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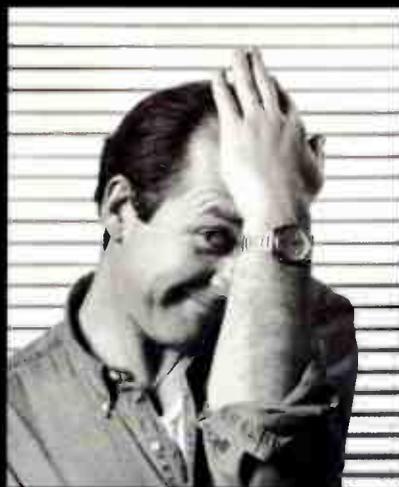
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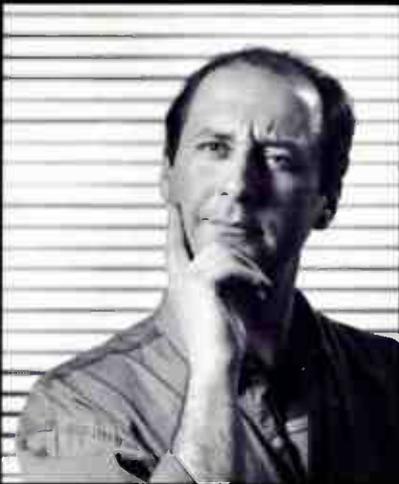




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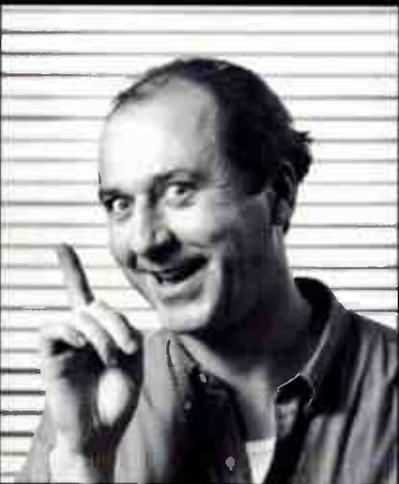
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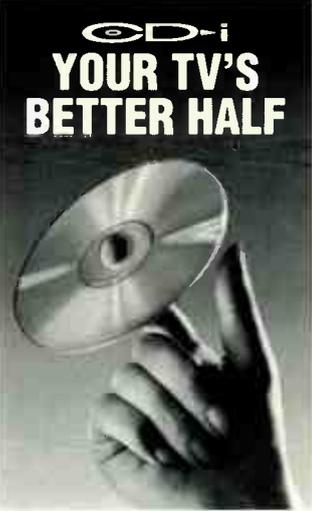
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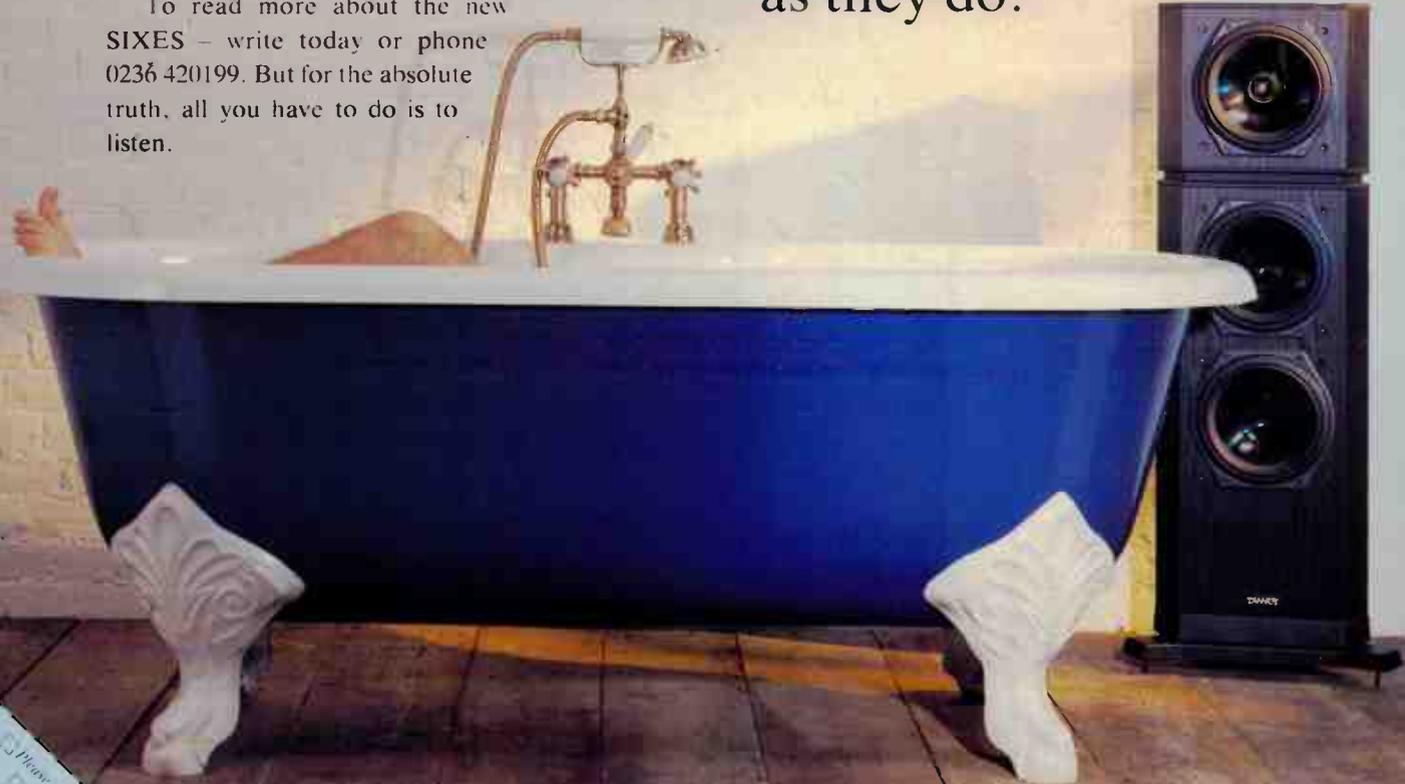
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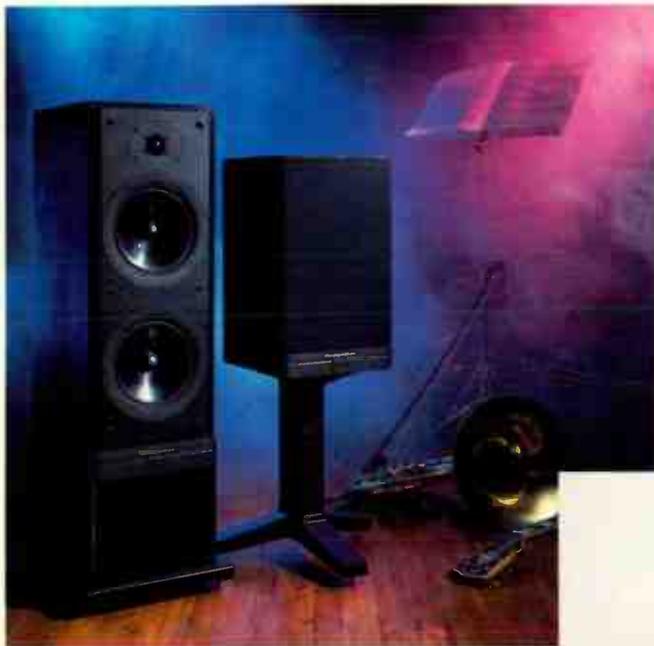
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MUSIC FROM MORDAUNT-SHORT

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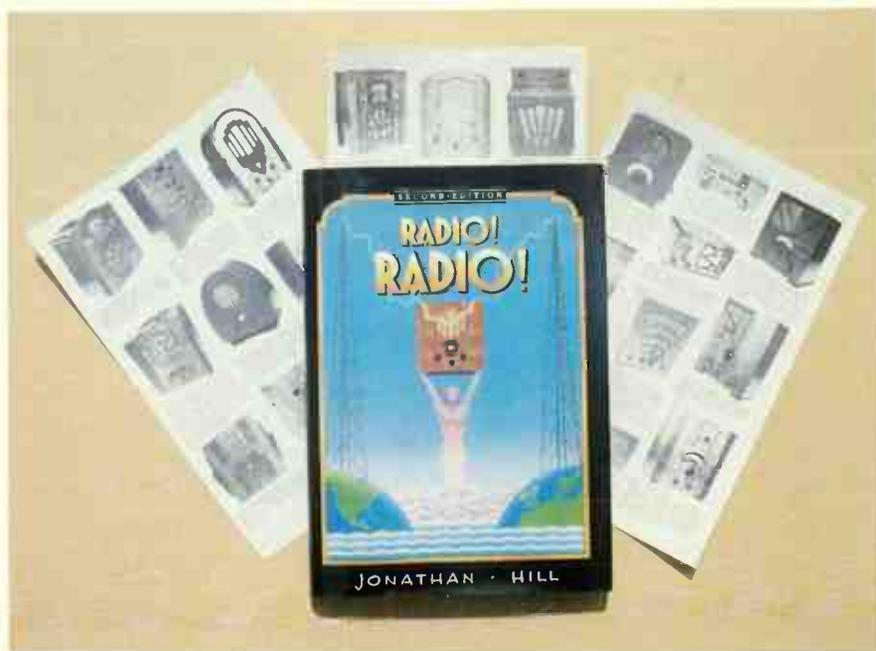
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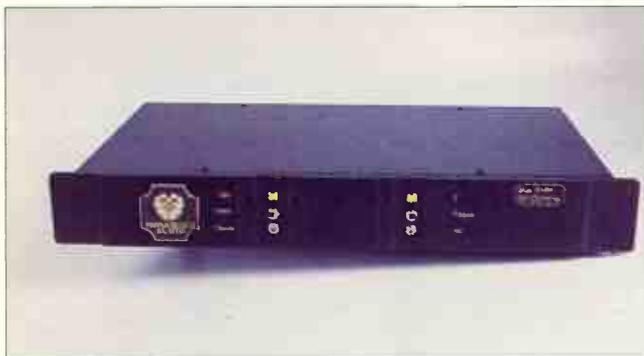
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Bel Canto Designs are appealing to your love of music with two new products. The Aida CD Converter sports three clock frequencies, 33kHz, 44.1kHz, and 48kHz, and retails for around US\$1,900, and the Orfeo is another 845 triode based, feedbackless monoblock to light your listening room (I'm sorry, I mean 'improve your system'), delivering a whole 30watts for just US\$8,600.

Bel Canto Design Ltd. PO Box 396, Excelsior, MN 55331, USA. Tel: (612) 474 3718



REMEMBER THE ALAMO!

That's the cry from the Moth Group, and 'The Alamo' is the name of their latest turntable, a belt-drive model with a medite platter, which costs £170 with tonearm.

Moth Group, 10 Dane Lane, Wilstead, Beds. MK45 3HT. Tel: 0234 741152

AUDION QUATTRO

Erik Andersson and David Chessel are launching a new single-ended amplifier using the 845 'bright emitter' triode valve, often mistaken for a lightbulb. The 'Quattro' consists of two boxes per channel, one containing the audio circuitry and the other the power supply. Developed from a 211 design, and delivering 28watts, the 'Quattro' costs £5000.

Alema UK Ltd. 25 Montefiore Road, Hove, East Sussex BN3 1RD. Tel: 0273 202637

CREEK'S CREEK

The Tannoy Group has agreed to sell the Creek brand name, subject to contract, to an American, Swiss, and German consortium of distributors and Mike Creek, who originally set up Creek. A new company, Creek Audio Ltd, has been formed and Mike will be the new Managing Director. The new address is given below.

Creek Audio Ltd. 2 Bellvue Road, Friern Barnet, London N11 3ES. Tel: 081 361 4133



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THE MIDAS

Eric Braithwaite takes

and finds out whether they

If you are TEAC, you invent a mechanism for your Compact Disc player that looks like a cross between a duck press and an old-fashioned mangle and call it a Vibration-Free Rigid Disc-Clamping System. Then, to make it a bit less of a mouthful, you lose two letters and simply call it a 'VRDS' player.

TEAC's contrivance has now appeared in the P700 transport. Externally, this oblong shoe-box shaped design looks little different from the company's previous stand-alone transports. Both the P700 transport and partnering D700 DAC, which together will set the buyer back about fifteen hundred notes, are finished in TEAC's traditional gold. Both are substantially built and well-finished, smooth and luxurious to the touch, from the soft firm clunk of the power switches on each, to the remarkably quiet and confidence-building slickness of the CD drawer. Apart from its output, of course, the TEAC transport is near-soundless, just a little discreet chirruping as it reads the disc's Table of Contents. A great change from the wash-day mangling noises some transports make, I must say, in this case thanks to the drawer moving on ball-bearings instead of a simple slide-bar.

As in earlier incarnations, the transport has a minimal amount of controls visible to the naked eye. Power on, Play, Pause, Drawer Open and Close - that's it. No, not quite it - discreetly tucked away under the loading drawer are two tiny gold collar-studs which control track skip forward and back. Everything else must be done from the cranny down the back of the settee - from the remote control, I mean. This allows a full range of tricks to be performed from the armchair: programming up to twenty tracks, search, repeat, switching the display between elapsed time, remaining time and total time left to play on the CD.

Should you wish for four seconds of peace between tracks, the 'Auto Space' button will insert it for you. If you need longer to recover from a track, you'll just have to use 'Pause' or 'Stop'. There's only one objection; as most Japanese manuals do, this one will insist on referring to programming 'Tunes'. If you want to load a few bars of a melody into the memory, you can't, unless they are indexed, and

that's rare these days. TEAC mean 'tracks', although it is possible to repeat an 'A-B' selection.

Now back to the mangle. A CD is a pretty thin piece of plastic and it's usually clamped to the spindle which turns it ten or more times faster than an LP with a fairly insubstantial piece of plastic. Inevitably it will wobble, bringing the error correction circuitry into play as the laser misses the odd pit or two. At least that's the reasoning behind Pioneer using a platter to support the disc and Micromega and Naim using a device not dissimilar to a turntable clamp.

TEAC's VRDS system is a combination. As the drawer carrying the CD slides in, the CD is pushed upwards and held against an eight-millimetre thick aluminium and brass plate which begins spinning courtesy of a hefty motor and spindle bearing. The manual warns against using

"For once, this track sounded as though the band knew what they were doing and performing it absolutely seamlessly."

proprietary stabilizers like the Sicomin dampers or suchlike. Always one to live dangerously, I tried a CD treated with a Harmonix stick-on tuning sheet; the P700 didn't grumble, though I had the distinct impression that the placing of members of the band altered, a flautist being nearer the centrally-positioned double-bass player's elbow than he should have been.

Elsewhere, the VRDS players have met with something of a mixed reaction. It's made a mark, alright, but whether it's a Black Spot or an X marking the hidden treasure seems to be as much in the ear of the beholder as anything else. People either love 'em or loathe 'em. The former seem to be in the majority, but it took me quite a while before I could make up my mind whether to join them, I didn't loathe this transport and DAC combination; but I didn't swoon either.

It's certainly different to the run-of-the-mill, and different to previous TEAC drives. The question is, whether 'different' in this case is a synonym for 'better' or 'worse'. It all depends, more than almost any other transport I've heard (he says, copping-out) on the listener's taste. Now it's not often that word crops up in

listening tests! Gone is the somewhat laid-back approach of earlier TEAC transports. This one is crisper, sharper, much less forgiving than the TEACs of old. It took time to isolate the reasons - but they are not all attributable to the transport's VRDS system, though this evidently plays its part; some come with the DAC.

This affair is also shoe-box shaped, but TEAC have joined the increasing numbers of designers who have begun to allow for more than one digital source. Depending on whether you can look a Toslink connector in its red winking eye, or consign them to the back of a drawer, there are four digital inputs to choose from. Concisely numbered 1-4 on the input selector switch on the fascia, two are optical, two co-axial. The orange display tells you the sampling frequency, and whether the input chosen is 'operating' or 'muting', a reassuring touch.

It will also bring up a legend which tells you whether de-emphasis is applied, though few users are likely to see it, since the CDs that require it are few and far between.

A recording of Villa Lobos pieces on Lontano opened up a splendid vista on music. The 'Sexteto Mistico' for an unusual combination of flute, oboe, guitar, saxophone, celeste and harp displayed all the unusual mixture of timbres, none overlaid by another, a tricky thing to achieve. There was a splendidly defined atmosphere, too. The TEAC combo is not quite as acute as Sugden's SD1/SDA1 transport and DAC at reproducing the merest breath of ambience, but it came close. Using an Arcam 170 transport through the D700, the sound was creamier and warmer, but with a noticeably coarser texture, more depth, but less sharp a focus on individual players.

Turning to a choral piece, the Arcam neatly - too neatly! - separated the sopranos from the contraltos and rendered them down into blocks. TEAC's transport spread them rather more credibly across the space between the speakers, more in the way they would be perceived in a concert hall. Again, vocal textures were warmer using the Arcam. Up in the ranges above middle C, both voices and instruments took on a very marginally hard, glazed quality via the P700/D700; not painful, but more like a fine ceramic glaze which let through an enormous amount of detail. I for one,



two metal boxes from TEAC,
spin his silver to gold.

TOUCH?

analogue replay

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digital replay

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however, do prefer a rounder. 'fruitier' tone - but, as I hinted before, that is a personal taste.

But it is in its overall perspective that the TEAC excels. If you want to pin down a guitarist's performance string by string or count the frets, then the TEAC is not quite as precise as others, but the whole is placed neatly within a wide, large picture-frame. If this implies a degree of clinical coolness, then so be it: the mid-range and bottom end are that bit lusher than the treble, which is thinner, without the same body to it. When a full band comes into play, deep percussion thunders away in the lower registers, horns and brass swell and swoop with gratifying intensity; if only, I sighed once or twice, the higher strings could sound a little less clinical in comparison.

Where I didn't open my mouth to sigh, but only gape in admiration, was listening to some well-produced rock. James might not be everyone's taste, but where some players split 'sound' into a thrasher's loosely-tied bundle of separate tape tracks, the TEAC made a superbly lively, cohesive whole out of it. For once, this track sounded as though the band knew what they were doing and were performing it absolutely seamlessly. On some players, the drum track will overlay

the voice track or apparently diminish in intensity as the guitar comes in, leaving an imitating impression that the band members were not really playing together in the same space. Not through the P700/D700, though. 'Intensity' is the word for what came out: driving and muscular music, pumping iron with a powerful bass and sure-footed rhythm. Instruments were not projected too forward, nor too artificially layered, yet every player stood, as it were, on his own two feet. This one will rock on with anything else out there.

On John Scofield's *What We Do* album, the TEAC came to grips with the CD instantly, with speedy and hefty drumming and a graunchy saxophone. 'Little Walk' seemed stronger, both in composition and texture, than I had thought, with the underlying structure clearly evident. It was as though the players had been honed to a precise edge. It was a remarkable contrast to using the Sugden transport and DAC, which for once made less overall impact, giving the recording perhaps too much of an air of a live stage performance instead of a considered recording session. Drawn into the one, you mentally applaud at the end of each piece. Listening to the TEAC, I found myself listening more concentratedly to sections and catching

myself saying "Weren't those few bars" (from the saxophonist or the drummer) "really damn good!"

That's the phrase to describe the transport. It really is "damn good". When it comes down to it, TEAC have managed to engineer one which is as authoritative as the very best and exudes quality. If I didn't swoon all over the carpet it's perhaps because the DAC half is somewhat leaner and less passionate by comparison. If you are looking for a hot-blooded, high-tempered converter, that's not what TEAC have produced. It's not lizard-blooded, either, but, considering the competition a very well-balanced performer. Whatever my reservations, they are relatively insignificant viewed against the total enjoyment factor - and that comes out as one of the highest about at the moment. A compromise or two, maybe, but, for a couple of quid under £1,500, well, it's damn good!

P700 Transport £895
 D700 DAC £600
 TEAC (UK) LTD,
 5 Marlin House,
 The Croxley Centre,
 Watford,
 Herts. WD1 8YA
 Tel. 0923 225235

MEASURED PERFORMANCE

TEAC's P700 transport and D700 DAC are distinctively styled in similar shoe-box fashion to their previous high-end CD equipment. The transport has gained TEAC's unique Vibration-free Rigid Disc-clamping System which clamps the upper surface of the spinning disc to an aluminium platter. The DAC uses four 20-bit converters, not Philips' bitstream DAC-7 which is favoured in their cheaper one box VDRS-10 player. Presumably two 20-bit DACs are used per channel in differential mode which lowers distortion. The D700 offers four digital inputs, two coaxial and two optical.

The D700s frequency response is very flat with no irregularities. There is a very slight lift at low frequencies that will give it a solid, but not overblown, bass performance. Treble rolls gently down above 20kHz, before falling sharply at 21.2kHz, which should give it a smooth, but precise, treble.

The distortion figures are a little odd. At high level, -6dB, distortion is as low as anyone has got with current DACs at 0.0045%, but at -30dB (a signal relating to normal music level) distortion rose to 0.043% on the left channel and 0.016% on the right. The better applications of DAC-7 are typically below 0.009% and the Pink Triangle Ordinal we measured at 0.006%, an extremely low value. Looking at the distortion plot taken at -30dB on the left channel the reason for this high value of distortion can be seen. There are very strong 2nd, 3rd, 4th and 6th harmonics

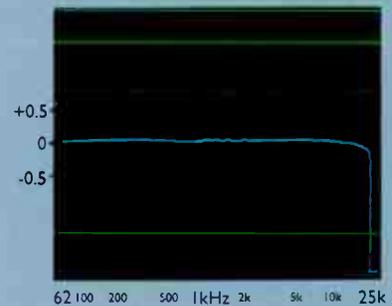
which will boost the overall distortion level. At signals below -30dB the TEAC once again became remarkably linear with only 3.29% with a -90dB dithered signal, nearly as low as is possible.

As would be expected from a 20-bit dual differential convertor dynamic range was good and noise very low. In fact, in all other areas the D700 measured competently showing the thought that has gone into this design.**DB**

TEST RESULTS

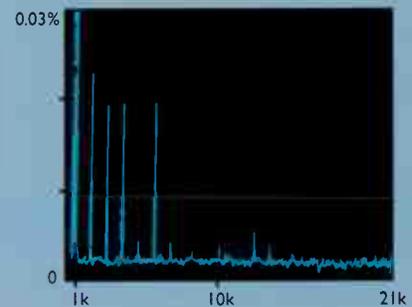
Frequency response	2Hz-21.2kHz	
Distortion %		
-6dB	0.0044	0.0045
-30dB	0.043	0.016
-60dB	0.36	0.36
-90	28.7	28.6
-90dB dithered	3.29	3.29
Separation	left	right
1kHz	108	114
20kHz	83	89
Noise	-109dB	
with emphasis	-112dB	
Dynamic range	111dB	
Output	2.05V	

Frequency Response



Flat frequency response

Distortion



Some distortion at 0.043%

THE PENTA HI-FI

A hasty history of the Heathrow happening handed

When I was at school we learned about cavemen and the way they led nomadic lives in summer, then spent the long nights of winter huddled in furs in front of that new-fangled fire stuff which cast long, leaping shadows across the walls of their caves as they gazed into it, listening enraptured to their bards spinning stories and songs passed orally from generation to generation.

Picture that scene, and you have a reasonable idea of what the hi-fi show is all about. The Mighty Hunter (almost all of the visitors to the show still seem to be male), at the end of his summer travels (two weeks in Skegness or, nowadays, Skymis) prepares himself for the long winter ahead with one last festival, gathering together with like-minded folk and listening to songs and stones.

Okay, so the technology's more advanced nowadays, the clothing is better, the bards cut their songs onto plastic discs rather than be there in person, but some of the stones you hear are just as tall as they always were.

It was the Epos display which made me think of cavemen, being decorated with black hangings and demonstrating ES14 'speakers' spotlit from below, which shed a primeval light on the faces of the audience, and sent weird shadows flying across the walls as listeners moved around.

