our analysis shows the curve stays high right across the audio band. This means the 'speaker will consume little power and it usually also means low sensitivity (according to efficiency). In this case the Kendal was reasonable in its sensitivity, delivering 86dB for one nominal watt of input (2.84V). It will need amplifiers of 40watts-80watts as a result for reasonable volumes.

The slight midband prominence of the

Kendal is likely to give it strong vocal projection, useful with near-wall positioning. **NK**



TUNER

DENON TU-SIO

The TU-S10's performance figures are about the best possible today, with a few exceptions. It has 'flat' frequency response, although close inspection shows small but significant treble lift - just enough to ensure a modicum of brightness that will also give some enhancement of detail.

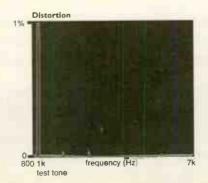
Noise was 4dB lower than usual, measuring -75dB. Since hiss is only audible during silences its absence isn't of great impact, but Radio 3 listeners might notice better clarity. Distortion was also very low, measuring much less than 0.1% on sum and difference signals. Stereo separation was around 10dB better than the best of the rest, measuring 52dB.

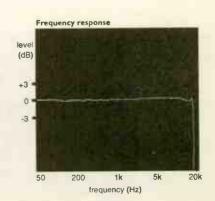
Amongst these excellent figures, RF sensitivity was peculiarly mediocre at 40µV, attributable I suspect to the presence of RDS and switchable aerial inputs. Similarly, the Denon needs no less than 2mV from an aerial for best results - a strong signal, so it is best used with a good aerial. I was baffled to find that this

tuner has no signal strength meter, a major omission in my view. Otherwise the TU-S10 delivers a very high standard of performance. **NK**

Frequency response	8Hz-16kHz
Stereo separation	52dB
Distortion (50% mod.)	0.06%

Hiss (CCIR)	-75dB
Signal for minimum hiss	2mV
Selectivity (at 0.4MHz)	66dB/80dB
Sensitivity	
mono	3µV
stereo	40µV
Signal strength meter:	none







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AUDIO NOTE

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