JPW were reporting a high level of interest in the more expensive 'speakers' in their 'Ruby' range, especially the model 'B' which retails at around the £1000 mark. Cheaper speakers in the range, they said, were not generating so much interest, so they were concentrating on the top models, and pulling in quite a few people by demonstrating a punchy sounding system, albeit without a particularly wide dynamic range. Once in, visitors seemed intrigued by those bright red 'speaker cones, and with all that going for them, the salesmen didn't have very much work left to do.

In the Ortofon/Project/Albany room they were packing them in with quite a wide ranging display of products, including the impressive turntables from the Czech company Projekt.

In quite a civilized-looking room, Tannoy introduced me to ALF (Ambient Low Frequency, not Alien Life Form), their new sub-woofer, but were playing 'speakers' from their new 'Sixes' range which are now badged as mklls and feature a new tweeter.

Alchemist products, on the other hand, were continuing their 'heavy metal' approach to the visual side of hi-fi with their metre-long 500w MOSFET power amplifier

called Thor, which will retail for around £6000. They had a 250w version, called the Vidar, for £4000, and a 100w power amplifier called the Forseti at £900.

Anybody astounded by their wacky grey speakers will be disappointed to learn that they are a one-off design exercise by Alchemist's own designer, and will probably not be available in the foreseeable future.

The Welsh wizards of DPA Digital had a prototype of their new £6000 digital-to-analogue converter (DAC) on show, although you might have been forgiven for missing it, tucked away between two plants in the darkest corner of the room. It's a beautiful-looking piece of equipment with a gold-plated copper chassis, so why not make a show of it? The internals are reputed to be just as interesting as the



DPA Digital's new £6000 pdm ten twenty four CD Converter uses a discrete DAC.

casework, the converter chipset being DPA's own design, rather than an adaptation from another manufacturer's production chip. According to one of their representatives, the price tag made a few people wince, I can't think why.

One of the most prolific companies at the show was Pink Triangle, who launched several new products, including a groundbreaking 1-bit filter module, costing in the region of £300, to upgrade their Ordinal and Da Capo DACs. The filter uses Philips' new 1307 chip, launched just three months ago, and the Pink boys are the first to employ it. They were also demonstrating a small, floor-standing, loudspeaker at £850, a 300w monoblock power amplifier, the Pop at £2800 per pair, and a stereo 100w model, the Poppet at £1400.

Accessories company QED took a leaf out of our own book by demonstrating a new Twin-Positron Digit as part of their 'Reference' range of products. This one-box unit will cost £450, including all required cables. They were also displaying a new remote control preamp for £399, 60w monoblock power amps for £550 each, and a £1200 multi-room system controller package.

Plymouth-based Heybrook were making

much of their seaside connections with a display which intrigued many by looking so incongruously in a hotel setting. Their use of shells, pebbles, and varied pieces of netting around the room arrested the eye, and their full, rounded sound not only had people listening, but was a definite improvement on the rather unfocused sound which I recall from last year's Show. This is a company which obviously puts a lot of thought into the Show, and improves every year. Some of the other companies' display dressers might learn a lot from them. Heybrook were demonstrating their new Integral integrated amplifier, named by one of our readers in the June competition.

Magnepan were having fun promoting their new 'Sinus' pre and power amplifier combination from the Danish company S.L.T. One of their marketing chappies had obviously done his homework, and come up with a robust red wine from France with the same name. The Sinus will cost around £2500 for the monoblock and £700 for the pre-amp.

Another Scandinavian company, Gradient of Finland, were exhibiting 'a new approach to panel loudspeakers' in their 'Revolution' speaker, a panel loudspeaker suitable for positioning near a wall by virtue of a rotating bass unit, which enables rear radiation to be tailored to suit the listener's



They liked the wine so much - they named their amplifiers after it, or was it the other way around?

taste in bass. Unfortunately, I wasn't lucky enough to get to hear these speakers.

One of the products I did get to hear, however, was the new 'Equinox' two-way 'speaker' from Ruark. It looks, in the words of Alan O'Rourke, 'very Sonus Faber', and has an external crossover which sits on the back of the dedicated stand. The price tag on these, when they go into production, will be around £1700 for the pair including stands and, as much as you can judge any sound at the hi-fi show, these sounded remarkably clean and open, and just a little forward in the lower midrange.

SHOW 1993

to you by your hurried Hi-Fi World hacks.

Harbeth have been commissioned for another BBC monitor design, the LS5/12A, which they were 'demonstrating' in their room by tucking it away at the back, well out of light and out of mind. I know that monitor speakers are meant to disappear, but that's ridiculous! The LS5/12As will retail at around £1000 for the standard veneer finishes.

On the subject of disappearing speakers the Martin Logan electrostatics in the T&R room were so transparent you could see through them. There seemed to be less interest in these high-tech and 'strange' sorts of products than there has been in recent years. Two years ago, for instance, people were crammed like sardines into the Apogee loudspeaker room. This year Apogee were gone, like so many other companies. A pity, but maybe just

amplifiers.

In the Spitfire suite, Tube Technology had a prototype of their stereo 'Synergy' amplifier, and the response was said to be good despite the projected £4000 price tag. The bright-chrome Synergy looks suspiciously like a throwback to the 1930's 'Flash Gordon' view of the future, as though it had fallen through from some alternative dimension, it was this that drew people through the door, and the sweet, easy sound of Tube Technology's system seemed to be keeping them there.

Another company which relied on looks as much as sound was Union of Italy, demonstrating their range of valve amplifiers. The old cave-man instincts came

Response was quite astonishing - the room was well-nigh impassable for much of the time.

A room which seemed to rather put people off, although I liked it was Goldmund accessories. They had obviously decided to save time in despatch packaging by wrapping the entire room in brown paper. It was a great concept in my opinion, but possibly a little modern for such a 'retro' show as this year's turned out to be.

Downstairs on the ground floor, the range of products was almost as wide as on the floor above. Most of the exhibitors seemed to be doing good business all day, especially the accessories companies.

Moth were displaying their new £170 'Alamo' turntable, and reporting great interest in it, so don't give up hope, vinyl is not yet the sole preserve of the moneyed classes. They were also displaying their £249 active line input stage for the 30 series amplifiers, and their £199 headphone amplifier, along with their current range of products.

Just as a minor addendum to the retro theme, I did overhear talk of someone exhibiting 78rpm microgroove recordings, but this is probably apocryphal. Whatever next? Songs around the fire!

Micromega's concept was to display in The Pool Room which was rather poorly signposted, and I hope the gentlemen wandering around with the clues were not too disappointed when they found it. The Pool Room, of course, referred to the swimming pool, and I half expected Micromega to be exhibiting waterproof leathers or some such wondrous items, but they were displaying their £1199 T-drive CDMP based transport, with the matching £799 T-DAC, their established range of products and also Jeff Rowland Design Group products, whose products they are now distributing.

That's a very quick sketch of the show for those who didn't make it, and there seem to be a number of people who didn't. It looked as though attendance at the hi-fi show has fallen off somewhat, the corridors appearing less crowded this year, and although all of the sales reps I spoke to said that there was just as much interest as in previous years, one or two did express doubts. With the competition from 'Live 93', just one week later, and companies such as Quad, Denon and Yamaha eschewing the Heathrow show for Olympia, it left just the more hard-core audio producers holding the fort. Whether the big boys will change their mind and flock back next year, or whether they'll all be at Live '94 we have yet to see. @



Gradient's new dipole Revolution loudspeaker has a rotatable base to allow it to be properly tuned into a room.

attributable to the fact that 'Live 93' has taken on the mantle of being the show for new technologies, leaving the Heathrow show with the strictly enthusiast home-audio aficionados.

This limited showing of high-tech products paid dividends for the 'valves and vinyl' school. The Ramada hotel management must have saved a packet in heating costs as the likes of KAL, Nottingham Analogue, Union Tube Technology and, of course, our own World Audio Design boiled their filaments in order to attract attention. Attract it they did.

KAL were pulling people in with their £12500 211 integrated amplifier, as reviewed in our June edition, as well as a smaller 300B single ended amp.

Gamma were also exhibiting a 211 single ended amplifier that is expected to cost a reasonable £5000 but, unlike the KAL 211 they are monoblock power



The new BBC LS5/12A monitor is to be built by Harbeth Acoustics.

to the fore in here and as the audience craned forward to peer into the fiery light of the filaments I began to worry about being ambushed by a passing woolly mammoth, but it was just David Chester from Alamo squeezing through the cramped entrance.

Lastly but, though I say so myself, not least amongst the valve exhibitors, World Audio Design. We curiously had the airwriage on the publicity front of having published five supplements full of products, so quite a few visitors must have had a vague inkling of what we were about. Dominic and Noel, ably abetted by several helpers, demonstrated the three-way KLS1 'speaker', the two-way KLS2 High Definition 'speaker', the valve pre-amp, and the K3881 and 300B valve amplifiers using either the Micromega CD2 transport with Pink Triangle's Original DAC or a Stone marble plinth mounted Garrard 401 with a special Garrard 401 Celebration SME tonearm (this one was Noel's idea) as sources.

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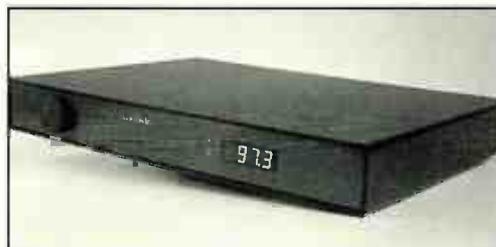
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PHILIPS DCC130

Vs.

SHARP MD-D10E

Simon Cooke referees a bout between two personal stereos championing the DCC and MiniDisc formats.

Ladies and Gentlemen! In the red corner we present, at just under 475grams and 115mm high, the Philips DCC130 Digital Compact Cassette personal stereo, while in the blue corner, at just under 325grams and standing just 110mm tall, we have the Sharp MD-D10E MiniDisc personal stereo.

Both are kitted out in black, the Philips sporting a snazzy hologram-effect DCC logo on the front, complementing silver buttons. The Sharp, in contrast, comes in black offset with white legends.

Both are playback only machines and have similar facilities, offering stop, play, skip, search, text scroll, and bass boost. Due to the difference in formats, the Philips offers tape A/B side switch and auto-reverse which are unnecessary with the single sided MiniDisc.

The Philips sounded like a tape player from the start, a mild hiss being present with DCC digital playback. This vague hiss behind the music I initially thought to be from the original master tape, but it was absent with MiniDisc. With further listening I discovered that the level of hiss remained constant, which suggests that it may be due to the player's electronics rather than

the recording.

The Philips had a very reasonable bass performance that bounced along holding the rest of the music in time. It was not

eminently suitable for hard, driving, rock.

The midband was a little gritty, becoming a trifle compressed towards the top of the range. It gave a good account of itself with electric guitar especially, allowing the instrument to raunch through the mid and into the treble, and I craved a recording of a good steel guitar to audition this deck with.

Treble notes became steadily more compressed as the level rose, with orchestral arrangements suffering the most, and violins, as usual, bearing the brunt of the oppression.

Analogue reproduction was very reasonable, comparable with the better £100-£150 personal stereos. It was punchy and clean, but a little cold in its presentation, lacking the sweetness of the very best. My only quibble with the analogue playback was the ineffectiveness of the noise reduction circuits; they failed to cut analogue hiss back to what I consider to be a reasonable level.

Where the Philips scored over the Sharp was in portraying the music as an entity. Fewer notes sparkled or hammered out of the picture being painted by the headphones, making this player easier to



quite in the class of a good Nakamichi, losing depth and power in comparison, but was entertaining all the same. This lack of really deep bass is a pity, since otherwise, this machine would have been

NAKAMICHI AND MANKIND SHARE ONE COMMON FUNDAMENTAL GOAL



PERFECT REPRODUCTION

Nakamichi equipment shown:

IA-3 Amplifier - "... the IA-3 is a more natural sounding proposition than the Pioneer A400." - Audiophile, April 1993

CD-4 CD Player - "... this player sounds as smooth as café au lait." - What Hi-Fi, June 1993

DR-3 Cassette Deck - "Well built and superb sounding... trounces even what are, on paper, more impressive machines." - What Hi-Fi, March 1993

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listen to for an extended period, but it also meant that the Sharp was the more involving.

The sound of the Sharp, by contrast, was light and treble-led, which is seemingly inherent to the MiniDisc format. The Sharp's sound was noticeably thinner than the Philips, but gave a better impression of space, due to the lower level of hiss.

Bass was not the Sharp's forte, however, and although it could portray single bass lines adequately, these were easily swamped by the mid and treble. The midrange was quite well portrayed, although it showed obvious signs of compression towards the top end. Otherwise it was clear and clean all the way up.

Although the Sharp was a bright sounding machine the treble wasn't exactly clean or clear. This was less of a problem with soul and rock recordings than with jazz and orchestral work, where the strings, percussion and wind sections turned into a shrill, compressed portrayal towards the top, akin to a cat's claws on glass.

Having tried both machines with the headphones provided, I tried them with various other 'phones, and also sourcing into my stereo. This allowed me to comment as I have on the basis of the machines alone, but you will find that the headphones supplied have a tendency to compress both the bass and treble frequencies. To make the most of either, you should buy a pair of good quality headphones such as those from Sennheiser or Beyer, and sacrifice the facility of 'remote' control on the 'phones supplied.

Tracking ability was good on both, comparable with the better analogue personals around, and a definite improvement on the CD portables I have heard. Both machines made light work of general knocks and bumps, but running on the spot, and up and down stairs, caused the Philips some problems; every

so often it would give up, pause for a moment, and then carry on playing. By contrast, the only time that the Sharp gave up was when suddenly caught between 75 kilos of reviewer and a bus seat as the No 176 pulled away sharply, not giving me time to extricate it from my pocket.

On the subject of buses, or any noisy location where a personal stereo might normally come in handy, it should be noted that the Sharp has been designed to avoid distressing fellow passengers, not by insulating the headphones, but by the simpler expedient of cutting available volume. Even at full whack, playing Sade's 'Love Deluxe' album, I could sit next to another 'Walkman' victim and hear his 'Killer' tape well enough to identify George Michael, rather than Seal, singing. Any extraneous noise leaks in and smoothes the track being played. I never thought I'd say it, but couldn't it be a little louder? Or rather, provided with better insulated headphones?

The Philips, by the way, went more than loud enough for me, but suffered some distortion at the highest volume settings.

It's hard to recommend either of these players above the other for a



variety of reasons, none of which have anything to do with how they performed sonically, because until Philips and Sony reach agreement on the DCC/MiniDisc issue, the choice of which you buy will be made on the basis of whether you want to listen to Polygram (Philips) or CBS (Sony Music).

If you're worried about your street cred, the Sharp definitely carries kudos, as it is stunningly small and light, and gives the cleaner, sweeter sound of the two. The Philips is, by comparison, large and heavy, and sounds it, giving a meatier, more macho performance. You need a bag or extremely large pockets to carry one around, but both machines lose out in style and sound quality to other personal stereo formats.

There's probably no reason why anybody would choose MiniDisc as a home format, since CD is too well established. DCC however, has the advantage of already being a home audio format, so if you buy a player for home use you can use the tapes on the move too. But there we come back to the Philips/Sony debate ●

Philips DCC-130 £400
Philips Consumer Electronics,
City House,
420 - 430 London Road,
Croydon,
Surrey CR9 3QR
Tel. 081 689 2166

Sharp MD-D10E £400
Sharp Electronics (UK) Ltd.
Sharp House,
Thorp Road,
Newton Heath,
Manchester M10 9BE
Tel. 061 205 2333



BLOOMING

Tearing himself away from 'Gardeners' Question Time', Dominic Baker



Five years is a long time to wait for the second half of a pre-power combination, but Sean Sedwards of Rose Industries is something of a perfectionist, only announcing the RP-190 power amplifier when he was completely satisfied with his efforts. Unlike the RV-23S pre-amplifier, the RP-190 is not a valve/transistor hybrid, but relies upon the strengths of transistors alone to produce the quoted 70watts. This has enabled Rose to use a chassis having the same front panel dimensions, but 50mm greater depth.

Inside the attractive chassis is a host of quality components, soldered and wired with similar neatness to that found in Naim Audio's equipment. The eight discrete output devices are mounted on their own individual upright heatsinks (which run hot within half an hour) surrounded by lines of smoothing capacitors and metal film resistors. A large toroidal mains transformer, screwed tightly to the chassis, supplies the power amplifier.

Both the RV-23S pre and RP-190 power amplifiers have well specified connections. The pre has four line level inputs including two tape monitors and one pair of phonos which can be switched

between Moving Magnet and Moving Coil cartridges. Next to the phono inputs are two sockets that accommodate cartridge loading plugs, which is an extremely useful feature. The RV-23S has two pairs of outputs to allow bi-amping. The power-amplifier is no less flexible. It has two pairs of speaker outputs for bi-wiring and can be switched into mono, giving a claimed increase of 25watts, for monoblock operation.

Both the power amplifier and pre-amplifier require a few inches of space above them due to the amount of heat they dissipate, which is a shame, because they look very smart placed on top of each other. Having said this they are both stable, reaching a temperature and staying there, even when driven quite hard in the case of the RP-190.

I left both the pre and the power amplifiers on overnight to give them a chance to burn in and give their best. Out of curiosity I did listen to them whilst cold, but the pre-amplifier sounded vague and the power-amp a little cold and hard. By the next evening things had changed considerably, the RV-23S had come into focus with the atmosphere around musicians clearly depicted and the overall sound being that much more solid. The

RP-190 had lost its chill and was now producing a richer, more subtle, mid and top and a tighter bass.

Switching the input selector to CD and winding up the volume was a pleasurable experience. Not only was the sound enjoyable, but the controls were nicely weighted with a quality feel to them: these are well engineered products inside and out. The RP-190 had plenty of power, even when driving the Quad ESL-63s which are insensitive and an awkward load. With more sensitive conventional speakers the Rose could drive the neighbours out without difficulty.

Starting with The The's latest album *Dusk* I was relieved to find that the Rose combination could conjure up a large, solid and believable soundstage with plenty of atmosphere. Instruments were well defined, the Rose able to pick them out of the mix and clearly follow their path through Matt Johnson's maze of sounds and effects. All of The The's albums have a similar complexity to them, with several melodies simultaneously spiraling through a track, which can confuse lesser systems. The Rose coped admirably, although it did seem to be softening the attack of some transients.

This softening, however, is no bad

ROSES

plants the Rose pre and power amplifier combination in his system

thing. Rose Industries have designed this amplifier with the virtues of valves in mind. To this end the sound is relaxed and easy to listen to, with a clear and open mid range and delicately detailed treble. With Steve Earl's "Esmerelda's Hollywood", which has strong treble energy, the RP-190 played every cymbal smash with all the vibrancy necessary, and smoothly. It was not blunted in any way, but was clear and pure, free from distortion. I used a stripped down pair of Quad ESL-63 electrostatics for the majority of my listening, changing them once to our own 3-way kit 'speakers to see if the RP-190 could provide grip and control in the bass and didn't show any harshness with the Tonigen ribbon tweeter, which has a tendency to do so with lesser amplifiers. The Rose passed this test.

The bass certainly wasn't dry. It's rich, smooth, big and flows out across the carpet to engross you. But it had some punch to it, giving it speed and slam if demanded. In some ways this is a failing, neither having the depth and solidity of a good valve amplifier or the control and dynamics of a good transistor amplifier. In others it succeeds with a velvety texture and an excellent sense of timing. I found it a pleasant change from the amplifiers I have listened to recently, having a much more relaxed and easy sound.

After several albums I was becoming increasingly worried about the influence the pre-amplifier was having on the sound and switched to my normal DPA 50S transistor pre. As I had suspected, the RV23-S was a little closed in, limiting the atmosphere and space of a recording; it was not as open and natural as the 50S. With this system the power amplifier was able to show what it was really capable of doing. As with the Rose pre., the richness was still there in the bass, albeit to a lesser degree, giving it a more neutral balance, but the biggest change was the way it opened out into a more spacious and wider soundstage. Although a very competent performer at its price, the RV-23S does limit the power amplifier somewhat. However, this is the case with nearly all pre/power combinations with one half always restricting the other to a greater or lesser degree.

Having said this, the RV-23S is a very smooth and clean performer. There are no clicks or pops and once past the 60second delay following switch on, which allows the valves to heat up, the Rose functions as fuss free and silently as any transistor amp.

Both the new RP-190 power amplifier and the RV-23S offer very good value for money. The power-amp is held back a little by the pre, but then for £495 you get a valve/transistor pre with an impressive range of inputs including tape monitors and MM/MC phono, good construction and a smooth sound. There are very few others who offer this kind of spec for this kind of money. The power amplifier I would rate slightly higher in terms of absolute sound quality and it would easily be at home with more expensive partners. A pair could be used as monoblocks to provide an easy

upgrade path, taking it even further up the ladder. As a combination, the RV-23S and the RP-190 for just under £1000 together provide an amplification system with a wide range of facilities, an easy upgrade path and a smooth and relaxing sound. What more could you ask for?

RV-23S / RP-190 £495/495

Rose Industries Ltd.,

P.O. Box 13.

Abingdon,

Oxon.

OX14 4XE.

Tel. 0235 847023

MEASURED PERFORMANCE

The RV-23S preamplifier uses valves, with discrete transistors for the disc stages. Modern transistors and FETs can give lower hiss than valves, but whilst the RV-23S moving magnet (MM) was quiet (-74dB hiss), the moving coil (MC) was a little hissy (-65dB), having an equivalent input noise voltage double that needed, consequently it is best used with high output MC cartridges.

Bandwidth through all inputs was wide, stretching from around 5Hz up to 155kHz with CD tuner/tape, and up to 70kHz though phono. The phono input will reproduce subsonics, since it lacks a warp filter; owners of reflex loudspeakers need to beware of cone flap with LP.

Distortion levels were low, just 0.036% of second harmonic, which is subjectively innocuous, being produced through the disc stages to the output. Maximum output from the preamp was 20volts, so it can easily drive all power amplifiers.

The solid state power amplifier produces 78watts per channel into a normal eight ohm load, increasing to 132watts into a low four ohm load, so it will go loud. Sensitivity was low at 1V for full output, meaning the RP190 must be partnered with an active preamp having gain, except with CD. Like the preamplifier, Rose have engineered in wide bandwidth and low distortion; I was glad to see second harmonic predominate.

These are well engineered units with a fine measured performance. I'd expect an interesting sound from their hybrid circuitry. **NK**

RV23-S PRE-AMPLIFIER

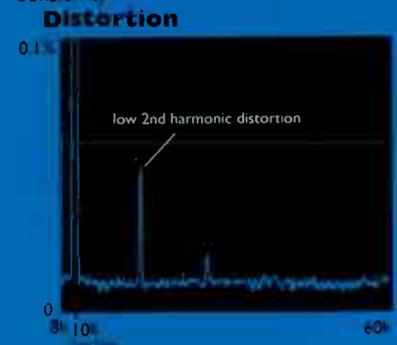
CD/tuner/aux.
Frequency response 5Hz-155kHz
Separation 83dB
Noise -94dB
Distortion 0.036%
Sensitivity 210mV
dc offset 0.0mV

Disc MM
Frequency response 5Hz-70kHz
Separation 85dB
Noise -74dB
Distortion 0.036%
Sensitivity 2.3mV
Overload 420mV

Disc MC
Frequency response 5Hz-70kHz
Separation 82dB
Noise -65dB
Distortion 0.036%
Sensitivity 0.25mV
Overload 48mV

RP190 POWER AMPLIFIER

Power 78watts
Frequency response 6Hz-63kHz
Separation 50dB
Noise -108dB
Distortion 0.006%
Sensitivity 1V





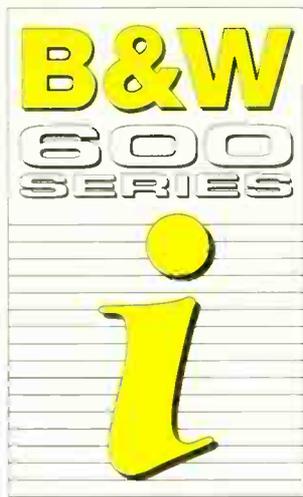
Look at this... I told you B&W would make another improved version of the DM620!

If I had castors like the old days instead of these spikes I would have got away

Talking Speakers

At B&W we believe in evolution. For almost thirty years we have been making some of the world's finest domestic and professional monitors, developing our skills and products to meet the needs of the most discerning listener. You.

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world-renowned R&D department allows.

The 600 series has evolved significantly over the past three years (although considering the reviews on their release, it seemed hardly possible at the time). All of the new series have improved crossovers and ferro-fluid cooled tweeters (metal domed, of course), and the larger models now have one piece moulded bass drivers. The only thing that we haven't been able to improve upon is the classic modern styling by Kenneth Grange.

We'd go so far as to say that the 600 series has evolved to the point where it can speak for itself.

FIVE ALIVE !

Simon Cooke looks for a £300 CD player to put some life into his system.

So you're looking to upgrade your CD player from the entry-level £100-£200 player that's been driving your system? Or maybe you're starting out on the hi-fi road with the help of an amenably large piggy-bank and you're looking for a better than average starter machine? Then this is the review for you.

The first step up and away from the entry-level separates will give you several choices. You can go for a 'lifestyle' product such as the Philips at £350 which should look good as well as sound good. At the other end of the scale, there's the £230 Marantz, of which Alan Sircom said 'those who expect it to better rivals of twice the price will find that their idol has

feet of clay'. The Marantz is here not only to test it against more expensive players, but because a £230 player leaves you with £120 for an outboard DAC connected to its digital output, and that's a long way towards a QED Digit . It's also a start on the road to Perfect Pitch's new Dacula, Micromega's Microdac, or even a DPA Little Bit, so is it worth buying a £230

machine rather than a more expensive one when you're saving up for a separate DAC?

Perhaps, but it does leave you with a player which only has £230 build quality, and looks like it. This brings us to the £330 players from Yamaha and Denon, and £350 players from Philips and Pioneer. These should give you not only better build quality than a £230 machine, but also better sound quality. How does the popular Marantz shape up against them?

Of course, your decision on which player you buy won't be made just from the players tested here, but from the entire market range. It'll also depend heavily on your priorities. If the look of your hi-fi is important, you'll probably prefer a one-box player, and will also want it to blend with your decor.

If sound quality is most important, you might prefer a cheaper player with an outboard DAC, especially if you want to spread the cost of your player. Conversely, if you're thinking of another upgrade in the near future, you may simply not want to spend too much on this round. Finally, there's

always the question of how you want your hi-fi to sound after the upgrade, and only you know that.



DENON DCD-1290 £330

To me, the Denon is, visually, an uninspiring black-box, albeit redeemed by impressive build quality and a glossy finish. The fascia looks neat, due mainly to a video recorder style flap that hides the lesser used functions, as well as an on-board numerical keypad, from cluttering the plain front panel.

The hidden functions include auto space, time edit, pick (picks the best track combination for using tape time), link (to use edit functions to dub several CDs onto one tape), side A/B, fade, and peak search, for use when taping from CDs.



There are also the more usual program, index and repeat functions.

In addition, there is an interesting feature called 'pitch' for changing the apparent speed of replay in 0.1% increments from -12% to +12%, and hence the pitch of the music. Not much use for the home user perhaps, but great for Mickey Mouse or Deputy Dog fans!

The rear panel sports fixed and variable analogue output phono jacks, with coaxial and optical digital outputs. None of the phono jacks are gold plated.

Denon have made a point of removing the headphone jack and circuitry from this 'UK' version, in order to 'maximise the sound quality on the line outputs' by spending the money on components elsewhere.

SOUND QUALITY

Now here's a conundrum. First impression of the Denon was of a big fish lost in a pool of minnows. It sounded much more coherent, musical, and convincing than the other machines.

However, a longer period of listening showed that the Denon simply had a very different approach to the other players in this test.

The tonal balance of the DCD-1290

was generally good, and better than average on most vocal works, the Denon being a spacious and atmospheric player. Bass frequencies had a modicum of power behind them, and the Denon definitely went low, but there was surprisingly little impact on the really deep notes. The Denon had trouble with kick drum and similar lines which should hammer out. They were just a shade too slow to make the cleanest impression.

On mixed bass/snare drum work, i.e. drum lines moving between the bass and lower midrange, the Denon had some

trouble combining the two into a coherent whole. Otherwise, the midband was smooth and even throughout, especially on strings, although sax had a tendency to be slightly compressed and brassy.

The top end was very good, although it had a tendency to splash transients, and also to add force to strong resonances, such as those of glass harmonica, so that they could be quite

painful to listen to. Sustain on high notes was excellent, however, benefiting vocals and orchestral work.

Soundstaging was good, being a little more solid than average, but still no match for a good outboard DAC.

Both optical and co-axial digital outputs were excellent, with the co-axial being just slightly warmer.

CONCLUSION

If Denon don't have a winner here, I'll eat my headgear. However, it is a very middle of the road kind of machine and to be honest, I have to say that I don't find it all that appealing, since it simply is not exciting enough. To summarize, however, I have to admit that this is a very capable all-round player.

Denon DCD - 1290 £330
Hayden Laboratories Ltd.
Hayden House,
Chiltern Hill,
Chalfont St. Peter,
Bucks.
Tel. 0753 888447

MEASURED PERFORMANCE

The Denon DCD-1290 has a flat response with a slight lift in the bass and treble. This should give it a solid sound with a bright and lively treble that may become a little sharp at times.

The distortion figures are not exceptional; with a -30dB signal, representative of normal music level, the DCD-1290 displays a wide spread of harmonics, shown in the distortion analysis. The strong harmonics seen rising to the top of the plot are all odd order, i.e. 1st, 3rd, 5th, which will give the Denon a sharp, perhaps gritty, treble, especially taking into account the slight response rise at high frequencies.

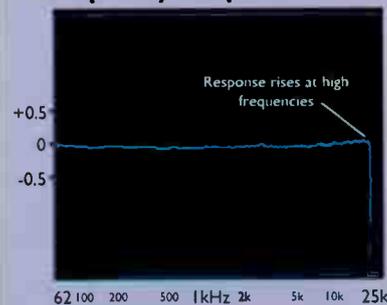
With a -60dB signal distortion rises to as much as 0.81%, indicating that the dynamic range will be lower than the best, which it is at 103dB.

Elsewhere the measured performance was good, with low noise, good separation and output only 0.1V higher than the Philips standard of 2V, so there will be no need to compensate its level in a demo. **DB**

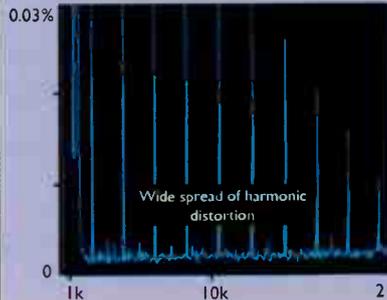
TEST RESULTS

Frequency response	2Hz-21kHz	
Distortion %		
-6dB	0.005	0.004
-30dB	0.098	0.095
-60dB	0.73	0.81
-90	37.6	38.0
-90dB dithered	7.2	7.4
Separation	left	right
1kHz	102	116
20kHz	76	81
Noise	-110dB	
with emphasis	-109dB	
Dynamic range	103dB	
Output	2.1V	

Frequency Response



Distortion



MARANTZ CD-52 mkII £230

Marantz have made their name with several well-received products, often tweaked Philips machines. This is apparent in the finish of this machine, which is light and plasticky, but still quite solid.

The main disappointment with this player was that we're firmly back in standard black-box audio land, with the drawer on the left hand side of the fascia, and the display in the middle. Below the readout is a rank of buttons, open/close, 10 numerical buttons, memory, cancel, repeat, display mode, skip forward and back, and search, from left to right. In the



top left corner of the fascia are play, stop, and pause buttons, and in the bottom left, a gold-plated headphone jack and volume control.

My eye was caught by the two copper-coloured screws on each side, attaching the upper panel to the chassis. The contrast with the black panel which they secure is striking, and slightly incongruous on the side, where they can so easily be seen.

The rear panel has three gold-plated phono jacks, for line out left and right, and digital out. There are also two standard, unplated jacks, for remote control when connected to a Marantz system. There is no facility for optical digital output.

SOUND QUALITY

The Marantz, after some of the other players in this test, simply leapt out through the speakers, being more open and dynamic. The problem was that the foibles of this player simply took longer to show themselves.

Tonally it was good, especially with the bass, which seemed much more expressive than most other players, and also more firm and meaty. Better all-round in fact.

The midband was a trifle gritty, but otherwise stable and capable of giving a

realistic portrayal of the music.

Moving up into the treble range, there was still good detail, with the notes cutting clear and clean through the air. That the treble did not become shrill, however, was mainly due to what seemed to be a roll-off at the very top, and with instances such as Eiji Kitamura's clarinet break on 'After you've gone' (Scott Hamilton Quintet in concert, CCD-4233) the clarinet was held back a little and failed to demonstrate its customary exuberance. Instead, the break seemed a trifle slow, floating out of the speakers, rather than ripping across the room.

The Marantz offered a more open stage than most of the players, although even this was much less well defined than most outboard DACs, with large orchestral arrangements especially, the positioning of instruments and smaller details was simply too fluid and mobile to be convincing.

The co-axial output stage of the Marantz, however, was probably one of the better ones tested here. It reduced the springiness of steel stringed guitar to an acceptable level over the analogue output stage. Bass lines were carried off well, although it had a vaguely mushy air when compared with some of the more solid transports. Overall, however, the digital output stage was clean and musical, without any interference being apparent.

CONCLUSION

The Marantz stood out as one of the better machines auditioned. Whether it would actually win the title is a matter of personal opinion, the Marantz offering a much more forward sound than the others here. Having no optical output on this player means its options as a transport are somewhat limited, but the performance through the coaxial link was good enough not to count against it.

Marantz CD - 52mkII £230
Marantz Hi-Fi UK Ltd.
Kingsbridge House,
Tadbury Oaks,
575 - 583 Bath Road,
Longfield,
Middx. UB7 0EH
Tel. 0753 680868

MEASURED PERFORMANCE

The Marantz CD-52mkII has a very similar response to that of the Denon. A slight lift at either frequency extreme will give it a solid, but lively sound, although perhaps not quite as bright as the Denon's.

The distortion plot taken with a -30dB input level to represent an average music signal shows a wide spread of distortion. Fortunately, the stronger harmonics are even order which tend to sound innocuous, but the reasonably high harmonics will lend some sharpness to the sound.

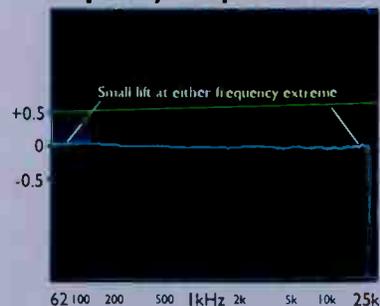
Elsewhere the Marantz measures adequately, although noise could have been a little lower and dynamic range a little higher.

One thing to watch for during a comparative demonstration is the slightly high output level of the CD-52. At just under 2.3V it will be audibly louder at any given volume position, giving it an advantage over competitors. **DB**

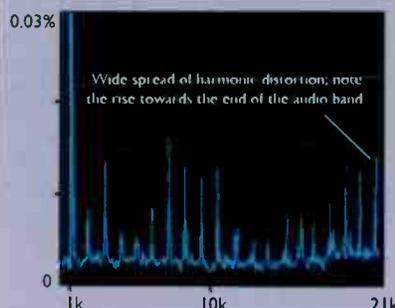
TEST RESULTS

Frequency response	2Hz-21 kHz	
Distortion %		
-6dB	0.005	0.006
-30dB	0.028	0.026
-60dB	0.86	0.67
-90	27.7	29.6
-90dB dithered	16.7	9.6
Separation	left	right
1kHz	105	106
20kHz	85	87
Noise	-97dB	
with emphasis	-97dB	
Dynamic range	104dB	
Output	2.27V	

Frequency Response



Distortion



PHILIPS CD 950 £350

The look of this machine is rugged, with its rough matt black powder finish, yet it feels quite light in weight, as though something were missing. The fascia has a centrally positioned drawer, with power button and IR remote sensor to the left and open/close to the right. Above the drawer is a curved LED dot-matrix display and below, a bank of buttons. These include large buttons for the major functions—i.e. play, track skip, stop, pause, and search—situated in the centre, and small buttons for the program functions which are situated to either side.



Buttons to the left of the drawer are for program set, review, cancel, shuffle and scan.

To the right of the drawer lie buttons for track repeat, Favourite Track Selection memory, time format select for the display, and display on/off. This is positioned, redundantly, beneath a small red LED which glows to tell you when the display is unlit.

There's more; a gold-plated headphone jack and volume control to the left of the fascia.

The rear of the player is spartan by comparison, sporting only an optical output, and digital and analogue phono jacks. There are also two jacks for connection to a Philips remote control system.

SOUND QUALITY

The Philips had quite a dry tone, shifting over to thinness in the upper reaches. Resolution was not as good as I had expected, with almost all arrangements coming out with a slightly muddled, veiled air. The exception to this were small, simple arrangements, especially solo vocals, where the tonal quality gave voices an added solitude.

In the bass regions, the notes were

very slightly loose, like a sail; tied down at the corners, but bowed taut and billowing. To complete this impression, bass lines seemed to sail out rather than punch through the air.

Moving up into the midrange, the tonal quality became noticeably drier, with a saxophone and clarinet duet leaning a little too far towards a 'creak and squeak' performance without the usual breath and panache of the other players in this test.

Further up the scale, treble notes became thin and brassy, turning the aforementioned clarinettist's soaring exuberance into shrillness, and higher string and vocal passages were also noticeably compressed.

Compression was also audible on the soundstage, which seemed somewhat confused, but about average.

The reasons for this performance are, quite literally, all too visible. The display seems to cause quite a large quantity, but not all, of the problems

listed above. With this switched off, the performance seemed to become a little cleaner, clearer and neater, and although the very sharpest edges of the performance seemed to disappear, the 'display on/off' button was obviously no panacea.

The coaxial output gave quite a springy, bouncy sound, although the Philips' optical output was noticeably better, improving separation, clarity, and detail. Impressive.

CONCLUSION

Not perfect, but one heck of a long way from being bad. Like most players in this test, it crams as many features in as is humanly possible, and would probably perform a lot better without them, but then, of course, it wouldn't sell so well. It performs best as a simple transport without the display functions, but is well worth a listen on its own account.

Philips CD £350
Philips Consumer Electronics Ltd.
City House,
420 - 430 London Road,
Croydon,
Surrey, CR9 3QR
Tel. 081 689 2166

MEASURED PERFORMANCE

The Philips CD950 had reasonable distortion figures within the audio band which appeared to suggest a well engineered player, but as with other recent Philips players the out-of-band distortion looks quite nasty. You can see at the end of the -30dB plot how the distortion spikes are starting to rise strongly at higher frequencies.

The average distortion in the audio band results in a reasonable dynamic range of 106dB and noise is low at -111dB. The output is a touch high, Philips missing their own 2V standard by around 0.1V, but not enough to make level matching necessary during listening tests.

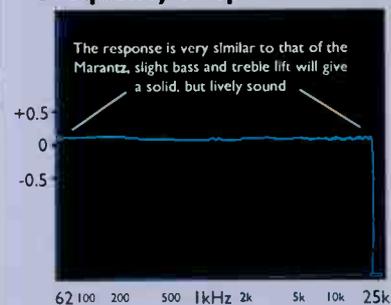
The response of the CD950 is flat with only a slight lift in the bass which will give the player a solid sound.

Within the audio band the CD950 measures well, but the strong rise in distortion out of band is a little worrying. **DB**

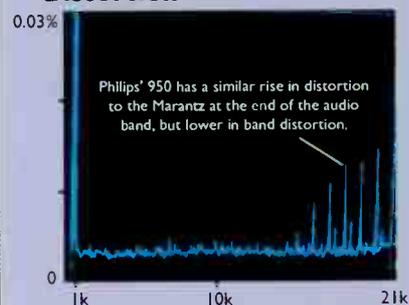
TEST RESULTS

Frequency response	2Hz-21kHz	
Distortion %		
-6dB	0.005	0.005
-30dB	0.013	0.013
-60dB	0.60	0.60
-90	31.7	33.0
-90dB dithered	3.2	3.5
Separation	left	right
1kHz	117	117
20kHz	109	114
Noise	-111dB	
with emphasis	-111dB	
Dynamic range	106dB	
Output	2.1V	

Frequency Response



Distortion



PIONEER PD-S802 £350

The Pioneer is slightly taller than the other players tested, and looks even bigger than it is, a property attributable to fascia styling. It felt good and solid in use, and the platter concept is unusually reassuring I felt.

The slightly curved disc drawer, with its small window, positioned so that you can see the disc turntable, fills the bottom centre of the player. This player employs Pioneer's own 'stable platter mechanism' to reduce disc vibration during play by coupling the disc to a relatively massive platter, in similar fashion to a record deck.

Above the drawer lies the display panel,



and to the left, a single rank of angled buttons. These are for power, display off, time display format, and repeat, as read from left to right. To the right of the drawer lies a double rank, the small buttons on top being for stop, backward search/skip, and forward search/skip. Below these are larger buttons for open/close, pause, and play. Further to the right of the fascia are two LEDs showing analogue and digital output status, and a small gold output selector button.

The rear panel contains plain phono jacks for analogue output left and right, digital coaxial out, and an optical output, as well as a small socket for dedicated operation with a Pioneer cassette deck.

SOUND QUALITY

The first impression of this player was one of the strong hammering of a bass drum line from the speakers. As soon as the music moved up into the midrange, however, it became clear that there was more to this player than meets the eye. Midband was quite heavily forward, and somewhat gritty, whilst also being less firm than the bass.

Moving up into the treble, the performance became noticeably clearer than lower in the range, but also

recessive, due to the treble roll-off.

This forwardness in the mid caused various problems when playing choral music. The difference between male and female solo vocal on one CD accentuated the difference in volume so much that in the quieter male part the Pioneer failed to resolve the information, and almost extinguished the vocals at one point.

Extinguishing notes were not just a failing of the interaction between male and female vocals; on Tom Waits' "Swordfishtrombones" album (IMCD 48), for instance, the glass harmonica opening the final track came across with a broken tone, since not all notes were delivered with the same scrupulousness by the Pioneer. Notes of similar tone and volume can be treated very differently by this player, one being delivered with force, and the next going virtually unnoticed.

Soundstaging was as variable as the tone, at best excellent, at others, well, an advertisement for outboard DACs.

Both the co-axial

and optical outputs on the Pioneer were quite impressive. The co-ax however, still conveyed a slightly muddled stage with a little interference noise apparent. The optical output, on the other hand, was devoid of even the smallest remnants of hiss, giving a nice, clean, upfront sound, with just a slight hint of muddle in the upper reaches.

CONCLUSION

The Pioneer is one of those difficult-to-classify players, which presents music completely differently to any other player around. If you can cope with putting the disc in 'wrong way up', you're probably half way to liking it. The 802 sounds the way it looks, having a very unusual and somewhat 'broken' or 'scattered' sound, but not one which was totally unappealing. It's also good as a transport.

Pioneer PD - S802 £350
Pioneer LDCE Ltd.
Pioneer House,
Hollybush Hill,
Stoke Poges,
Slough
Bucks. SL2 4QP
Tel. 0753 789789

MEASURED PERFORMANCE

There is normally very little difference between the measured performances of modern Japanese players, most are competent with no anomalies. The Pioneer is an exception. In every area apart from one, the PD-S801 was the best in the group.

Distortion was admirably low for a player in this price bracket which will give it a sweet, clean sound. At -30dB only a small amount of first and second harmonic distortion was evident. This low distortion goes hand in hand with a wide dynamic range of 112dB and low noise at -113dB. Output was a little high at 2.45V, so the volume will have to be reduced a little in the demo room to match its output to competitors.

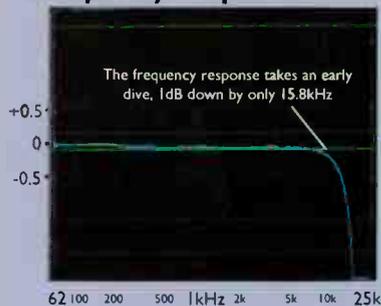
So where does the Pioneer slip up? Surprisingly, in its frequency response. This takes a strong dive from around 10kHz, is 1dB down by 15.8kHz and never actually makes it to 20kHz. As a result the Pioneer will sound soft and unaggressive, but dull.

To sum up the PD-S801 performs well in all areas, but its rounded response will be too dull for most. **DB**

TEST RESULTS

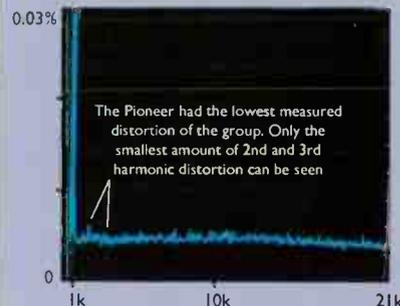
Frequency response	2Hz-15.8kHz	
Distortion %		
-6dB	0.006	0.006
-30dB	0.006	0.005
-60dB	0.32	0.32
-90	28.7	28.7
-90dB dithered		noise only
Separation	left	right
1kHz	120	125
20kHz	94	100
Noise		-113dB
with emphasis		-116dB
Dynamic range		112dB
Output		2.45V

Frequency Response



62 100 200 500 1kHz 2k 5k 10k 25k

Distortion



0 1k 10k 21k

YAMAHA CDX-870 £330

Yamaha seem, with this player, to have tried harder to make the ideal black-box than any of the other manufacturers. They have succeeded in making an acceptably solid machine as well though.

The CDX-870 isn't inspired or inspiring in style, but some visual interest is injected by the slightly curved front panel. An orange LED display sits above a swanky little roll-over panel which is far better engineered than Denon's video recorder style door which felt a little flimsy. To the far right of the fascia, next to the display, you will find the basic



control buttons for open/close, play/pause, and stop. A gold-plated headphone jack and volume control are provided just below these.

To return to the rolling panel: closed, it is simply a piece of black fascia. Press the bottom in, and it rotates to show two rows of small buttons. The upper row, left to right, orders program and tape functions for recording from disc including a 'space' function for inserting additional time between tracks when recording, index, program repeat, random, skip, and search. The lower row comprises an eleven digit numerical keypad, and time display mode.

The rear panel sports fixed and variable phono outputs, as well as coaxial, all gold-plated. There is also an optical output.

SOUND QUALITY

The Yamaha opened up with an easy, relaxed sound, and was quite obviously an undemanding player to partner.

The bass and lower midrange had a tendency to be rather loose, but not so much as to sound empty or hollow by any means. Especially in the bass regions the Yamaha resolved detail well, with the tone of the instruments being very

musical. Despite the slight looseness, it hammers out a drum bass line quite impressively, without letting it flap.

Up in the midrange, the relaxed attitude of the Yamaha began to show itself. This player had a little difficulty with driving guitar and drum rhythms, in that its portrayal of these was slightly too relaxed and short on brio. It didn't quite manage to relay the excitement of live rock recordings, although all of the details and tones seemed to be present, and it gave excellent coverage of even the fastest lyrics.

The upper mid, and especially the treble, had a tendency towards hardness, even glassiness at times. Steel guitar split the two aspects of the midband presentation quite neatly, being very open and relaxed at the bottom, but sliding upwards with little control apparent. Despite this hardness, top end notes seemed to retain all the required detail, with sustain and decay reproduced

impeccably.

Imagery and staging were both adequate, again supported by the resolution, although given this support, it could, perhaps, have been better.

The co-axial output of this player lent a shade more towards the bass and the optical towards the treble. All outputs were adequate however, being clean and clear all round.

CONCLUSION

A nice, uncluttered look and close adherence to the black-box ethos means that this player will appeal to a lot of people, and the sound is so relaxed and undemanding that it would be difficult to fault this player unless you are one of the warts-and-all hi-fi fraternity, or crave pace and excitement above all else. Adrenaline was obviously not part of the design brief on this player, but it gives an adequate, and above all else, relaxing performance.

Yamaha CDX - 870 £330
Yamaha Electronics UK Ltd.
Yamaha House,
200 Rickmansworth Road,
Watford,
Herts.
Tel. 0923 233166

MEASURED PERFORMANCE

Yamaha's CDX-870 measured best all round in this group test; only the Pioneer had lower distortion, but it had problems in other areas. The Yamaha's response rolls gently off at high frequencies which should, along with the low distortion, add up to a smooth sound. There's a small amount of bass lift that will give the bottom end some weight and solidity.

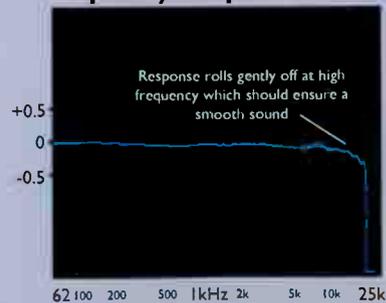
The distortion figures are quite reasonable for a £330 machine. The distortion plot taken from the worst channel at -30dB shows that the Yamaha has a wide spread of harmonic distortion, but none of the harmonics are particularly strong, so this could be a sweet sounding player. The other channel had lower distortion, but a similar spread of harmonics. The low distortion of the CDX-870 means that it has a reasonable dynamic range of 107.5dB.

Elsewhere, the CDX-870 measured well with no serious flaws and output was exactly 2.0V, so no level adjustment will be necessary in the demo room. **DB**

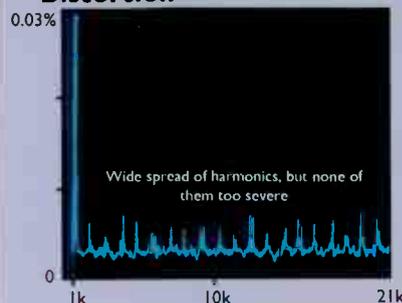
TEST RESULTS

Frequency response	2Hz-20.7kHz	
Distortion %		
-6dB	0.005	0.004
-30dB	0.006	0.025
-60dB	0.44	0.55
-90	31.0	34.2
-90dB dithered		noise only
Separation	left	right
1kHz	100	101
20kHz	74	75
Noise		-110dB
with emphasis		-110dB
Dynamic range		107.5dB
Output		2.0V

Frequency Response



Distortion



CONCLUSION

Let's start summarising with the two stylish centre-transport machines. They offer the same functions, with the £350 Philips which is slightly treble forward,

sounds prettier, but it's a long way from truth, so I've got to say it again: this is a real curate's egg of a machine, and the one that I'd say was essential to audition if you are buying in this price bracket. If you hate it, you've lost nothing by listening, but if you love it, probably no-one else would have recommended it.

There's also the Marantz, Denon and Yamaha players to be considered, and they follow the well-worn left-hand drive (or drawer) black-box

without the feeling of the build quality and durability of the more expensive models. The Philips on the other hand, fell down because the finish and sound quality didn't quite equal that of other players, and is rather limited as to partnering equipment by its slightly unusual design.

Third place has to be awarded to the Pioneer, which, of course, is such a variable machine that it would be wrong to rank it any higher. I'm afraid you'll just have to try it for yourself.

The Marantz is here to test its mettle against the pricier machines, and unfortunately it didn't do so well. It's still an excellent £230 machine, but the extra £100 really tells in terms of build finish and smoothness of sound, and the Yamaha and Denon are definitely good players for the price, so the Marantz looks somewhat outclassed.

For the extra £100, you buy not only a better player, but a better sounding transport and coaxial output, as well as

being a 'lifestyle product', designed mainly to accompany Philip's own systems, so the other centre drawer player, the £350 Pioneer, is the one which will suit most standard systems aesthetically, but it is also the oddball of the test.

The discs are loaded into the Pioneer playing-side up, onto a turntable, and this player sounded as unusual as its loading mechanism. On occasion it endeared itself to me with an almost mesmeric production of the music, and on others I just cringed away from what it was doing to my favourite tracks.

Having had mixed feelings about the Pioneer in the listening room, I understood how real the Pioneer's sound was when I sat just a few feet from the mouth of Scott Hamilton's sax one Sunday. Listening to the music and comparing it to memory, I realised that the Pioneer was presenting the raw atmosphere and splashy acoustic of a small jazz band better than any of the

approach which has served so many designers so well. The £230 Marantz, visually and sonically, was by far the most unrefined of the players, showing up the price gap, but I also found the sound of it quite engrossing, having a rough and ready immediacy and charm which the more expensive players lost.

Both the £330 players, the Denon and, especially, the Yamaha are deliberately unobtrusive, and for that reason, conversely eye-catching. They both give a relaxed and informative sound, but can be faulted by those who prefer excitement in their music, which is where the Marantz scores over them.

So what's the outcome of this test? Well, for simple rankings of the players, the Denon and Yamaha players have to share the victor's podium, offering an easy and listenable description of the music, and the best

feel and finish of the batch.

Second place has to go jointly to the Marantz and the Philips, the Marantz giving a good all-round performance, but

the flexibility of an optical output. If you are looking for a player now that can be upgraded with a DAC in the future, it's worth paying the extra for the solidity and quality of the Yamaha or Denon, unless you feel that you really couldn't live with them in the meantime.

It is a pity that the Marantz's 'feet of clay' were so noticeable when compared to the Yamaha and Denon, although the main difference between them is really what kind of picture of the music you prefer, and personally I'd plump for the grit and raunch of the Marantz, rather than the accomplished roundness of the more expensive players.

So increasing the amount of money you spend doesn't guarantee you a better player. You have to get your hands on the product to feel the build of it and, most importantly, listen and work out whether you like its particular presentation before you buy. I hope our tests and views help you get the right one ●



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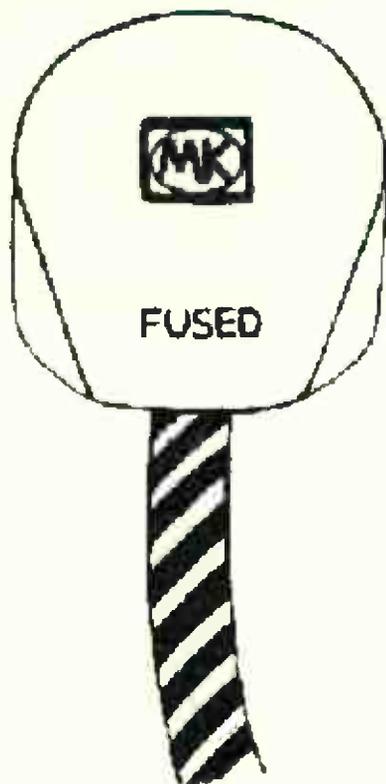
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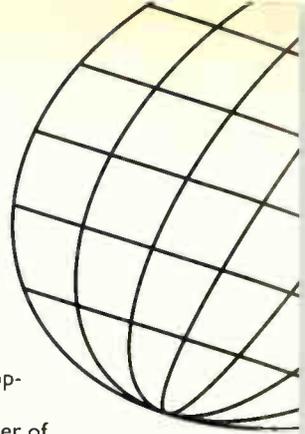
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World



ARE DCC AND MD INFECTIOUS?

Certain readers and scribes seem to have contracted acute digital fever, a disease concocted in the laboratories of the giant consumer manufacturing corporations, and set loose into the world.

I am referring to the particularly nasty DCC and MiniDisc strains of the virus. In true "emperor's clothes" tradition, we seem determined not to acknowledge the devastating effects of the evil PASC and ATRAC systems being thrust upon us by companies whose only purpose for developing such nonsense can be their desire for even bigger monopolies in the software market: i.e. Polygram, CBS etc. It most certainly is not a desire for technical excellence, or fidelity to the original musical performance.

Has it not occurred to any of the "experts" what a backwards step this technology represents, in purposely limiting the amount of information captured from the real time performance? Who the heck are Philips/Matsushita and Sony, to dictate which portions of the original sound they think I should or should not hear?

Actually, I, like many others, have particularly sensitive ears,

which readily identify details concerning absolute or relative phase, the natural acoustic environment, and a realistic (or otherwise) timbre of known musical instruments. Imagine a symphony being played in a concert hall, or a magnificent organ in a cathedral, or a brass orientated jazz band in a night club. These are all musical experiences rich in harmonic and ambient detail. You simply cannot exclude massive chunks of aural information, on the basis of amplitude and frequency masking, and remain faithful to the original.

Since any professional musician, recording engineer, five year old, or Alsatian dog knows this, so when is the hi-fi fraternity going to wake up to the fact? Analogue die hards are still grieving for the lost wave forms that CD technology inflicted, but at least Compact Disc tries to capture the original, and some small, dedicated recording companies, employing heavy over-sampling and state of the art electronics, do indeed provide interesting results.

With DCC and MiniDisc, we are doomed to listen to a synthetic caricature of music, which can, by definition, never replicate the subtleties of music which has inspired generations. It is surely ironic that in the nineties, many people, myself

included, would rather listen to original recordings made in the forties, fifties and sixties, than that available via certain contemporary technologies.

**Julian Ashbourn
Berkhamsted,
Herts.**

The hi-fi fraternity and many experts (said without perjorative connotations) have expressed concern over the notion of throwing away music that Philips/Sony/Matsushita decide we can't hear.

To be quite fair though, I have attended carefully run listening tests (staged by Decca Studios, just up the road from us) that did show that PASC does a very good job. Also, I have spoken to Gerry Wiertz, the chief

development engineer of Digital Compact Cassette and PASC, many times and I believe he - and Philips - genuinely are trying to produce a system that doesn't significantly degrade music. We have all been very sceptical that so much can be thrown away without audible degradation, but it can.

However, having said all that, the simple bottom line is that neither DCC nor MD seek to improve sound quality. Read carefully and you'll see that this has never been claimed, especially after the Perfect Sound Forever promise from Philips which, in their view, did them a lot of harm (when in the company of Philips engineers, never

Letter of

I read with great interest M. Liers' letter 'What's in a valve'. My Counterpoint 3.A.12 needed new tubes so I 'phoned the importer who told me that it was not cost effective for him to supply them, so I decided to 'phone a few dealers to ask what's the best tube. Easy? You would think so. One London specialist tube shop told me to buy Groove Tubes as they were not microphonic! Rubbish! All valves are microphonic.

After several 'phone calls and more conflicting advice. I decided to 'phone a couple of valve amplifier manufacturers. Audion recommended Sovtek but I could not find them. Tube Technology not only gave me sound advice but they supplied me with a set of Golden Dragons for only £20 (Thanks, Phill).

Anyway, tube buyer beware, dealers talk a lot of bullshit about valves. Yes they do sound different, so come on Noel, give us a test on different brands.

**Robert P. Jeapes
London.**

P.S. The Golden Dragons sound great and has anyone tried Pearl valve coolers? P.P.S. Anyone who pays £14.99 for a CD is a mug. Barry Paul Records of Leather Lane, London EC1 charges £10.99 each or two for £20.

We've heard the differences too, but tests will have to wait until we have amplifiers that can run any particular type optimally under test. Otherwise we'd be listening to the sound of a valve under strain and whilst I'm not averse to torturing the odd transistor or two, I reckon it's safer to leave valves alone! Using our own amplifiers, we could well listen to ECC83s, 5881s, 300Bs, etc and I see no reason why this shouldn't come about.

I strongly suspect that the particular sound of a valve largely determines the overall character of a valve amplifier, all other things being equal; it's

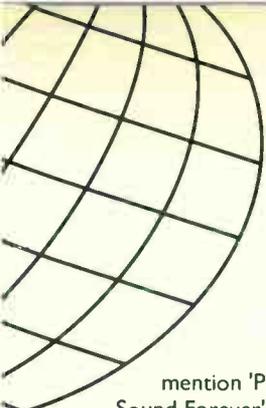
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mention 'Perfect Sound Forever', or 'Black Tulip' - dubbed by the UK Press Black Turnip).

Philips/Sony/Matsushita are in a race for the global cassette market and, in their view, sound quality plays a limited part in the appeal of such a medium. Small size/convenience are seen as most important, hence the perceived need for data compression. Sadly, the pro recording business wants it as well, to extend music storage capabilities.

One of the reasons I started speculating about the nature of future higher quality formats a few issues ago was to start the ball rolling on this subject. Current video disc systems could accept hours of FM modulated, or PCM

encoded music - both analogue formats. The great benefit of analogue, as we now all know, is that it avoids the unpleasant distortions of digital and - better - it can be continuously updated; digital cannot. Even if we choose a better digital system now - say 18-bit - there'll only be another upheaval in years to come when everybody wants something better (which they will!).

Why won't Philips/Sony/Matsushita produce a new, higher performance analogue system? The answer is both simple and prosaic - noise. In their view, hiss, clicks and pops would never be tolerated by today's CD-aware consumers. To avoid them means using error correction systems - and these demand digital coding.

And the reason Philips/Sony/Matsushita don't want to upgrade CD is because the marketing

people believe there's no money in this part of the market. I think there is, but they don't know how to make the right sort of product to attract it.

It could just be that with the new storage media becoming available (recordable CD or CD-E), or with true on-the-fly (real time) digital data compression/decompression, currently being talked about in the States, a variety of new formats may become available in the near future.

I am beginning to suspect that there might never again be a globally accepted, rigidly defined single system, like CD. Smaller, more imaginative companies prepared to cater for the true hi-fi market might well service this need in the future, since the big boys seem unable and unwilling to do so. Their priorities lie in mass production for global markets; they are simply not the right people to handle specialist manufacture any more. **NK**

TUTANKHAMUN'S TREASURES

I recently became a member of that largely low profile and secretive species, generically labelled "Competition Winners" (or, as the Anthropologists would have it "Freebious Ecstasious"). This was entirely due to the generosity (though other competition entrants might call it 'misjudgment') of the Hi-Fi World panel of judges.

Now, I am not a compulsive enterer of competitions, especially those that require a clever tie-break caption, and have never won anything before (though honesty demands that I admit to a winning the egg and spoon race at the Coronation Sports Day when I was a lad - and then only because I had to hold up my calf length navy-blue shorts and I was compelled to progress slowly and smoothly thus reaching the tape ahead of the more athletic competitors who had spent a good deal of the race chasing their papier-mache eggs around the course). I am, therefore, delighted that fate decided to deal me a decent hand when the prize was a pair

of Silver Night 300B amplifiers.

I have no recollection of what my response was on the telephone when I got the word, but I do remember afterwards performing a passable impression of an international footballer celebrating a hat-trick on his debut. This was, in retrospect, a little unfortunate given that I was at work at the time. Some days later a colleague approached with some trepidation (clearly the task had been delegated by an alarmed body of colleagues) and asked if I was feeling better as it was everyone's impression that I had been leaping about the workplace looking decidedly apoplectic and demanding that everyone share my joy in winning 'a pair of ants' in a competition.

It's a strange thing, but after the initial euphoria, I was beset by grave doubts. Could it have been a hoax. Nobody, except my wife (and she is surely too nice a person to play such a dastardly trick) knew about the competition.

Anyway, to cut a long story long, I am a very happy and grateful member of your vast readership. Our record collection has become a musical treasure. The only problem is, I have the impression that, like Howard Carter, I am glimpsing the treasures through a small hole and need a bigger hole (probably in my bank account) to really get amongst those treasures.

I shall end by offering my thanks to the magazine for substantially increasing my enjoyment of music.

**Peter Strickland
Burford,
Surrey.**

SETTLING THE SCORE

I have been compelled to put pen to paper over Richard Brice's recorded message in your August edition. Unless the listener has had some vocal/instrumental training, following a score is not as easy as Richard claims. For the non-musician, knowing that the music is in 3/4, meaning that you count 1,2,3 1,2,3... and that it sounds like a waltz is all well and good

Continued on page 45...

The Month

something that has been occupying my mind a lot whilst I've been developing K5881. It seems almost immune to component changes, but perhaps the anatomy of its circuits suggests it should be, unlike a solid state amplifier.

Let me explain. Between input and output there are just three capacitors and three resistors - and it's possible to get rid of the resistors! Solid state amps have myriads of passive components in the signal path. So valve amps are desperately minimalist, without trying.

Then there are just four active amplifying devices, the valves, plus a transformer, which if it is designed properly, is no great drawback, other than in cost and weight. A solid state amp has myriads of non-linear, distortion producing active devices hidden in every silicon chip, let alone the discrete ones on display. And the chips

have feedback around them, as well as the entire amplifier, so the differences between a valve amp and a transistor amp go very deep.

But with so little in it, of course, a valve amp will be sensitive to the characteristics of the valves in particular. K5881 is very stable in its character, even when output valves are randomly inserted and I believe the Russian Sovtek valves (from Billington Export, by the way) largely set the sound. This won't be so obvious on amps with poor output trannies, or poor components, but that's another story.

On the same front, the other day I asked our tranny manufacturer what length of wire he used in the mains transformer. "That's a new one - why do you want to know?" he asked suspiciously. "Cos I want you to cost it using solid silver wire" I said. The phone went dead. **NK**

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Harman Sun Shine

Harman Kardon let the sun shine on their LS 0300 loudspeakers.

Dominic Baker enjoys their brightness.

Harman's new LS 0300 loudspeakers look pretty conventional. They are two-way, reflex loaded, stand or bookshelf mounters, priced five pence below £200. With a black ash vinyl finish and a plain black grille, their appearance is hardly eye catching, but remove the covers and you will get a surprise. Beneath lies Audax's HT130F0 glass fibre bass/mid unit in all of its daffodil-yellow glory.

Glass fibre has the advantage of being very light, yet stiff, making it ideal for high performance drive units. Resting just above this colourful driver is a large soft fabric dome tweeter, also sourced from Audax.

Why did Harman choose to use Audax drivers? They have recently taken on the distributorship of these drive units, which are manufactured in France. The result is the first ever range of loudspeakers wearing the Harman/Kardon badge, designed in and aimed at the U.K. market. After a brief appearance at the Bristol hi-fi show in February they are now on sale.

I was expecting the LS 0300s to be a good, fast and crisp sounding little bookshelf

loudspeaker, so I got a bit of a surprise when I first listened to them. They produced a large, full bodied sound that would push outwards to fill all four corners of a room, not what you would expect for their size.

The LS 0300s have a firm but not particularly deep bass and have a tendency to thud rather than bounce along with abundant energy. I quickly found that they were best distanced by around 30-40cms from a rear wall; in this position they had the fastest and cleanest bass and steered away from sounding too soft and wooly. I also found that open frame stands such as HSB-1s helped a great deal with the bass: it became lighter,

but more tuneful with some spring in it.

On albums without any really low gut wrenching bass the Harmans followed bass lines well, pondering a little too long only when things became a little too complex or furious. However on tracks with low subsonics they fell behind, the low notes could have been coming from a

be sweet and free from any sharpness, but should also integrate well with the bass/mid driver. And indeed it does, the transition from fabric to fibre glass is performed very well with no obvious change in character audible. Although the treble was not hard or aggressive, it was a little too soft, almost dull in comparison to some.

However it is very smooth and gives a good sense of space to the music.

On to The The's 'Dusk' album which is a maze of voices and complex instrumentation: the LS 0300s coped very well. They accurately followed Matt Johnson's voice from speaker to speaker and in and out of the soundstage while holding the rest of the performance together in a commanding manner.

Overall the new LS 0300s are sweet and open through the mid and top, and have good bass

kick, even if it is not that deep. They don't give quite as much insight into the music or are quite as fast and detailed as the Heybrook Quartets, but then again they are nearly half the price. Sitting on open stands around a foot and half from the rear wall though, they are a thoroughly involving and enjoyable performer.

**Harman Kardon Loudspeaker
LS 0300 £200**
Harman Audio UK Ltd.
Unit 1B
Mill Street,
Slough SL2 5DD
Tel. 0753 576911



different room they were so delayed.

The mid was altogether more pleasing. The lightweight glass fibre cones of the '0300s have a crisp and uncoloured sound only held back by a little boxiness from the cabinet. Although focus was not as sharply etched as, say the Heybrook Quartets, the mid was clean and detailed, relaying the harmonies on the Lemon Trees album 'Open Book' with breadth and atmosphere. The only minor complaint in this area being a slight coarseness in the upper mid and a tendency for any slight sibilance to be exaggerated.

The tweeter on the '0300s is a large soft fabric dome unit, so not only should it

MEASURED PERFORMANCE

Harman Kardon's first loudspeakers use a fibreglass coned Audax bass/mid unit and a large (38mm) fabric dome tweeter. The bass/mid unit we know quite well from the drive unit group test we did in the last supplement. Measured on an open baffle to look at the characteristics of the drive unit alone we noticed that it started to break up above 4kHz or so. Ideally this driver should be rolled off early and the tweeter brought down to fill in the gap. A large diameter tweeter will be able to reach further down making this possible, so it appears that Harman have put a lot of thought into this loudspeaker.

The response plot of the LS 0300s shows bass and treble peaks and a raised plateau centred around 1kHz. The upper peak is probably responsible for the exaggerated sibilance I experienced on some tracks, but at the same time it will add a little sparkle to the top end. The bass rise will give the '0300s a big and solid sound with good kick behind it. Whether by design, or by accident, the raised plateau around 1kHz followed by a shallow dip up to 8kHz will give the '0300s a very

pleasant sound. The rise in the mid will push vocals forwards and give the 'speaker good projection, while any nasties in the drivers will be suppressed, or at least not exaggerated, where the ear is most sensitive, around 6-7kHz.

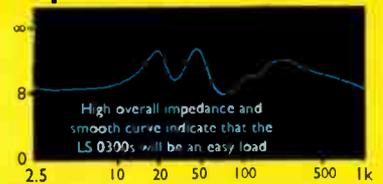
Even though the '0300s use lightweight glass fibre cones they only managed 87dB sensitivity at 1m for a nominal 1w input. This is above average and certainly good for their size; smaller loudspeakers usually trade off sensitivity against bass performance. The majority of the impedance curve sits above 8Ω which gives a high overall impedance of 12.9Ω. The curve itself is reasonably smooth and because it is above 8Ω the LS 0330s will not demand high current from the amplifier that they are partnered with.

Overall the Harman's first venture into loudspeakers has been a successful one. The '0330s are well engineered and use good, high quality drive units. A quality budget integrated amplifier rated at 30-40 watts or so should be more than capable of driving these loudspeakers. **DB**

Frequency Response



Impedance



LEGENDARY LOUDSPEAKERS

Our very own band of adventurers go merrily a - roving in search of

Philips Legend Loudspeakers

European countries - those on the other side of La Manche - insist that their loudspeakers must have accentuated bass and treble. But when two highly qualified and serious Philips loudspeaker engineers visited us some time ago from the Hasselt factory in Belgium, they said, "we have traditionally felt the need to add boosts to satisfy the European market, but now we are trying to make our speakers more like those from Britain". By this, he meant more accurate.

Philips' more expensive speakers are accurate, but the marketing department obviously had other ideas about the new Legends, for they have strong bass and treble peaks. At the £200 price point - £199.99 to be precise - they are quite serious in intent, even if their appearance in the company of a midi system in Philips literature suggests otherwise. Inevitably, they have subjective characteristics which make



them 'love 'em or hate 'em' products.

What struck me most about their presentation was the springiness with which they covered everything. It was not the happy, bouncy, feeling of a good-time rockin' box, but an artificial, almost plasticky, rebound from the bottom of the dynamic

range. These boxes will run a tight drum line on snares and similar drums, but for the really big guns, they just don't go low enough.

Most small boxes suffer this problem, but the Philips have a springboard quality to their dynamic floor, so that notes seem to rebound and quiver at the bottom end. The midband is tight and fast, but suffers from a mild quack with brass instruments, especially saxophone, which I find most irritating. At the top end, the notes tend towards the thin and shrill, and vocals, while treated well in the midband, are definitely unpleasant if you

listen to a lot of alto or soprano work. With instruments, tight drums come off best, bodhran and tabla being especially good, but all of the accompanying strings and brass on various CDs fared relatively poorly.

I had a surprise with the image

portrayed by these speakers, since their tone made me think that they should be shy and boxy. In fact they could produce a good soundstage with some amps, although this enhanced the 'spring' of the sound with the most successful case I found. A warmish amp, such as a Creek proved, for me, to be the best compromise, since the warmth cushioned their performance so that I could listen happily.

Having been shown the frequency response graphs which Noel had produced, I tried to improve the presentation by shifting the boxes around the room. With the speakers close to a rear wall, I found that the springboard on the bottom end changed to a drone, which did nothing for the speed or attack. At no time did I think that these speakers were particularly fast since, even with vocals, they had a tendency to smear when the pace became too much for them, and they are

far from vigorous in attack, the dissipation of the imagery diminishing this.

Moving the boxes further away from the wall only brought that bounce back with the sort of 'boing!' associated with the phrase "Time for bed, said Zebedee".

Noel suggested that I should try some acoustic damping (long haired wool) in the ports to improve performance. I did try this but found that, although it suppressed the bounce, it left the speakers with such a small amount of bass as to be not worth the trouble of listening.

It's a pity, I think, that I could not like these speakers more, since the design of them is somewhat out of the ordinary, and they are well built, to boot. The front panel is a solid chunk of stone-effect plastic, well and intricately moulded. It is an eye-catching design too, with a smooth transverse curve worked in, and an ovoid port around the tweeter giving it the

semblance of an eye looking back at you. Not to everyone's taste, but certainly different. That word describes these speakers through and through.

My problem with them, and it is purely a matter of personal opinion, is that they are designed to do everything which I like speakers not to do, but if you like a bouncy and bright presentation, these speakers are far from intrinsically poor and they might just suit.

Philips FB 720 Legends £199.99
Philips Consumer Electronics Ltd.
City House,
420 - 430 London Road,
Croydon,
Surrey,
CR9 3QR
Tel. 081 689 2166

MEASURED PERFORMANCE

Measurement showed the new Legends have strong bass and treble peaks. The tweeter peaks up by +3dB at 12kHz - quite enough to be audible. Down at the lower end of the frequency spectrum the bass peaks up by no less than +5dB at 125Hz, a degree of lift caused by strong bass resonance.

The treble peak will add brightness to the sound, a treble sting and emphasised sibilance. A bass peak results in one-note bass, and at 125Hz it isn't even deep bass with power behind it, so much as a rather obvious "boing, boing" sound. It's best to let final judgements rest upon perceived sound quality, but such peaks would certainly be audible and they will colour music; the Legend is not an accurate loudspeaker.

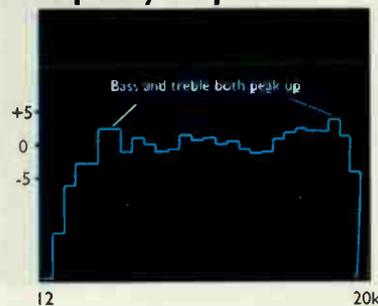
Curious about the engineering Philips might use in such a product, since they possess incredibly sophisticated research facilities, I 'reverse engineered' the Legends.

The basic components within its construction are of high quality. Ironically, stuffing the ports with fibrous cabinet damping material brought the bass peak right down, so this speaker works better as a sealed or 'infinite baffle' enclosure and Philips have not tuned it properly.

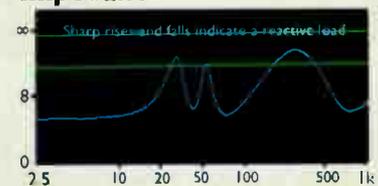
Rated at 6ohms nominal impedance by the IEC method which relates nominal to the minimum, we found Philips figure to be correct. However, overall impedance as an amplifier would see it measured 9Ω, which means that the speakers are an easy enough load. Producing 89.5dB of output for one watt input, the Legends are of high sensitivity, meaning they will go loud with few watts.

Philips' new Legend loudspeakers are built from good basic components, but they have been deliberately mistuned to produce a strongly tailored sound. As they stand, I doubt whether they would appeal to the majority of U.K. ears for they are inaccurate. **NK**

Frequency Response



Impedance



Tannoy Take II

Dominic Todd listens to Tannoy's new 607 II loudspeakers.

Not so long ago the £100 speaker market was absolutely cutthroat, with manufacturers having to make constant improvements for small profits. It now seems that at long last the press and retailers realise that good budget speakers do exist over £100.

An area where competition is still fierce, though, is at the crucial £200-£250 band. There is so much available at this price range that manufacturers have to move with the times if they ranges) but

the Sixes had unique styling. All speakers boosted hexagonal cabinets with plastic cappings top and bottom. Particularly eye-catching was the marble effect laminate top caps. The sixes also had some neat technical depending on model.

To answer some of the criticisms of the twenty-four mouths after the originals hit the shops. However, the changes represent more of a facelift than a complete revamp. All that's changed

ascetically is a change of finish for the top cap. Where it was once a distinctive marble effect, it's matured to a plain gloss black laminate. Look closer and you'll notice a gold anodised tweeter (although not as heavily anodised as say a Monitor Audio) and a new cone surround material. Internally the only change has been to use Tannoy OFC cable, although it looks pretty much like the old stuff to me. The eight inch moulded woofer, twin

rear ports, hard-wired crossover, internal bracing, "draw", bi-wiring pins and of course hexagonal cabinet remain as before.

The 607s should be stand mounted on stands of about 15 inches high. Tannoy make a dedicated stand which matches the hexagonal footprint of the speakers, but the pricing is a little steep at around £90.

However, other stand manufacturers, such as Apollo and Projekt, have spotted the niche and produce stands to fit the entire Six range at more reasonable prices. Because of the rear ports the Tannoys sounded best pulled at least a foot away from the wall and toed in towards the listener.

Unfortunately the sound doesn't quite live up to the looks. Speakers such as the Rogers LS2a2, Cyrus 780 and to a lesser extent B&W 610II's have taught us to expect more from a two hundred pound speaker than was once the case. Against competitors, the 607s have a number of sonic flaws. Despite the novel hexagonal cabinet the Tannoys don't image especially well. The sound tends to group around the speakers, causing confusion on more complex pieces of music. For a speaker of its size, bass extension was a little limited too. There certainly wasn't the quantity of bass that you'd get from the B&W 610s for example. To add salt to the wound, the bass wasn't terribly tuneful. On tracks such as, "Railroad worksong"- The Notting Hill Billies, the

lower frequencies weren't particularly detailed, and a single bass note often prevailed. At higher volumes the bass cone could also become unstuck causing distortion. No doubt the small woofer magnet has something to do with this. Simpler vocal music proved to be the

sounded pleasant enough, with good refinement from stringed instruments. Yet the soundstage was never quite convincing, and reproduction of piano was at best hollow and insubstantial. Larger orchestral pieces were portrayed with decent scale, although muddle set in early,

as soon as the piece became in the slightest bit complex. Other sonic flaws manifested themselves with orchestral music. Brass sounded rather constricted, and despite being refined as with the strings, lacked a certain zest associated with the breed. Woodwind could also sound rather "chesty" and veiled, as though a blanket had been thrown over the speaker.

Incidentally, the speakers were bi-wired throughout the listening test. Without bi-wiring the sound simply became more confused, and there wasn't such good definition between the mid and top range.

There's no doubt that the 607s offer a lot of speaker for the money. What's more they are one of the best looking speakers in their price range, even putting some speakers costing three times as much to shame. Tannoy can also be congratulated on their consistently high levels of build quality, and attention to detail unusual at this price. It's therefore a pity that the 607s don't live up to expectations sonically. They are easy enough to live with and won't provide serious compatibility problems, but against class leaders, and even cheaper models in the Six range, they are left trailing. The problem seems to be a prevailing blandness which sucks the life out of all types of music. It would appear that in Tannoy's quest for refinement, all the qualities that made the Planet range so good have been engineered out of the speaker ●



607s saving grace. The smooth treble characteristics, free from notable sibilance and graininess, combined reasonably seamlessly with the mid-range to provide a relaxed and easy going sound. But, the sound did tend to be rather two dimensional and could also smooth over detail which would be picked up by some speakers costing half as much.

The same was still very much the case with Classical music. Simpler Quartets

MEASURED PERFORMANCE

The new Tannoy 607IIs look identical to the mark Is. They share the same bass units and the unusual hexagonal box, but a new tweeter has been inserted along with a revised crossover.

The frequency response of the 607IIs is rather a ragged one. From the bass up to around 1.5kHz the response is very flat, but shortly after it takes a dive. This crevasse in the response is centred around 2.5-3kHz which suggests that there may be a problem where the tweeter meets the large polypropylene bass/mid unit. Again, further up the response there is another dip, this time less severe and luckily between 6-8kHz where the ear is most sensitive and any nasties need to be suppressed. However,

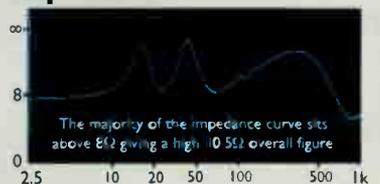
these chunks taken out of the high frequency response of the 607IIs don't leave much behind. And in addition the treble level is a touch below the rest of the response as it is, so I would expect a thin and slightly dull treble.

The 607IIs are quite sensitive, pumping out 88dB at 1m for a nominal 1w input, so they will go louder than most for the same position on the volume control. The majority of the impedance curve sits above 8Ω which gives an overall figure of 10.5Ω. The high impedance means that the 607IIs will not need much current to drive them. This combined with the above average sensitivity makes them an easy amplifier load, so transistor integrated amps of around 30watts should be fine. **DB**

Frequency Response



Impedance



providing that the music does sound like a waltz. Unfortunately, there are many pieces, such as Dukas' "Sorcerer's Apprentice", which you count in three that do not remotely sound like a waltz! Mr Average would need more than a theory book to read this score.

Score reading is made easier if the listener can aurally recognise instruments playing at any given time. They can then relate sounds to notes written on manuscript. However, I am sure that most non-musicians would struggle to tell the difference between the sound of a bassoon and french horn. Listeners to modern rock and pop music simply don't stand a chance. These scores are only an approximation of the recording. Most do not even split the music into the component instrumental parts. Any of the subtle detail the listener would hope to find via the score, has simply been edited out as an irrelevance!

I have taken the liberty of including some advice to someone attempting to follow a score for the first time.

1. Choose a slow movement of a conventionally notated string quartet as a starting point. Each instrument normally has a part independent of each other so should be relatively easy to follow.

2. Find out what rests look like and highlight long ones on the score. It is far easier to hear when an instrument is not playing than trying to follow one that is. You can then use rests as a reference point should you get lost.

3. Choose a theory book that explains words in a clear and concise manner.

4. Do not get discouraged if you initially find it hard.

You could gain a great deal of self satisfaction from successfully score reading. However, I know of an instant upgrade to any hi-fi, from a Dansette to an Ongaku based system, that doesn't involve reading music. Simply shut the curtains, switch off the light, switch on the hi-fi and close your eyes. You will suddenly be engulfed in a wealth of detail that you had never previously heard.

**Andy Plank
Fleetwood,
Lancs.**

That score reading is solely the province of musicians is the belief I had hoped to dispel in my original Recorded Message. I'm saddened that you are so

keen to sow the fast-germinating seeds of doubt in reader's minds that the opposite is the case. You obviously agree that score reading is indeed a worthwhile practice and perhaps you are concerned that I gave the impression that it was easy in my article. I hadn't intended to trivialise the task of following a score only to demonstrate that it is not impossibly difficult. However your comment concerning rock music is well taken. No musical snobbery was meant and I should have made the point that score-following is a useless "upgrade" to the solely rock-music listener.

As for your "shut out the light" upgrade, I have to say I totally disagree. The point I hoped to make was that most

with the new (to them) technology of valves may be more than a little confused.

Under normal operating conditions, the input signal to a valve is applied between the control grid (g1) and cathode and, for audio signals, virtually no grid current flows. So the basic operation of a valve as an amplifier is simply that a changing voltage on g1 produces a corresponding change in anode current. This relationship is defined by the 'mutual conductance' (or simply the 'slope') of the valve and has the units mA/V and the symbol gm.

It is important to realise that, when talking about valve characteristics, a valve does not produce an output voltage, only a change in anode current. To turn this current change into a



Valve advice: Mike Grieve writes

of us with busy lives and demanding careers find it difficult to concentrate on listening to music. If I turn the lights out when listening to music on a weekday evening, one of two things happens; 1) I start thinking about some aspect of my work, 2) I fall asleep. Following a score helps me overcome my brain's tendency towards worry and unconsciousness! I'm sure I'm not alone in this.

I disagree too that the use of graphic scores (for instance of Bussotti) will present problems for the untutored, indeed a lack of preconceptions may help. Certainly (as a musician) I find them incomprehensible! **RB**

VALVE BASICS

Please may I pick up a point in Martin Billington's response to a reader's letter on page 39 of your August 1993 issue, where he refers to the 'current gain' and 'voltage gain' of valves. Unfortunately, these two concepts - as applied to valves - are meaningless and readers who are trying to get to grips

voltage change, an anode load is typically used and this can include a resistance, a choke, a transformer primary or even another valve. Thus a valve cannot have a current gain and can only have a voltage gain when in a given circuit.

So far as valve matching is concerned, the way we used to do it 'in the old days' was to select two valves which had well-matched anode currents with given voltages on the control grid and anode (and screen grid if a tetrode or a pentode). For an ECC88 triode, for example, with 250V on the anode and -1.25V on the control grid, we would be looking for an anode current of about 12.5mA and this (we reckoned) also ensured the slope was about right for most purposes. If we could find two EC88s, each giving about 12.5mA, then these gave us our matched pair. In the same way, a double triode could be selected where both triode sections were matched.

**Mike Grieve
Lorton,
Cumbria.**

SPELLING AND PUNCTUATION

My boyfriend regularly groans at basic spelling and punctuation mistakes in Hi-Fi magazines. Although he admits that yours is one of the better ones, he did let out a plaintive howl at the inexplicable use of an apostrophe in the caption "Personal Stereo's for Summer" (p. 65 July edition). He also noted (crossly) that the "Complete Audio Visual System" advertised as the prize for the competition did not, for some bizarre reason, actually go so far as to include a television set - which is why we did not enter it, since we don't already have one.

PLEASE save me from yet another ear bashing by being a bit more accurate in future. Alternatively, send me a television and I'll trade in the boyfriend!

**Miss S. Leitch
Southampton.**

It annoys your boyfriend - how do you think we feel? After reading the 53,000 words or so, every issue, three or four times over looking for mistakes, be they spelling or punctuation, but mostly 'mechanicals' like typing transpositions, we still manage to miss the occasional obvious error. Being a small, independent magazine, three editorial staff write, commission, plan, sub, edit, etc every article you read. Trying to sub edit a complicated article while the phones, doorbell and fax machine simultaneously squeal is not easy and can become very frustrating.

When you are at home relaxing and flicking through the pages of Hi-Fi World it is all too easy to spot errors. We do it ourselves. I see articles in the magazine when they return from the printers with mistakes that we all missed several times over during the rush imposed by tight schedules.

And bear in mind that we are also very concerned to ensure the validity of our content as well, which embraces the technology, measurements and subjective quality of what we review, as much as the mechanical correctness of the typography. It would be little use achieving perfect English if what we were saying was rubbish.

Finally we did not include a television in the Audio Visual Competition Prize for two reasons;

1. we only offer prizes that we have reviewed and liked and,
2. neither Kenwood or

Continued on page 47...

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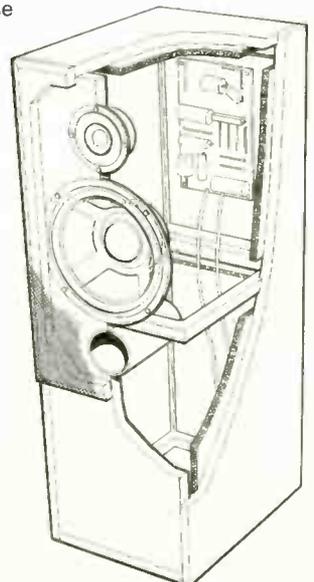


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Telephone credit card orders welcome



...continued from page 45

Celestion manufacture televisions so one was not available.

If you had entered and won the competition you could have hired a TV for around £15 a month, surely good value for a full AV system. **DB**

STATESIDE SUBSCRIBES

Congratulations on your second year! I've just finished reading through the nostalgia of Mr. Keywood's musings regarding the dawn of your excellent magazine.

It was sometime in August of 1991 when I visited Britain for the first time. As soon as I got off the plane at Gatwick I checked out the news stands for Hi-Fi mags. After going through the "mainstream" British publications I noticed this obscure rag called Hi-Fi World. Going through the pages, I quickly realized your open minded approach and recognition of the joys and virtues of listening through thermionic devices and vintage gear.

The first opportunity I had to go around London, I searched for the subway line that would take me to Maida Vale. I almost got lost because your place was really at an obscure corner. Anyway Alan Sircom greeted me at the door and I inquired about the availability of back issues. I purchased all that was available and Akila signed me for a subscription. I did have trouble getting issues in Manila, but I eagerly awaited each issue.

The first thing I did after getting out of JFK airport last October was to have my latest issue of Hi-Fi World. I also would like your readers to be aware of a new publication here in the United States called Sound Practices. It offers fresh "new-old" insights on horns, single-ended triode operation, DIY and experimentation is highly encouraged. Highly recommended reading for valve and vintage audio lovers. Further information can be obtained through this address.

Sound Practices
Joe Roberts, editor
Box 19302
Alexandria, VA
USA 22320

Thank you for your attention! By the way soon, I will be signed up for a US subscription.

Joseph Esmilla
MD,
USA.

THE FUTURE OF DIGITAL

Having recently read Noel

Keywood's Kaleidoscope article on the future of digital audio and Philip's announcement that eighteen-bit coding is to be introduced to DCC, it would seem that now is an appropriate time to investigate further these new developments, possibly by means of an article.

I have a number of questions concerning improved digital specifications, especially in relation to compact disc. Firstly, is 24-bit coding ideal and are there any real benefits to be gained by increasing the sampling frequency to 120kHz? I understand CD has several channels, one for audio and at least another for video encoding, so would it be possible to use both channels for storing first audio code thereby offering the opportunity for an improved format without having to wait for developments in 'blue laser' technology?

Furthermore, can existing domestic digital / analogue converters handle higher bit and sampling rates? I understand that 18 and 20 bit systems already exist in the professional area of recording.

As an example, having already been very impressed with the Pink Triangle Da Capo at the recent Bristol Hi-Fi show, I am left wondering whether it is capable of receiving a potential 24 bit 120kHz digital signal if fitted with an appropriate filter and delta-sigma chip?

The overall question is therefore what technological



Pink Triangle's Da Capo - ready for 24 bit?

hurdles have to be overcome to make these ideas a reality, if they are not feasible at the moment?

I would also like to add to the format debate that we can no longer think in terms of just Hi-Fi but also video and computers as these are now very much part of the 'home entertainment' industry which was not the case fifteen years ago, and so a new format has much greater competition. This is now reflected in the main retail 'record' shops.

Robert W. Fraser
London.

TONY GRIFFITHS REPLIES

Is 24Bit Coding Ideal?

In a linear system properly instrumented, the number of bits relate to the signal to noise ratio that is achievable. Since 24 bits give a range greater than the audible dynamic range in a good listening situation, it is doubtful that any benefit for the listener is gained by coding to such a great accuracy even if it were possible. Once the noise is inaudible making it even quieter seems to offer no benefit. For the professional, an increased electrical performance is useful for post production reasons so that the eventual programme has a high specification and therefore the initial coding required depends on the process from recording to listener.

Increase sampling to 120kHz?

The performance of an A/D convertor is limited by component and design performance. If a design is used to extend the frequency response upwards then penalties will be paid in some other area such as signal to noise ratio. Spending effort on reproducing inaudible components at the expense of performance over the audible range does not seem a sensible way to optimise A/D conversion.

Even if there were evidence that higher frequencies were

needed (and I don't believe that at present) the penalty paid for what could only be the very smallest benefit

would be very considerable to the performance in the audible range.

The CD

The CD does not have a video channel. There is a low rate data capability which can provide graphics etc. but the capacity available is insignificant compared to what is required for digital audio. Any change to the present 16 bit standard would really require a fresh approach and almost certainly a different disc standard. 16 bit

performance including noise shaped dither gives a S/N ratio at the limit of what is audible and therefore there would seem no need for such an "improved" standard.

**Tony Griffiths
General Manager,
Decca Recording Centre.**

Some of the assumptions upon which coding systems are devised are misleadingly in my view. Look at the reasoning behind 16-bit. It offers, in theory, 96dB dynamic range, which seems more than enough. But there are problems here. A 16-bit digital signal - 60dB down is, for hi-fi purposes, intolerably distorted, suffering 1% or so of extremely coarse sounding digital distortion. It's commonly said that the distortion is, in this case, -40dB below the signal, or at -100dB, and it is therefore inaudible - but it isn't! It matters not that the distortion itself is low, only that the signal sounds distorted - which it palpably does.

So in practice, a 16-bit system has around 60dB useable range, which is simply not enough. In our listening room, which has 45dB background noise (Central London) we can hit 110dB peaks, meaning a clean 65dB minimum is needed; others will need more.

Matters become even more fraught when recording, because introducing headroom for peaks reduces the range even more - to 50dB or so. When making voice tapes for radio not long ago I had to abandon DAT and go to cassette (Nakamichi ZX-9 with metal tape) because the analogue system was so much better. It had less hiss and a clearer sound.

It is agreed amongst hi-fi engineers with experience in digital audio that 16-bit, all that 1970s technology was capable of, is inadequate for high quality music reproduction. We need an 18, or to be safe, 20 bit system to get enough dynamic range - and we also need a higher sampling rate to be able to use less critical filters above 20kHz; a 60-80kHz rate should be enough.

Noise will not become more audible, because whilst a wideband noise measuring instrument will read a higher voltage, the human ear will not discern it, hearing mainly that level which exists around 7kHz. It will, however, hear other problems associated with high order filtering at 21kHz. **NK**

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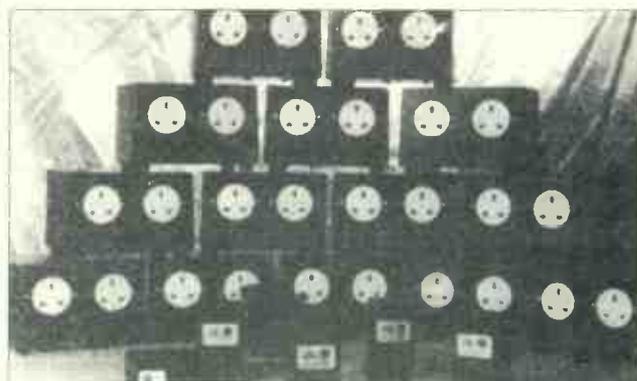
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Cartridges by Audio Technica, Koetsu, Kiseki, LYRA, Micro Benz, Decca and Goldring.

Speakers by ProAc, Acoustat, Sound LAB, Dahlquist, Ruark, TDL, Audionote (Snell), Townshend, Diamond Acoustics, JPW and Spica.

Headphones by Stax.

Cables by Qed, Supra, Straightwire, Kimber Audionote, Vecteur and Cogan Hall.

Stands by Target, Koudos Foundation and Huygans.

Home Demonstrations a pleasure



Goldring Elektra

Noel Keywood assesses Goldring's latest offering, the £24.99 'Elektra' budget cartridge

The Elektra sits unlovely at the bottom end of Goldring's range, something of an odd man out. Goldring these days have a superb range of cartridges made at their own factory at Bury St Edmunds, England. I was surprised to see that the budget Elektra is made in Japan and no attempt has been made to harmonise its appearance with the models above it.

Whereas the well performing 1000 Series range of cartridges have a snout-like black Potan body into which slides a stylus assembly, the Elektra comes with a square, bright finish aluminium body and a red stylus carrier. It looks pretty standard and workmanlike as budget cartridges go, which in truth it is.

The Elektra tracks at Goldring's preferred downforce of 1.7gms. Consequently, it will suit budget tonearms, since there's enough downforce to counteract sticky or erratic arm bearings. Compliance has been kept low, which allows the unit to cope with warped records, even in a heavy arm. So Goldring have made this unit sturdy to cope with difficult conditions. It will match heavy arms, cope with stiff-ish arm bearings and ride warped records.

To help high frequency tracking, the

stylus has not been mounted on a rondel. The trade off is that there will be greater sensitivity to dust and fluff, the Elektra won't plough through depths of grunge, even though it's durable in other important areas. For the low-ish compliance used tracking force could well be higher, but Goldring have fitted an elliptical stylus and this imposes an upper limit of 2g maximum.

I mounted the Elektra in a Rega RB300 arm, working on a He-phon TT2 turntable. It was no trouble to fit, being absolutely standard in dimensions and weight. It has a soft-ish presentation on vocals, with a certain amount of 'fuzziness' around the image, as it were, due to the upper mid-range droop and the stylus. There wasn't great insight in the treble regions, but not did it spit on solans. I found the closely tracked and normally loose acoustic guitar strings and details on Teaser and the Precat were smoothed over, which was disappointing. But this is a budget cartridge and loss of treble detail, due to poor tip profiling, is only to be expected to some degree. The loss on my sample was quite great; this cartridge does not possess much weight into a performance.

Lower down in the audio range the

Elektra gave tight, bouncy bass that fairly sped along. It doesn't willow, or sound soft and flabby. There was plenty of attack with drums; the powerful accompaniment John Bonham (you can tell I was trawling through my oldies) contributed to Led Zep, was very well conveyed by the Elektra. It isn't uncommon for cartridges to smother over low frequency dynamics, but not this one. It does not, however, seem to reproduce really deep bass.

I heard the occasional shakiness and coarseness on peaks, as the Elektra became unsettled and started to mistrack a little, but it wasn't too often. As expected, it was drums and low frequency events that unsettled it. A little more tracking force wouldn't go amiss with its low compliance, 2g might well be a little better.

The Elektra is a competent budget cartridge free from obvious weaknesses. It doesn't offer much insight, but it does avoid all sorts of other problems associated with the breed, such as treble coarseness and screech, poor tracking and sloppy bass. It's a good buy for anyone wanting an inexpensive cartridge to keep their record deck revolving and those old LPs in use. ●

MEASURED PERFORMANCE

Traditionally budget cartridges like the Elektra have been equipped with a diamond stylus bonded to a small shank, known as a rondel. It helps prevent the stylus becoming clogged with fluff, but adversely affects tracking at high frequencies by adding mass at the stylus tip. Although the Elektra is simple and sourced from Japan, doubtless for low cost, it has a 'nude' diamond tip, one without a rondel. Tracking was good in the midband as a result, 20cms/sec being cleared with just a murmur; even top cartridges rarely get past 23cms/sec or so. Down at low frequencies low-ish compliance in the stylus cantilever hinge made its presence known by limiting tracking ability a little, at least when compared to the best. All the same, the Elektra showed it could stay in the groove well, even under arduous conditions, tracking at its recommended down force of 1.7gms.

Low-ish compliance put arm resonance in a Rega RB300 right up at 15Hz, meaning the cartridge rides warp well. Our frequency response plot shows this phenomenon as a

peak at far left of the trace. Generator losses start to take effect above 2kHz, as usual with moving magnet cartridges, as coil impedance approaches load impedance (47k). The usual upper midrange droop results, in this case measuring a not-too-great -1.5dB up around 8kHz. Tip mass resonance at 16kHz or so brings treble up in a peak, visible at far right in the response analysis. All this should result in the usual slightly warm sound so many cartridges give, with some slight treble sharpness.

The good square wave response of the cartridge further confirms flat frequency response, as well as showing good cantilever hinge damping and transient control.

A high vertical tracking angle of 26degrees (quoted by Goldring and confirmed by our measurements) results in a second harmonic distortion content of 3% on vertical modulation, but laterally the figure was a low 0.65%, again second harmonic. As cartridges go, these are respectable figures.

Output was a healthy 6mV at 5cms/sec rms, the channels being well balanced. **NK**

TEST RESULTS

Frequency response	20Hz-20kHz
Separation	22dB
Distortion	1.8%
Output	6mV
Tracking	
400Hz lat./vert.	63µm/45µm
1kHz	18cms/sec
Vert. Tracking Angle	26degs.
Tracking force	1.7g
Weight	4.2g

Frequency Response



RADIANT RADFORD

Dominic Baker warms to the sight and sound of a glowing vintage valve amplifier, the Radford STA15.

Vintage equipment is normally regarded as the realm of hi-fi boffs who hang around second hand junk shops in their duffle coats looking for anything with valves in it. The image may not be inaccurate, but they aren't as daft as they look. Whilst so many are paying large sums of money for the latest killer transistor amplifier, they are paying thirty quid for a dusty old valve amp that offers a musical and enjoyable sound.

One they aren't likely to encounter though is the Radford STA15. It remains a sought after rarity, unlikely to pop up in any car boot or jumble sale. This workmanlike-looking amplifier was the result of a basic circuit which Arthur Radford designed to give the lowest distortion possible with feedback disconnected.

Even though it was designed for low distortion Radford decided to reduce distortion further. The more feedback applied, the lower the distortion becomes in an amplifier, but the tendency for the amplifier to oscillate increases, so Radford applied as much feedback as possible whilst retaining a good margin of stability. The result was a stable, low distortion, high quality circuit which Radford used as the basic building block for a range of amplifiers.

In 1965 Radford had a range of four

valve power amplifiers, all of which used this same basic circuit configuration. The circuit used an EF86 high gain pentode for the input stage followed by a 6U8 pentode/triode used as a phase splitter and driver for the two EL34 push-pull output tubes. This stable and rugged circuit

that GT Audio have bright chrome plated the two top plates that the valves stand on (the originals were dull zinc or cadmium) and replaced the phono sockets with high grade gold plated alternatives.

These small modifications enhance the visual appeal of the amplifier, but do not affect its performance. However, remove the bottom plate and you will reveal hours of careful restoration work. To say that it looks as good as new would be an understatement, any

components that had drifted out of tolerance have been replaced with top quality military spec.

alternatives and the coupling capacitors replaced with modern polypropylene types. All of the internal wiring has been replaced and meticulously re-routed. The restored Radford appears to be more a piece of art than electronics.

The cost of this kind of restoration job, not only because of the components used, but the number of hours it takes to complete such a job, is beyond the reach of most. Because of this, GT Audio supply restoration kits which are available in stages. A basic kit would just contain the

components that are likely to have gone out of tolerance and need replacing to get the amplifier performing to original spec. A full restoration kit contains everything needed to restore and improve the amplifier to the spec. of the one we were



was used in the STA15 to provide 15watts per channel. The amplifier was made up from two monoblock MA15s on one chassis, and the same basic circuit was also run at a higher supply voltage and with the output valves operating in fixed bias mode to provide the STA25 and

MA25 25watt monoblocks.

The Radford STA15 we borrowed for review was loaned to us by GT Audio who specialise in restoring and repairing vintage hi-fi equipment. It is basically original, the only visual difference being

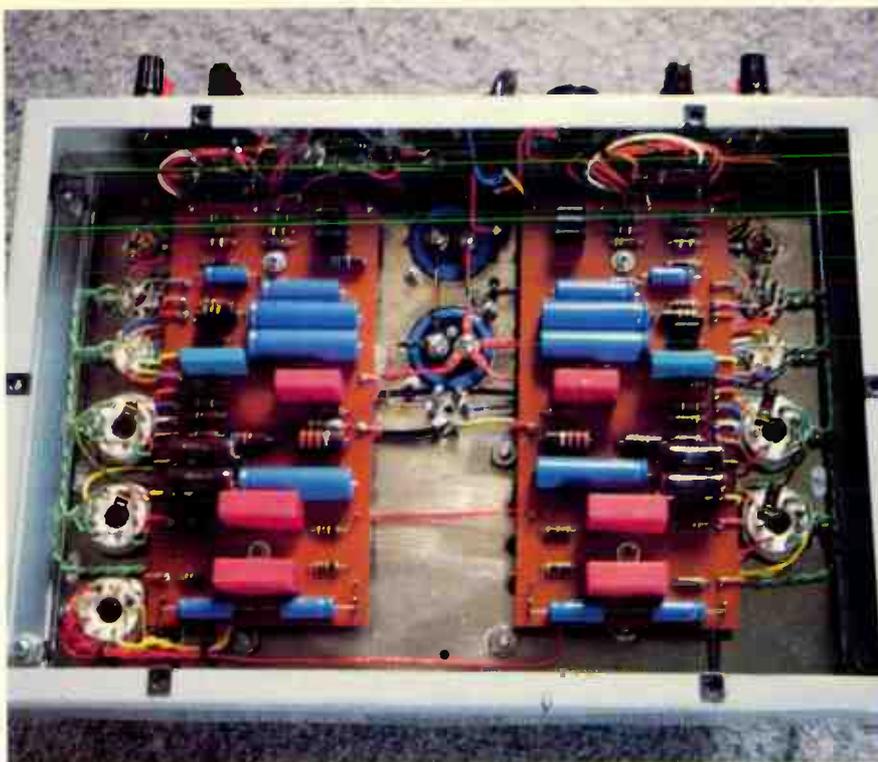
"The STA15 was fast and coherent, with plenty of energy and a superbly open and detailed midrange."

loaned for review. These restoration packs are quite cheap to buy and require little experience as it is basically just a job of removing the old and replacing with new, but beware, there is more than an evenings work involved if you want your amplifier to perform like this one.

The restored STA15 works like new. The impedance selector and power switches had a positive action and there were no clicks or buzzes on turn on. It sounds like a modern amplifier too and would certainly give many new valve power amplifiers a good run for their money. When the words "vintage audio" are mentioned you think of scruffy old valve amplifiers and a crackly, dull or distorted sound. This is a misconception and is certainly not a fair picture as regards much vintage equipment. Once restored, in most cases, vintage equipment is every bit as good as its newer alternatives and in some cases far better.

The Radford STA15 has a large, sweet, full bodied sound that is uncommon in modern amplifiers. It also has a good amount of bass drive and kick for a 15watt amplifier, which was a pleasant surprise. I used our own DIY High Definition loudspeaker for the majority of my listening, because it presents a very easy load to an amplifier, but to check that it could handle difficult loads I also tried a pair of Quad ESL63s.

With our loudspeaker the STA15 was fast and coherent, with plenty of energy and a superbly open and detailed midrange that leapt out of the box. The treble was clearly focused and clean, free from sibilance or any other unwanted colourations and the bass tuneful and controlled. With the Quads it lost a little speed and precision, but still retained a



spacious and very musical presentation.

I have been using GT Audio's restored STA15 for a couple of months now with a variety of sources and music and not once has it disappointed. When the music is dynamic the STA15 is too, when the music is subtle and delicate it responds giving a performance the air and atmosphere it deserves. The STA15 is a natural and musical amplifier that will never fail to please in a good system, which is quite a remarkable feat considering that it is nearly 30years old. It is a great tribute to Arthur Radford that the basic circuit has lasted as long as the

beautifully engineered chassis, showing that it was truly built to last in a way that only Quad, Leak, Garrard and a few others can match.

If you have an old Radford amplifier sitting in the attic, or fancy a change from the black box audio of today, quality vintage equipment such as this does offer a serious alternative. In most cases hours of careful work are needed, but it is well worth the time, money and effort for a sound that is sweet, full bodied and musical, let alone the pride and satisfaction of bringing a piece of audio history back into life, working in the nineties ●

MEASURED PERFORMANCE

Rated by the factory at 15watts per channel, the STA15 - always a highly regarded unit, even in its day - actually produces 18watts. I was happy to see a good, consistent performance between channels on our rebuilt sample, since unrestored valve amplifiers commonly suffer a host of problems due to age, usually reduced power, early distortion and uneven performance between the channels. This sample was squeaky clean in its output, showing that the transformers were in good condition even though, I'm told, transformers can deteriorate with age.

The low distortion figures claimed by Radford were met under test. In the midband, just 0.02% of second harmonic distortion existed, rising to 0.1% at frequency extremes. The unit could manage 0.1% in the midband at full output, like the Mullard 5.20 of the same period. Distortion rises at frequency extremes though, as usual with valve amplifiers, but this actually affects sound quality little, since it colours only peaks. So the STA15 is a low

distortion amplifier, as claimed.

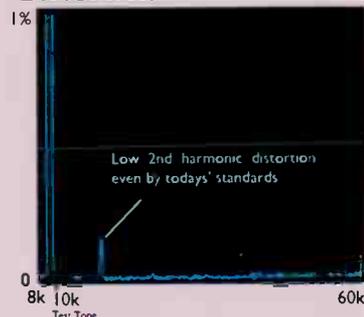
No attempt has been made to limit subsonic amplification, which in the days of record warps I believe was unwise, since output transformers core saturate (magnetic overload) at very low inputs as frequency decreases. It does give the STA15 a wide measured frequency response though - 5Hz-25kHz.

Channel separation was good at 66dB and noise reasonably low at -96dB, in light of a medium sensitivity of 450mV input for full output. I was interested in hum level, which needs to be 1mV or less. The Radford reached down to 0.8mV on one channel, but no better than 2mV on the other - a good if not exceptional performance.

Even by modern standards the STA15 measures well. Arthur Radford built his products meticulously and was not afraid to use complex and detailed metalwork, to which was applied a high standard of finish. The STA15 showed this to good effect - it looks superb alongside modern, featureless black boxes. **NK**

Power	18watts
Frequency response	5Hz-25kHz
Separation	66dB
Noise	-96dB
Distortion	0.02%
Sensitivity	450mV

Distortion



Little distortion at 0.02%

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We've just come back exhausted from running a stand and - this year - a room as well at the Penta Hi-Fi Show. And the news is good. In spite of Penta being overshadowed this year by Live 93, due to be held in Olympia just weeks later, we were fairly mobbed by visitors and readers.

Recession? Business was up by around 30% on our stand. Declining interest in hi-fi? Our room was packed all day every day with people keen on building their own amplifiers or loudspeakers.

The final bit of good news came from W.H.Smiths in the form of a June'92-June'93 sales analysis of Britain's hi-fi magazines: Hi-Fi World is the only one with a steadily rising circulation, up by around 24% over the year. All the other magazines are in steady decline, as they have been since the mid-seventies.

That's why I started Hi-Fi World in 1991. I was convinced that enthusiasts were being poorly catered for - or even shunned - by the magazines and large sectors of the industry.

The magazines are faced with a dilemma of the industry's own making. Too many manufacturers and their advertising agencies link advertising placement with editorial coverage. This fosters the 'commercial' outlook in articles that turns so many readers off and loses the magazines sales. By 'commercial' I mean excessive concentration on new product coverage and reviews, at the expense of a broader balance. Non-commercial articles are those that don't sell things on behalf of the industry, like Leak Troughline reviews and Garrard 401 features. We get swamped by interest in these, yet they are anathema to many in the hi-fi industry and, as a result, commonly criticised or sneered at.

Many manufacturers glibly see reviews as free promotion, a disastrously narrow and - in the long term - destructive view. I have personally had two major British manufacturers shouting down the telephone at me, demanding reviews as and when they see fit, always

with the implication that they should be favourable. Being what I am, I discussed their ancestry with them and suggested they go elsewhere to find such co-operation. They did - and they have.

Magazines are for their readers. Both the industry and the other publishers must realise, before it is too late, that to produce a magazine people want to read requires far more effort and appreciation of what is needed than is currently being shown. In my view it has always been the case that publishers have displayed scant regard for the editorial value of their magazines compared to their appeal to advertisers.

In spite of circulations falling from around 45,000 in the 70's to 20,000 now, I can still see the same publishing directives being applied. During the summer, industry 'wisdom' has it that

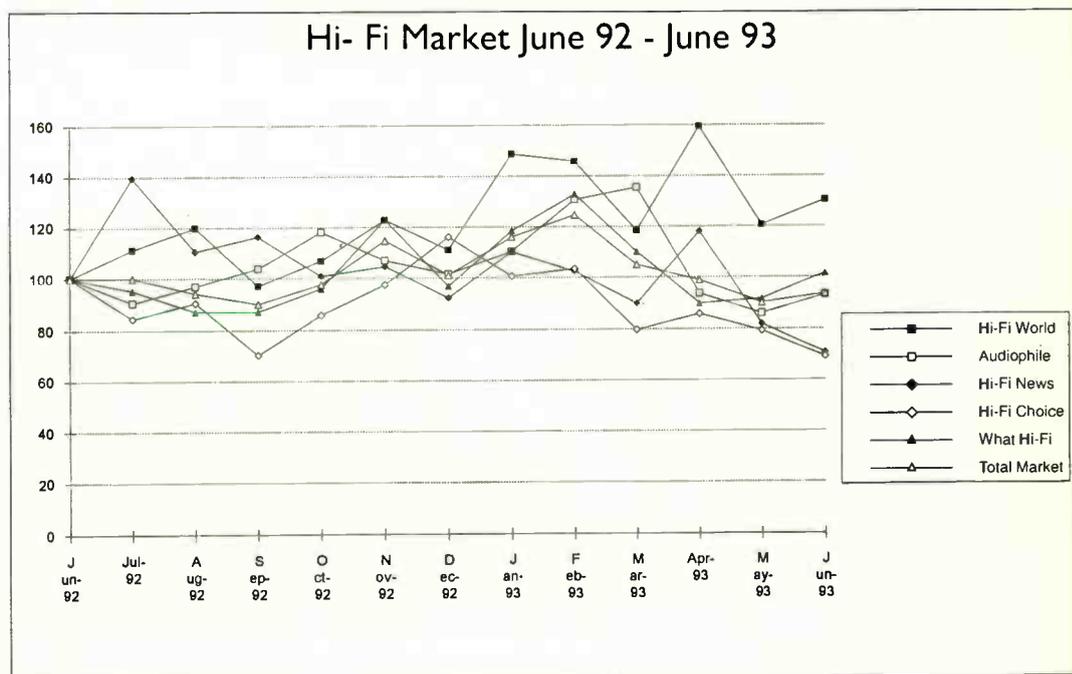


total and full extent of their logic.

What nobody appreciates is that DIYers are true, dyed-in-the-wool enthusiasts who, when they build a new pair of 'speakers, will go out and buy a better amplifier and CD player to match. They are not the ones who buy a budget midi-system for £600 at Rumbelows, believing it's a 'hi-fi' and then spend no more for the next five years.

That the industry - especially the magazines - should have shunned DIY for the last decade or two in Britain is, quite frankly, staggering. Not only is this a

Reflections from Noel Keyword kaleidoscope



pages should be cut back - and they were this summer. One magazine dropped to just 98 pages, another to 120, both lower than Hi-Fi World which I set at 130 minimum to offer good, steady, reliable value for our readers. I don't associate with the notion of reducing print costs in the summer to compensate for any fall off in advertising, because this deprives readers of the very thing they pay their money for - a good read.

We also decided to ignore

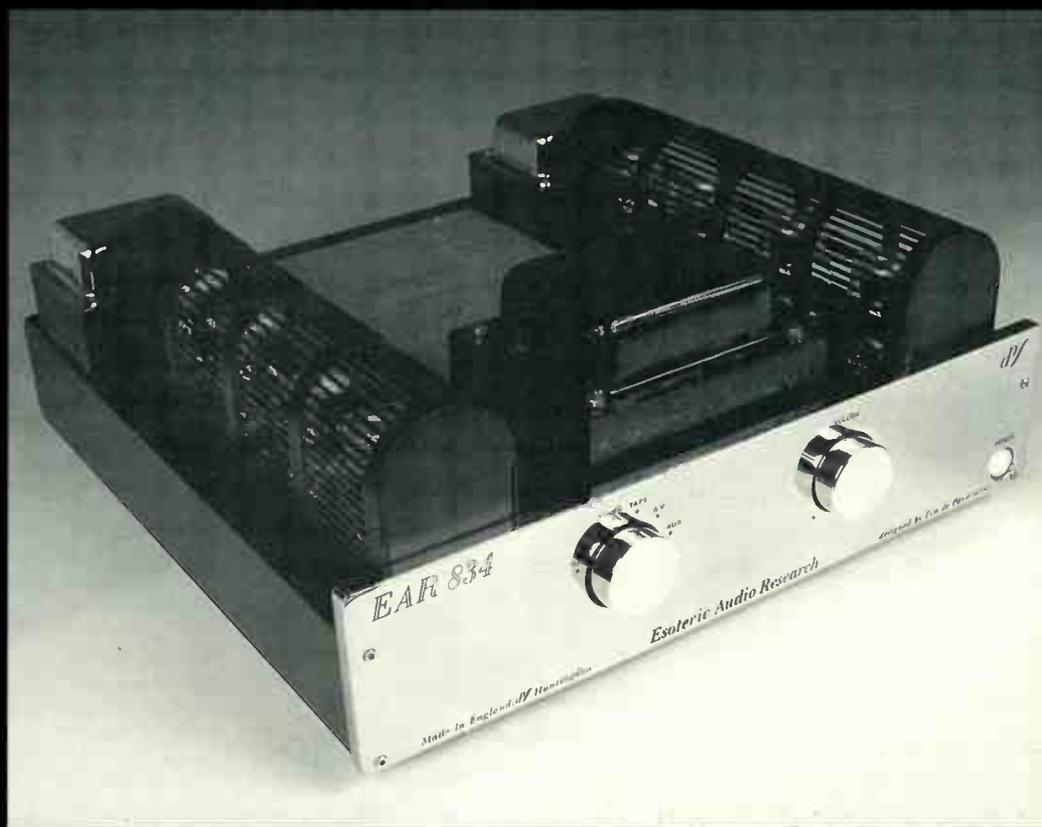
industry wisdom on 'promotions' and continued to offer our DIY Supplements through the summer. In truth of course, these Supplements are not a 'promotion' but a regular feature, provided because of their enormous popularity with our readers. Yet many in the industry detest DIY - our Supplements included. They reason that for every person who builds something, a sale is lost - and that's bread taken from their mouths. That is the sum

cynical attempted manipulation of the market, but a mindless and needlessly destructive influence on a thoroughly enjoyable and educational leisure/hobby industry.

I have to say that in Britain, we have got it WRONG in publishing, in retailing and often in manufacturing and we are paying the price.

Continued on page 61...

EAR



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Eric Braithwaite, *Hi-Fi World*, February 1993

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Last month I described the way in which two loudspeakers create a stereo illusion. If you read it, you'll (hopefully) remember that the illusion is created by eliciting within the mind of the listener two simultaneous and coexistent stereo images; a "high-frequency intensity derived image" and a "low-frequency, delay-derived image".

The brain, when it experiences a stereo recording, receives signals from the ears which are very similar to those it expects to hear when it listens to real instruments in real space. But only very similar because conventional two loudspeaker stereo ('drawing-room' stereo) cannot create a perfect illusion, the problem being that the two simultaneous images are not in exact register. In other words, the high frequency components of each instrument or voice emanate from one place within the stereo image and the low frequency components emanate from another place. The result, to use a visual analogy, is a slight 'smearing' or 'blurring' of the stereo picture.

SOLUTIONS

Many researchers have endeavoured to find a solution to this effect. It may seem odd that this drawback, which has been known about since the earliest days of stereophonic research, has yet to be solved. The reason is that, whilst it is easy enough to bring about changes in stereo image quality, it is difficult to achieve without incurring penalties of colouration, distortion and deterioration of transient response.

Sadly, in the absence of a practical solution and due to the fact that the distortion is not severe, the belief has grown up that 'drawing-room stereo' is capable of perfect results. This is most certainly not true.

In 1931, a young engineer at EMI's research laboratory wrote a paper entitled, "Improvements in and relating to sound recording and sound reproduction systems". Even today, this

patent is breathtaking in its vision and engineering scope. In it its author, Alan Blumlein, describes a two channel 'stereo' recording system and its possible application in the production of gramophone records and film soundtracks. It sounds tame today, but bear in mind this application was written a couple of years after the first 'talking picture'!

Blumlein described an intensity controlled two channel stereo signal used to produce a convincing wideband stereophonic illusion. He appreciated too

that the system was not perfect. His remedy involved matrixing the left and right stereo signals into sum and difference signals (in exactly the same way it is done today for stereo radio transmissions) and inserting in the difference channel a filter of special and unique characteristics before matrixing back to the normal left and right signals.

Sadly, there Blumlein's work stopped. It was soon whisked away on secret radar work. He was during trials of a radar system that the plane in which he was flying crashed and he was killed. It was only after the war that the EMI team working on a practical stereo system implemented his serial filter known as the 'Shuffler' circuit.

Unfortunately, this circuit was found to introduce distortion and tonal colouring and was eventually abandoned.

Blumlein's theoretical work was correct, it was only the practical implementation of the 'Shuffler' that was flawed. More modern and sophisticated derivatives of the 'Shuffler' have appeared throughout the years. Others, like the stereophonics researcher Edeko, have taken a more unusual approach to solving the 'blurring' problem. It is a fundamental



vinyl and CD. It gave me a unique opportunity to compare analogue and digital reproduction because I also had a copy of the original master tape. Unhesitatingly, I should say, the CD was 'nearer' the master, but vinyl produced a 'better' stereo image - in fact, better than the master tape! A conundrum indeed.

After much deliberation and armchair theorizing I set about doing some experiments. Late nights with an oscilloscope eventually uncovered that electrical and mechanical crosstalk within

recorded message

Left by Richard Brice

characteristic of the 'blurring' problem that the brain perceives the high frequency, intensity derived stereo image as generally wider than the low-frequency, delay derived image. With this in mind, Dr. F. Edeko conceived a way of solving the problem acoustically.

His system involved the construction of two special three-way loudspeakers which were positioned on their side. In this way, the angle between the left and right woofer, the left and right midrange unit, and left and right tweeter respectively decreased at the listening position. This clever idea, combined with carefully designed crossover units, enabled Edeko to construct a stereophonic system in which stereo image quality could be improved without tonal distortion.

I can vouch for Edeko's methods because I built a prototype system and was surprised by the improvement in stereo image quality it brought about. Indeed, it was Edeko's articles which first alerted me to the fact that 'drawing room' stereo could be improved. That, and one other unforgettable experience.

Several years ago I was involved in my first recording which appeared on

the cartridge and pre-amp were causing a stereo image manipulation which was similar to that brought about by the Blumlein 'Shuffler' circuit and Edeko's loudspeakers - all the important narrowing of the stereo image at high frequencies. It supported what I and so many hi-fi fans knew to be the case, that vinyl really does sound better than CD - especially in LP's presentation of a realistic soundstage.

The excitement for me was discovering that high frequency crosstalk emulated the effect of the 'shuffler' circuit and improved the stereo image without incurring tonal penalties from sum and difference processing. The result of my work was a patent application and the development of a frequency dependant crosstalk injection network named 'Francinstien'. I reasoned that this circuit could be fitted onto the output of any CD player or DAC and be used to enhance the image quality from digital. Two years on and sixty years late, to my knowledge Francinstien still represents the first commercially (and sonically) successful implementation of the last piece in Blumlein's stereo ●

CLASSIFIED ADS

... CONTINUED FROM PAGE 128

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THE 'NAK' OF TUNING

Nakamichi are attacking the £400 tuner market with their ST-2 tuner.

Simon Cooke wonders if there's a knack to building a best-seller

Nakamichi have a long-standing reputation for cooking up some of the best cassette decks around, but their other hi-fi separates have generally met with rather less success. This could be partly due to the fact that they rarely feel as though they aspire to the same quality as their cassette decks.

The first impression of the ST-2 tuner, unfortunately, is not of engineering excellence. It feels like any other mass produced tuner and lacks the awe-inspiring build quality which Nakamichi can attain. It is contained in a standard-width black box, constructed from fabricated sheet steel, with a large centrally positioned orange LED display in the fascia. To either side of this display is a sizeable rotary knob, the left-hand knob being for preset selection, and the right for tuning.

Both of these are click-stopped, which I thought

reasonable for the preset selector, but for the tuning knob I found myself yearning for the smooth tuning control of the Leak Troughline, used as a reference in this test. But whilst the Troughline is a manual tuner, the

ST-2 is a synthesiser tuner that steps up through the band at 0.05MHz intervals. I often have the nagging feeling that a station might be sitting halfway between 0.05MHz points. It may not be the case

in reality, for such tuners actually tune more accurately and are more stable on a station than the old analogue types, but there are a lot of buyers out there - of whom I am one - who prefer smooth tuning controls simply for their own peace of mind - but that's no reflection upon the Nakamichi of course.

Apart from the two rotaries, there are seven small press buttons on the fascia, two to the left of the display for preset memory input, two to the right for band search, locating the next station on the band, and three underneath the display for stereo/mono select, narrow/wide band selector, and mute.

For me, hiss was an audible factor of the performance on all of the stations available, slightly diminishing the impact of quieter passages on classical music and plays, but I'd prefer to deal with the sound quality first, and come back to that later.

so obviously goes above or below the dynamic range being conveyed. Some equipment is good at masking this, albeit mild, absence of frequencies in the listening room, if they suffer from it, but the Nakamichi was simply too honest. For instance, listening to some dub reggae on one of London's community radio stations, the Nakamichi diminished the rumbling beat and left me listening to a West Indian poet keeping rhythm with his tapping feet. Where were the drums, the heavy synth beat, the woof? Wherever they were, the Nakamichi wasn't looking hard enough to find them.

The notion that these anomalies were caused in transmission by compression and gain-riding was easily dispelled by a quick burst on the Leak. I was suddenly inundated with rumbling bass and clean-cut treble cascading out of the speakers. Return to the Nakamichi and it all dried up.

With all that said, the midband was very clear and lucid, and music of any kind bopped along quite happily within certain restraints. Within this portion of the spectrum the Nakamichi exhibited an easy, relaxed sound which was quite

"The Nakamichi exhibited an easy, relaxed sound which was quite capable of a captivating performance, as long as the tonal range of the music did not stray too far from the mid."

Tonally, the Nakamichi is a little compressed, with frequency extremes softened. The problem is not so much that treble and bass frequencies are missing, but that the music being played

capable of being captivating, as long as the tonal range of the music did not stray too far from the mid.

The top end suffered the same symptoms as the bass, but although it

seemed to occur to a greater degree, it was sonically less noticeable than the missing bass line. It is, however, most annoying when you listen to an orchestral work you like and find that the recording sounds like it was the one made when most of the violin section were on their tea-break. But this isn't uncommon to solid state tuners based on current chip sets; they often sound restricted at frequency extremes.

SHARP AND CLEAR

Staging was an area where the Nakamichi excelled by exhibiting the ability to space the voices in a play into a good semblance of their expected positions. Interviews sounded sharp and clear, bouncing easily from one speaker to the other, which would lend them added urgency, but you probably won't buy a Nakamichi tuner just to listen to Sir

Robin Day dissecting politicians. It was unfortunate that this ability started to fall apart with larger works, big bands and orchestras sounded compressed and instruments could not be positioned properly.

I mentioned earlier that the Nakamichi seemed quite prone to hiss. This was audible in studio discussions like Round Britain Quiz on Radio 4, we found. A slight but discernable hiss accompanied the panellists, one not apparent on the Troughline. The Nakamichi seemed a little glassy across the midband too, which probably helped emphasise this effect.

So how does this tuner measure up against the competition? It is definitely competent, but there are many other equally or more capable machines around - especially at the price. In truth, the ST-2 can even be outstripped by some less expensive members of the

competition; Denon and Aura come to mind. There is, unfortunately, only one cast-iron reason for buying this tuner and that is to complement a Nakamichi system. Otherwise, it's worth bearing in mind the fact that the renowned Quad FM4 costs just twenty-five quid more. When you consider that, you begin to wonder whether the Nakamichi is such good value.

Nakamichi ST-2 £400
Nakamichi B&W Loudspeakers
 Marlborough Road,
 Churchill Industrial Estate,
 Lancing,
 West Sussex
BN15 8TR
Tel: 0903 750750

MEASURED PERFORMANCE

The ST-2 proved as competent all-round as most Japanese tuners, but it also displayed their usual foibles. The latter are a signal strength meter of little practical value and high selectivity even when it isn't required or selected, namely in Wide IF mode. The metering problem revolves around customer perceptions; Japanese manufacturers universally believe (and so do some UK manufacturers these days) that if the signal strength meter doesn't read maximum, when that of a rival does, then the customer will buy the latter, believing it is more sensitive. Perhaps they are right, but somehow I doubt whether the ploy of rigging the meter to read maximum with a very weak signal is the only or best solution to this difficulty. Hitachi sold their FT-5500 MkII very well in the UK for example, and it had a superb meter, so sales aren't inextricably linked to meters that read maximum prematurely.

The Wide/Narrow selectivity option rarely effects much change in performance on Japanese tuners; they are always very selective and sacrificing this hard fought for property seems to go against the grain. Ideally, Wide should give around 60dB alternate channel selectivity, a satisfactory if unexceptional figure, but much better sound quality. On the ST-2 selectivity remained very high at well above 80dB even on wide mode. In fact, I noticed Narrow actually gave worse selectivity, suggesting that on this tuner - like most of its rivals - the facility is a gesture rather than a real benefit.

These niggles aside, the ST-2 measured well enough. It has a flat frequency response that reaches up to 16kHz, giving it good basic tonal balance. A slight rise in output of +0.4dB around 5kHz, visible in the analysis as a shallow hump, will however push detail in

the sound forward and is likely to be heard as either a degree of brightness or sheen, or possibly just as a welcome strengthening of reproduced detail; only listening tests can tell.

Channel separation was wide on stereo and distortion levels reasonably low all round. Little pilot tone (19kHz) or sub-carrier (38kHz) leaked out, but I was disappointed to find that hiss was an unremarkable -70dB minimum - right on the border lines of audibility. The ST-2 isn't perfect for critical Radio 3 listening, since a slight background hiss may on occasion be just audible (for comparison, cassette with Dolby C gives -76dB hiss).

Sensitivity proved good at 30µV, if not exceptional. Output was a high 750mV, enough to drive a lot of power amplifiers direct, so the ST-2 will work through passive preamps.

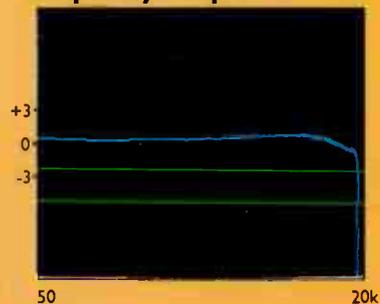
The ST-2 measured well, but it breaks no new ground, it is a little noisier than rivals and it shares their blemishes too; technically it is competent. **NK**

TEST RESULTS

Frequency response	5Hz-16kHz
Stereo separation	-40dB
Distortion (50% mod.)	0.3%
Hiss (CCIR)	-70dB
Signal for minimum hiss	700µV
Selectivity (at 0.4MHz)	>80dB
Sensitivity	
mono	2µV
stereo	30µV
signal strength meter	

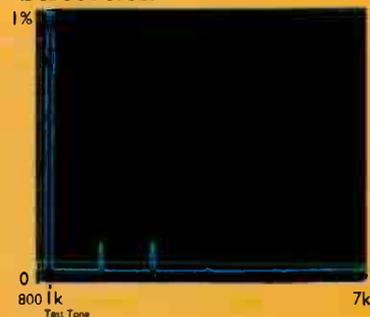
LED No.	level (µV)
1	1.6
2	5
3	10
4	40
5	160

Frequency Response



A slight rise in frequency response across the mid-band produced some glassiness in the sound.

Distortion



Distortion was low at 0.3% average, although bettered by rivals.

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.... Continued from 53

Both Germany and the U.S.A. have two specialist DIY magazines apiece, for example, yet we have nothing like it in Britain. Here, publishers have acquiesced to the views of those who have shouted loudest against DIY in the industry and, as I can testify from experience, empty vessels make most noise.

In Japan, the magazines constantly publish circuits of valve amplifiers, usually based upon old and difficult valves like 300Bs and 845s. Apparently, Japan has a huge interest in these amplifiers, the word there being that they are the best. In fact, throughout the East, as well as in the U.S.A. the 300B valve is revered. Now

ask yourself - when did you see the 300B appear in Britain? Until we published a unique modern design in Supplement No 4, just to prove that in this country we too have the knowledge and skills to make such amplifiers, nothing significant had ever appeared.

In Germany there are kit loudspeaker shops. would you believe! Their hi-fi market is huge and DIY is a significant part of it. Oh, and they are coming over here, by the way, to do the things we refuse to do, so I hope not to hear squeals of protest from retailers when a large loudspeaker kit outlet opens on the M25 or in Central London, mimicking the success of IKEA, but selling hi-fi!

Some retailers have got it wrong too, although the

majority are open minded. Retailers should attempt to give this resilient part of the audio market due consideration, instead of peremptory dismissal.

Manufacturers vary a little more in their attitudes. Many, I know, started like me by building their own hi-fi and then - like me - decided to make a living out of it. Amongst them, quite a few harbour an affection for the whole business of experimenting and building. Others are more bloody minded and simple about it; their only interest is to get people to buy their product, no matter what. Any distraction to that is to be routinely opposed tooth and nail. The latter need to be handled with some degree of resolution by those around them. As a dyed-in-the-wool enthusiast myself, this

comes easily to me; I'm upset and angered by such people. They ruin it for everyone, even themselves in the long term.

What a cruel irony (for some!) that the magazine that is least commercial, Hi-Fi World, is the only magazine that, in the long run, will prove to be most commercial. Whilst the others appeal to the sensibilities of their advertisers, we only know how to appeal to our readers, simply because we have the freedom and desire to write about what interests us as enthusiasts.

The Penta Show this year was a great experience for us, better than ever, and my thanks to everyone who collared me about their interests and their hi-fi. We all seem to be enjoying ourselves and doing well ●

Yippe-chi-ay, as Bruce Willis would say, we've just had the best piece of news since the magazine started back in 1991. As you will have just read, our circulation, according to W.H. Smith figures which are independent and free from corruption, is up by 24% over the last year. It's such a nice feeling to find, after spending the last 12 months bashing our heads against a wall, that we finally seem to be breaking free from the rest of the pack. At last the hard work is being appreciated by the people who count most to us, the readers: thank you for supporting us.

We have all been given a new lease of energy, even after the gruelling, but enjoyable, Penta hi-fi show where so many of you gave encouraging support. Unfortunately we haven't had time to celebrate yet, and with a supplement issue and all its extra workload I don't think we will for some time yet, but we certainly aren't short of motivation now, if we ever were.

I share the same feelings with Noel that the DIY supplement has played a great part in this uplift, catering for a whole group of you who previously had been excluded, but I feel there is more to our recent success

than just DIY articles. I now feel that we are offering a broader range of articles than ever before; DIY, theory, readers' systems, factory visits, letters, Q&A, columns, group tests, music reviews, vintage equipment etc. let alone straight reviews, and whilst overall general interest certainly is falling in hi-fi, something we are trying to oppose as strongly as possible, the enthusiast core is becoming increasingly stronger and more determined to stay.

We receive a bundle of letters every month from people who stopped buying hi-fi magazines five or ten years ago, but who have just been lured back by articles aimed more at the enthusiast reader and less towards promoting the latest 'box of tricks'. This is great, but not

enough to stop the overall falling interest in this wonderful hobby/leisure activity. What is worrying is the lack of young blood coming into the hi-fi fraternity. We receive very few letters from young people seeking advice on their first system, or looking



marketing job, that to the average teenager an £800 Kenwood is considered to be the best hi-fi available. Most don't even know that hi-fi exists, or more importantly that it doesn't cost any more than the sonically inferior midi system. We need to pay more attention to this problem if hi-fi is ever to overcome the competition from Nintendo, Sega, laser disc etc. which is marketed with bright colours and a young exciting image.

Retailers can help here, by convincing the teenager that separates will give them a 'wicked' sound, with better bass, stronger vocals and faster treble, but that it will cost them no more. They are helping to secure their, and the industry's, future. Once you hear a good hi-fi, it is hard to live with anything

Dominic Baker dB on the level

to upgrade from midi systems. Although music is almost certainly the number one interest of most teenagers, they don't seem to care about the quality with which they hear it.

Unfortunately the Japanese have done such a powerful and effective

less, and so a path of upgrades follows. That same teenager, now a young professional a few years into his career, will have built up a system worth several times the £800 Kenwood, and will continue to spend. Hi-fi is a hobby, not a passing interest ●

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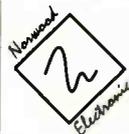
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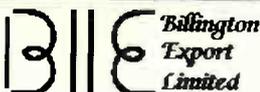
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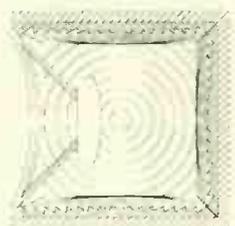
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IN THE DECEMBER ISSUE

MOTH ALAMO

We'll be bringing you a review of the latest Moth turntable, which is organizing a last stand against the rising tide of silver discs at the £170 price point.

THE NAIM NAIT 3

Naim have recently brought out another addition to their well-respected range of amplifiers, in the shape of the NAIT 3 integrated amplifier. We'll be putting the Nait through its paces and assessing how it measures up to the competition.

LEAK TUNER

One of our favourite pieces of vintage equipment hits these pages again as Dominic Baker gets both feet in the Troughline.

THE GROUP TEST

Following our reviews of three sub-£200 loudspeakers in this issue, we have a group test of 'speakers at around the £200 price point.

DACULA

Yes, we know we've promised you this before, but we couldn't get it to come

out in the daytime. This time, however, we'll bring you a review of Select Systems' £376 Crystal-based converter, if you'd just stop waving that garlic around!

ALL THAT AND THEN SOME!

All the regular items, news, reviews, information, dealer guides, your queries, the definitive answers, special offers, the competition, classified ads, and in a possible new column on the great audio buyers of history, we'll be asking Alexander the Great about horn loudspeakers. Or maybe not.

AND THE SUPPLEMENT!

Yes, Santa's elves have been scribbling away again, and will be delivering DIY supplement No.6, containing details of our new Single-Ended amplifier design, along with our December issue. How could you bear to be without it?

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



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2. Which month of 1972 saw Naim become a limited company?

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4. What exactly is an *annus mirabilis* anyway?

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<input type="checkbox"/> A year of surprises	<input type="checkbox"/> This year
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THE TIE BREAKER (Obligatory)

Complete the following ditty in no more than thirty words:

The logo of Naim looks incredibly pretty,
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 this system's the prize for completing this ditty,
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This month we're giving you the chance to win a complete tuner-sourced system from two of the most respected names in British hi-fi, Naim and Epos.

The prize, in detail, consists of the new Naim NAT 03 tuner, reviewed by Noel Keywood in our September issue, Naim's very latest amplifier, the new NAIT 3, and a pair of Epos ES11 speakers with dedicated stands.

Naim have been at the forefront of home audio since they became a limited company in June 1972, swiftly to become one of those companies whose name is whispered in awed tones wherever and whenever hi-fi buffs meet. The build quality and reliability of their products are legendary, and they have a dedication to sound reproduction which is second to none, and lends all of their products that unmistakable 'Naim' quality.

They not only sound good, but look good too. Noel mentioned in his review of the NAT 03 that the green light allowed to seep out from around the Naim logo on the front panel 'adds a little bit of magic to the otherwise stark appearance'.

Did I say Naim products sound good? Well, you don't need me to tell you that, so here's a few of Noel's comments on the sound, compared to his Leak Troughline:

'it paints up a softly pure and slightly warm sound reminiscent of valves'

'bass lines came across well, having plenty of heft'

'a convincingly natural and unusually relaxing sound that is unique and distinctive'

That's just the first part of the prize! There's more to come. Naim aren't the sort of company who rush out 'upgrades' to their current range every few months, so 1993 has been something of an *annus mirabilis*, since Naim have been beavering away at their Salisbury headquarters and have actually launched two new products this year. The second of these products is the NAIT 3 integrated amplifier, which follows Naim's standard livery and matches the NAT 03 tuner. There isn't much that we can tell you about the NAIT 3 amp as yet, since it's so new we haven't even had time to review it ourselves!

TUNER SYSTEM

However, a quick preliminary audition shows that it should live up to the grand tradition of Naim amplification.

Building a 'speaker' which can do justice to the front end could have left our winner with quite a headache, so we had decided to throw in a packet of aspirin, but then somebody had the bright idea of asking Naim which speakers they would recommend. A preferred pairing was with the Epos ES11, they told us. This was generally popular, having stood the test of time well.

The Epos ES11s are notoriously choosy partners, being the kind of 'speaker' which only really sings with good amplification. Luckily, the Naim 3 lives up to the Naim tradition of being amongst the best amplifiers available, so we don't expect our winner to have any problems.

In previous tests we have run on the Epos ES11s (built and distributed by Mordaunt-Short), such as the group test in our January 1992 issue, comments like 'coherence, subtlety and graceful presentation' or simply 'finesse' have flown fulsomely from the word processors of our reviewers. Since their inception they have been, and continue to be, benchmark products.

That's the prize then, Naim NAT 03 tuner, NAT3 amplifier, and Epos ES11 speakers with stands - and it can be yours for just the price of a stamp and a little brain power applied to our tie-breaker. What could be simpler?

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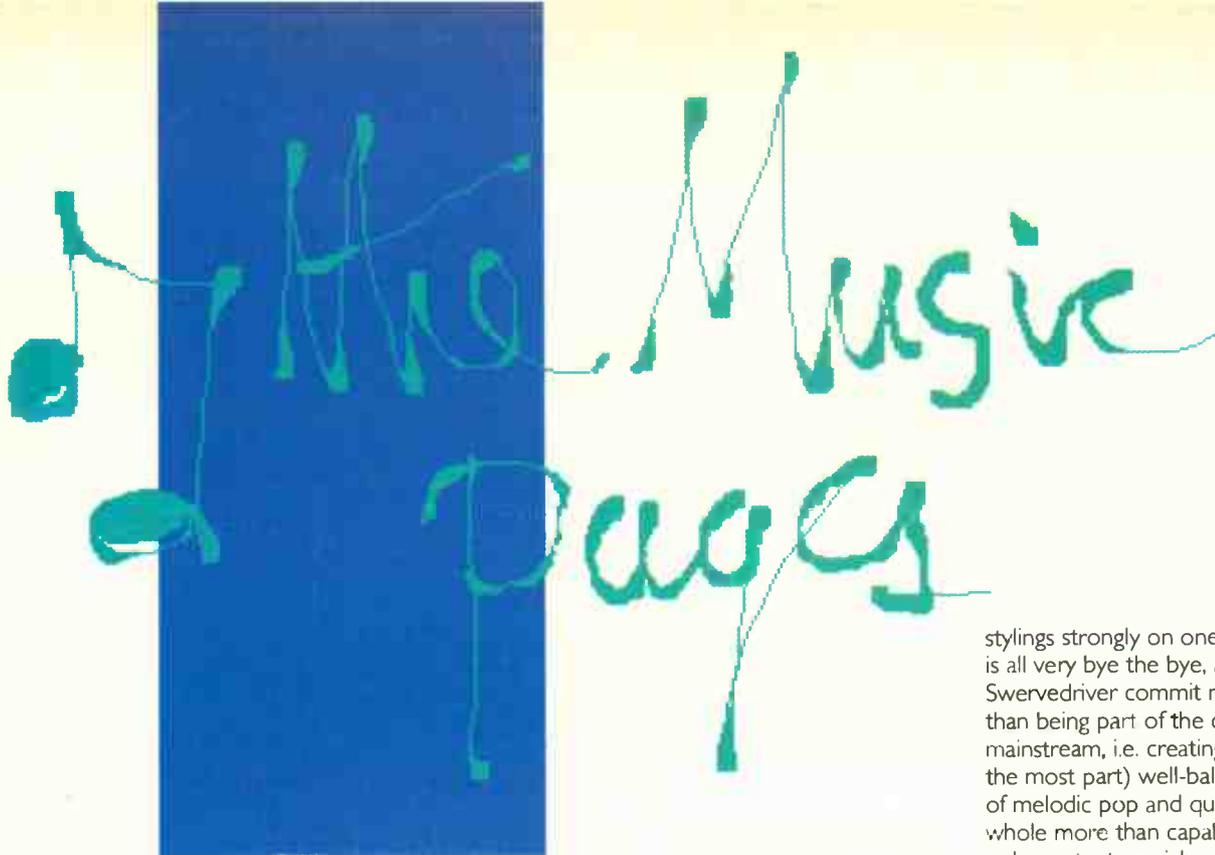
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In the event of more than one entrant submitting all the correct answers, the winner will be decided with a tiebreaker. We will endeavour to publish the results in the January '94 issue. Audio Publishing Ltd. reserve the right to publish such entries or parts of entries as the company sees fit. We regret that photocopies or facsimiles of the entry form cannot be accepted. No correspondence about this competition will be entered into and the Editor's decision is final. Employees of Mordaunt-Short, Naim Audio, and Audio Publishing Ltd. may not enter.

Audiolab System Winner August Issue Competition

Despite the summer holidays, the response to our August Competition was overwhelming. The winner of the Audiolab tuner and amplifier combination was Mr. D. Wilkinson of Newport, Isle of Wight. Happy listening, Mr. Wilkinson!



The Music Pages

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Theresa Bolster

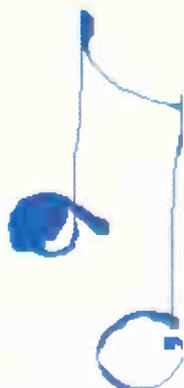
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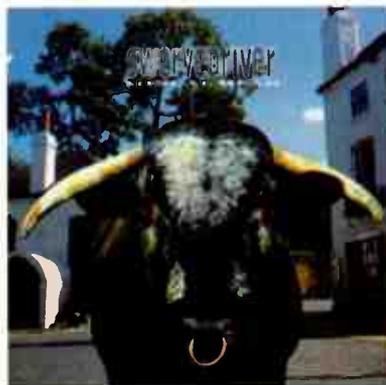
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SWERVEDRIVER Mezcal Head

Creation CRE CD 143

● 'Mezcal Head' is the second long-player from Oxford-originated Quartet Swervedriver, although on superficial hearing you could easily be forgiven for thinking it's the latest Nirvana LP. Singer/guitarist Adam Franklin's vocals have a strong tendency towards a very Kurt Cobainish drawl - at its strongest on 'Duel', 'MM Abduction' and the closing 'You Find It Everywhere'. On the other hand, I still think KC himself sounds like he's modelled his vocal

stylings strongly on one Sting. Still, this is all very bye the bye, and ultimately Swervedriver commit no sin other than being part of the current indie mainstream, i.e. creating amiably (for the most part) well-balanced collisions of melodic pop and quasi-Metal, the whole more than capably sewn up by a dense, texture-rich production c/o the band working in tandem with indie stalwart Alan Moulder, whose previous credits include Smashing Pumpkins, Curve, Ride and My Bloody Valentine. Indeed there are touches of the last mentioned audible on 'Mezcal Head' too, great wedges of thundering guitar waterfaling against one another with far from unpleasant results - note particularly the far from chilly cauldron of sound that is 'Blowing Cool' with its classic chord laden spinal riff and gem percussion from one Jez. This last mentioned and sumameless gent punishes his skins admirably throughout, but never to better effect than on 'MM Abduction', again providing a perfect backdrop for the guitar duels of Franklin and fellow string bender Jimmy Hatridge. Other standouts include 'Harry and Maggie' with a riotous, primally screaming riff that's as old (and as new) as class-A Hendrix Experience; a whiff of Sixties' surrealism too on 'Last Train', a dense, storming whirlwind of sound topped off with amiably Dylanish vocal phrasings.

On the other hand (that's the third hand, if anyone's keeping count) there are times when Swervedriver, try as they may, don't quite hit the spot - the failed atmospherics of 'Girl On a Motorbike' or the final 'You Find It Everywhere' which is muscular in an anabolic steroid way, i.e. lacking in real substance or evidence of hard work.

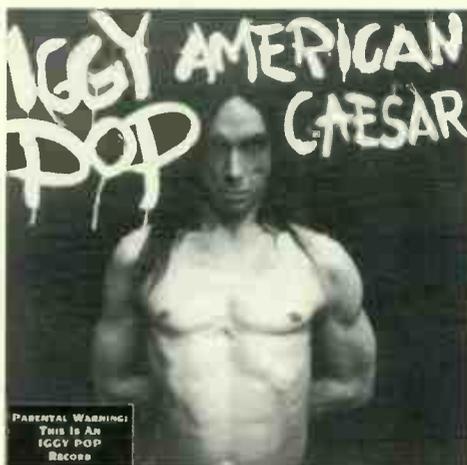
Still, you can bet your life this makes for cracking live music -and funnily enough the group are spending the Autumn touring our fair land mostly supporting Curve, who think they're hot stuff and I dare say they're more right than not.

RECORD OF THE MONTH

**IGGY POP
American Caesar
VIRGIN CD VUS 64**

● With well nigh a quarter century of rock'n'roll madness under his belt, Iggy Pop's well qualified to be regarded as one of the eminence grises of the musical pantheon: small wonder he's been dubbed a godfather figure of practically every sub-genre to have emerged in the past twenty years. A key influence with any punk band worth their salt, Iggy's subsequently gone on to be a prime mover in the disco/techno crossover, and been rediscovered (after 'Blah! Blah! Blah!' and subsequent releases) as a King of Heavy Metal. And, despite being dangerously close to Keith Richard age-wise, Iggy remains one of the most vibrant, exciting, plain dangerous performers on the planet, and he

still has a torso most twenty five year olds would kill for!
Many reviewers have already hailed



'American Caesar' as Iggy's best album since 'The Idiot'. That's possibly true, but for money, Iggy's never actually made a totally bad album, and the great ones (even 'Zombie

Birdhouse' has its fervid supporters) tend to be a matter of personal taste. On 'American Caesar' Iggy retraces familiar favourite themes - drugs, madness, those fave staples of the plugged in beast - and tries on the old pair of new shoes (touchingly moving slow grooves such as 'F***ing Alone' or 'Jealousy') and in between there are more than enough touches of the old fire and fervour to both satisfy the old aficionados and seduce some new friends too. There are stark, ironic monologues, stories of the street aplenty ('N.Y. Girls') and that wild and crazy sense of humour that is so often undervalued. Small wonder that Iggy's teamed up with that other wild 'n' crazy artist-popster Henry Rollins on one cut. It's a match made in Hell, but Heaven to the ears and soul. James Jewel Osterberg is alive and well - 'Yeah, yeah and a boo hoo'.

**MAGAZINE
BBC RADIO 1 LIVE IN CONCERT**

**THE FALL
BBC RADIO 1 LIVE IN CONCERT**

● Two seminal sounds from Manchester, recorded in their heyday in the case of the long-defunct Magazine, or first flush, if you like, when it comes to Mark E Smith's still-running Fall.
Between them these two bands helped bridge the gap between the



angry, undisciplined sounds of punk and the broader, more Catholic music that was to follow. Somewhere between the pointed, fairground barker mutterings of Smith and the paranoid insect whinnings of the young Howard Devoto you can trace the roots of Joy Division; and the Technicolor pop of New Order and legions thereafter can be heard in embryo in the florid colourings of the

infant Magazine.
The latter, recorded live at London's cosily sexy Paris Theatre in November of '78, were fully formed and flying at this period in their brief but inspired biography, early masterpieces like the endlessly evergreen 'Shot By Both Sides' nestling comfly alongside the snarling 'Give Me Everything' whose funksome bass underpinning anticipates the dance-time brilliance which would see its apotheosis in the dazzling peaks of the 'Correct Use Of Soap' LP.

Magazine, for those who don't recall, were DeVoto's kiss goodbye to The Buzzcocks, who he'd co-founded alongside Pete Shelley after seeing The Sex Pistols (and the future) a couple of years previously. With him he took his distinctive, not to say insidious, vocal style and a way with lyrics equalled by few writers of his or any other pop generation. But while his old band went on to define bouncy chart-pop anew with a string of hit singles Magazine were another kettle of piranhas altogether, and the evidence is all here, from the mad carnival of 'Great Beautician In The Sky', the measured rhythmic thrust of 'Back To Nature' ('I couldn't act naturally if I wanted to', confesses DeVoto in his best demented arachnid growl), or the lush, witsome arrangement of 'Definition Gaze'. All this stuff's been heard before, of course, but - aside from the odd minor hiccup it's still worth having, be it as a fine and varied introduction to



a great band, or as an indispensable addition to the completist's archive.
Like DeVoto himself, Mark E. Smith is that kind of distinctive, original stylist who (like the great Captain Beefheart, a common hero to both) tends to split listeners neatly into fervid fan or totally repelled unbelievers. For my part I always loved DeVoto's work, but found a lot of The Fall's output rather irksome, largely due to antipathy as regards Smith's vocal style which frequently strikes me as lumpish and unwieldy.
All this is probably deliberate of course, and if nothing else you have to admire anyone who can plow his own furrow with as much tenacity and imagination as Mark E. Smith has.
You have to admire too the man's capacity to come up with frequent ear-blitzing surprises; witness the brilliant make over of R. Dean Taylor's golden oldie 'There's A Ghost In My

House', the whooping vocal flourishes of 'Australians In Europe' (a masterful piece of foresight considering how the Antipodeans have colonised our airwaves and television in subsequent years) or the catchy pop of 'Shoulder Pads'. But there's the odd drawback also; a certain muddy sound means the lyrics are largely lost in the mix, while one or two numbers just go on too long for total armchair comfort, no matter how well they may have worked live.



STIFF LITTLE FINGERS
BBC RADIO 1 LIVE IN CONCERT

● Before U2, there was Jake Burns' Stiff Little Fingers, a breath of fresh fiery air that wafted across the Irish Sea, oozing street cred from every pore and giving even brand leaders like The Clash more than a run for their money with Burns' rabid vocals and guitar carrying more promise than any son of Erin to have come along since Van The Man.

But Style is very much a thing of the moment and when that moment has passed (in this case April of '81) then what? Well, the sad but unarguable truth of the matter is that looked at down the dusty corridors of time, Stiff Little Fingers emerge as little more than a comma in the pages of history, one that owes more than a little to Strummer's old band, often uncomfortably so. Thus 'Safe As Houses' is little more than a muted 'Clash City Rockers', and both 'Roots Radicals, Rockers and Reggae' and 'Just Fade Away' are based on

percussion tracks which positively reek of Topper Headon - while both being based on the one barely indistinguishable guitar phrase.

On the plus side there's a distinct pleasure to be gained from Burns' singular blend of 'Oirish' fury and reggae phrasing, the frequently admirable smart turns of phrase ("She asked me out and I asked her in" etc.) and some devilish fretboard freneticism. Unfortunately the pluses hardly outweigh the minuses. Hardly essential.

DEAD CAN DANCE
Into The Labyrinth
4AD DADC 3013CD

● Dead Can Dance are one of the best kept secrets in Indie-dom. The sound-child of multi-instrumentalists Brendan Perry and Lisa Gerrard, Dead Can Dance introduce an intriguing multi-instrumental mix which draws



on too many sources to mention, but carrying strong hints of Indian, North African and various Middle Eastern musics. I suppose it wouldn't be entirely unkind to call them 21st century hippies, but that too is something of a misnomer, as they easily put the main bulk of their cross-cultural predecessors to shame.

Titles such as 'Yulunga (The Spirit Dance)', the mysterious 'Saldek', or 'Towards The Within' could easily summon images of weirded out acid freaks in grubby kaftans dabbling in freaky aural holiday snaps ("and this is one we learned off this monk on the

beach at Goa, maaan") but this would be doing the group a huge injustice. Their music is catholic in the best sense of the word - and, no, the Pope has nowt to do with it - utilising a vastly impressive array of instruments and influences to admirable effect. They're by turns traditionally folksy, poly-cultural, and even (perhaps surprisingly in such a classically various context) catchy. They're also frequently moving ('Tell Me About The Forest') and never less than inspired.

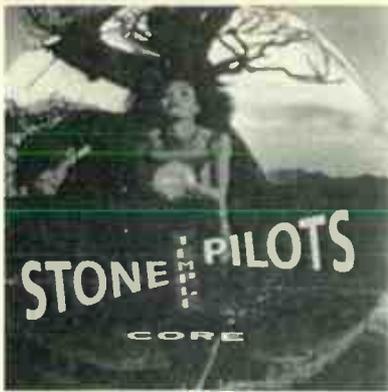
This is not music words can really do any sort of justice to - suffice to say they do not in any way mean or form deserve to be dismissed without a fair hearing. And fair hearing is what this wild, mild (in the best sense of that word) and never less than magical music is capable of. Listen and be amazed. And everyone should hear 'How Fortunate The Man With None' at least once in their lives. Hearing is learning; learning is earning - a true enriching of the spirit.

Theresa Bolster

THE STONE TEMPLE PILOTS
Core
Atlantic 7567824182

● The Stone Temple Pilots are a relatively new band from Los Angeles and this, their debut album, has proven incredibly successful for them in America. It has sold one million copies spawned three (soon to be four) highly successful singles and the

Rock + Pop



band members have become stars overnight. Although its reception here in Britain has been far quieter, 'Core' has all the right ingredients and should prove a winner in time.

Judging from the gloom that pervades 'Core' it would be tempting to peg the Stone Temple Pilots as world-class cynics. Their sound is intense and powerful hypercharged heavy rock. It's by no means 'cockrock' however. Vocalist and songwriter Weiland's lyrics are too disturbing for any frivolity or egoism. Weiland says he finds the darker shades of life more attractive than the yellows and oranges, and his lyrics rely heavily on themes of alienation, apathy and guilt. Musically and lyrically it is at times quite disturbing and often angry. Alice in Chains (without the drug allusions) is a good reference. Unfortunately at times the Stone Temple Pilots sound so much like Alice in Chains it's bizarre. The vocalists of both bands have very similar singing styles. Although other aspects of the Stone Temple Pilots' music seem highly derivative if you can ignore these suggestions. 'Core' is worthwhile investing in for the music's energy and power, if not its originality.

The first single 'Sex Type Thing' with its raging verses and awesome guitar work from Dean DeLeo is a good example of what to expect from 'Core'. If you listen closely it's a nasty little song about an impending date-rape situation told from the viewpoint of the odious man. Most of 'Core's songs have such a double edge. They seem initially to be simply great rock, verging on radio-friendly. A darker underside lurks in all the songs however with many references to rot (spiritual and physical), pain and death. The great music saves it all from becoming a chore to listen to. The second single 'Plush' has been described as Seattle-esque and it's certainly the most commercial of all the songs on 'Core'.

The Stone Temple Pilots are huge in America and they'll be huge here too. They sound like Alice in Chains, they sound like Nirvana, so what?

'Core' provides an adrenalin rush, the best legal buzz around, indulging is highly recommended.

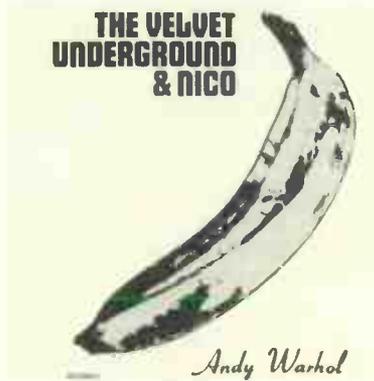
VARIOUS ARTISTS
Velvet DownUnderground
Bird CDOOI Shock Records

● With the 25th anniversary of the release of Velvet Underground's debut album imminent, a gaggle of Australian bands collectively decided to record a Velvet Underground tribute album. While tribute albums are a dime a dozen lately (Leonard Cohen, the Beatles, Neil Young) this one's a little different as the songs were re-recorded by these bands in the exact order they appear on the original. Some of the artists appearing on this album may be familiar to those who haunt the import bins at record shops - the Cosmic Psychos the Underground Lovers, Bored - whilst many will be unknown to most.

Often these tribute albums are of little value beyond the novelty and 'Velvet DownUnderground' is prone to this limitation. The problem is that many of the bands bring little or no interpretation to the songs. Many of them are straight cover versions with some of them hovering so close to

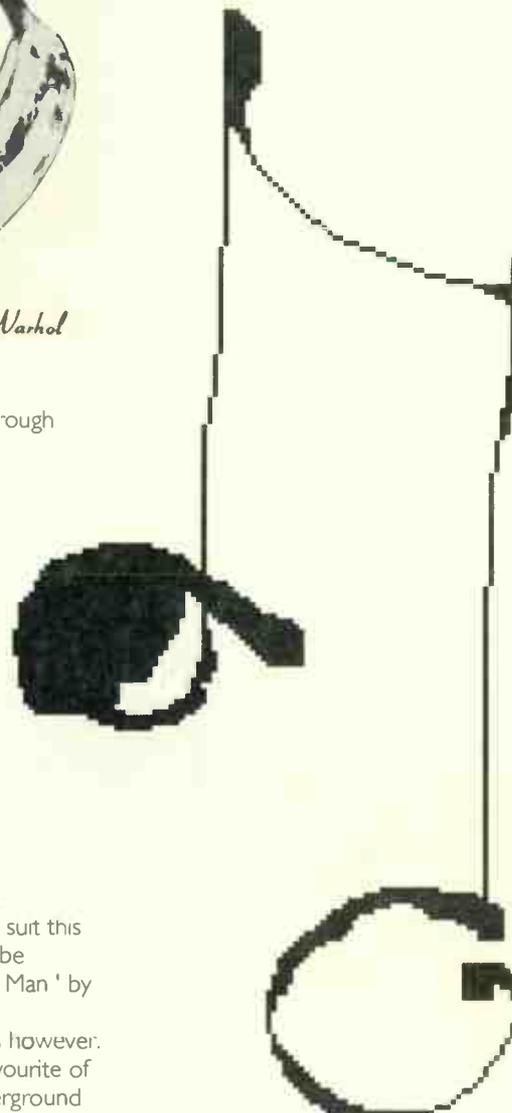
Lovers interpret 'I'll be Your Mirror' beautifully. The vocals are excellent and they manage to blend their own idiosyncratic sound with the spirit of the original. Ripe, another highly regarded Melbourne outfit, provide an awesome version of 'Heroin'. It's sinister, unnerving and makes the original seem tame. The final track 'European Son' covered by an unknown band called Snark is an outrageous and very weird burst of noise which pushes far beyond the original in terms of brutality and length, adding four minutes to the sonic assault.

'Velvet DownUnderground' will be of interest to those who collect tribute albums and those looking to discover Australian music. This album serves as a fine introduction to some of the best talents gathering international interest, as well as those still known only locally. It's a shame, however, that some of the artists didn't put a little more effort into their chosen songs and do the albums concept, and indeed, the Velvet Underground, justice.

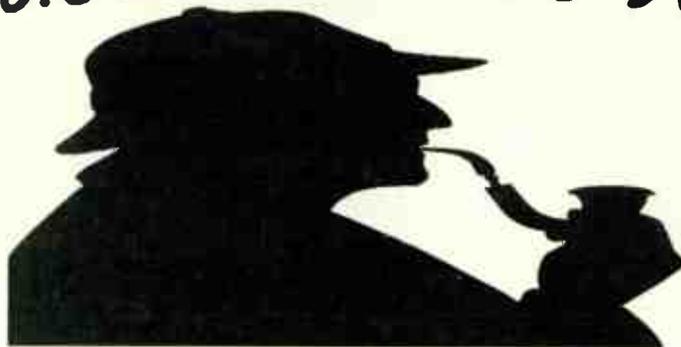


the original that they'd be indistinguishable if heard through someone else's bedroom walls. The Cosmic Psychos are well known and hugely admired in America, but their version of 'There She Goes Again', although a little heavier than the original, is very dull. Likewise the Painters and Dockers (named after an infamous workers union) and their version of 'Sunday Morning'. This band are usually quite raucous, but it would seem that they have toned down their sound to suit this song. Lou Reed would not be impressed. 'Waiting for the Man' by Bored is quite awful.

There are a few goodies however. Recent 4AD signing and favourite of Ivo Watts-Russell the Underground



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Continued on next page . . .

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TAYSIDE

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John Coltrane died about a month after I was born. As far as I can recall, the first time I heard

his name - and it's definitely a case of in one ear and out the other - was as an early teenager; a fellow classmate, nauseatingly precocious, delivered an 'assembly' which largely consisted of an attack on the

greatest of all tenor and soprano saxophonists. On two counts. Firstly (bear in mind that this bright young schoolkid was a "traditional" jazz fan - though Heaven only knows why, aged thirteen in the early 80s) that Coltrane's music was simply a horrible racket. Secondly that Coltrane had inspired an entirely bogus religion - a "Church of Coltrane".

Now, like I said, this went zoom! right over my head. To a teenager into Pink Floyd, Tangerine Dream and Steve Hillage, jazz was just plain boring; whether it was Acker Bilk or Miles Davis was pretty much irrelevant. And as a card-carrying sceptic, I reckoned a bunch of loonies who worshipped some dead saxophonist weren't necessarily any dafter than more mainstream believers. So that was that. John Coltrane's name, let alone his work, didn't mean anything to me for a good few years.

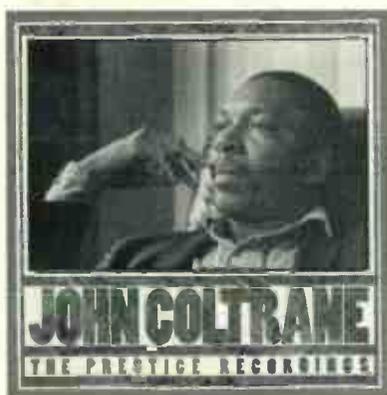
Now all this would be

egomaniacal biography if it weren't for the fact that the lies about Coltrane's legacy that Master Green's little sermon summed are so widely held. Despite being, with the exception of Miles, perhaps the most famous post-war jazz musician, Coltrane was responsible for a huge amount of music, swathes of it unknown to the general public and widely reviled by jazz fans. And despite being, it seems even to me, not one given to hero-worship, a totally admirable figure - a junkie who kicked his habit, a massively dedicated musician who privately practiced constantly and publicly displayed an unquenchable thirst for new modes of self expression, and a personally deeply spiritual individual who nonetheless never let his religious staunchness get in the way of his endless tolerance and kindness - he remains to many either a daunting figure or a risible one, a man out of touch with the secular, materialistic world around him.

Over the next couple of pages I've picked out just a few gems from Coltrane's oeuvre; there's a whole load more out there, some of which I mention, but the Coltrane newcomer - and for anyone else this column will be redundant, just a bit more opinion stacked on to a career already drowning in both professional and amateur opinion - I hope this serves as a useful guide.

This month Simon Hopkins takes a look at the career and music of possibly the greatest saxophonist jazz has ever known.

Simon Hopkins



The Prestige Recordings
PRESTIGE 16PCD-4405-2

● For Coltrane as leader, it all starts here. The young tenor player had already shot to fame in Miles Davis' late 50s group, his harsh timbre and long, questioning, sometimes overly ambitious solos providing such a great foil to the altogether sweeter, bluesier sounds of Julian "Cannonball" Adderley, the group's other saxophonist. This fame led him him into a deal with the New York

Prestige label, and over the next few years he recorded a dozen albums as leader or co-leader for the label: 'Cattin With Quinquette', 'Coltrane', 'Lush Life', 'Traneing In', 'The Last Trane', 'Soultrane', 'Settin The Pace', 'Black Pearls', 'The Standard Coltrane', 'Stardust' and 'Bahia'. In addition he recorded on a good nineteen albums featuring other leaders. This 16 CD boxed set, beautifully packaged in a 12x12" box featuring a superb 34 page book of essays, discographies, original LP artwork and dozens of

photographs, brings together every single session that Coltrane recorded for the label over an amazingly short timespan - just over two years (although, in a fact, the LPs recorded as leader were all recorded in just eighteen months).

For Coltrane, this period was essentially a period of transition: from the sideman of his early years to the world-renowned leader of his final period; from an ambitious, dedicated player whose techniques and knowledge couldn't always keep up

with his concepts to the most virtuosic and explorative saxophonist in post-war jazz; and from a name simply given as leader of ad hoc sessions to a composer and leader whose sense of compositional architecture was at least as great as his improvising skills. So: a period of becoming.

Added to this fact are the special circumstances of Prestige's recording sessions. Prestige is, of course, one of the great labels in jazz history, and ranks alongside labels like Blue Note, Impulse! (sic) and Riverside for contribution to the music of the 50s and early 60s. But Prestige were also a business, and the way they made money, as demonstrated here by the sheer volume of music recorded in such a short period by one man, was to put a lot of music out onto the market. They constantly brought together ad hoc groupings of players to record a mixture of standards and possibly originals by one or other musician on the recording date. No, or at least very very few, alternate takes of tunes were recorded, in order that as much music as possible could be released, sometimes across several albums. So as much as Prestige provided Coltrane with his first break as leader, they yet stifled, or at least discouraged many of his non-improvising ambitions. Post-Prestige Coltrane is remarkable for its sense of total integration, music in which composition, improvising, arrangement and overall structure go hand-in-hand. But for Prestige Coltrane could only ever really be a name on a record sleeve and almost certainly that record's finest player.

Nonetheless, this music is still a revelation. For those followers who view Coltrane as somehow divinely gifted, it provides a glimpse of a

musician grappling with ideas at times slightly out of his reach, and one who, by the end of his tenure, by sheer dint of hard graft, had begun to develop his so-called "sheets of sound" technique, splattering seemingly every permutation of a chord's notes over every chord of a song's changes. Not that this is purely an archaeological treasure trove; not withstanding the limitations on Coltrane, the music in this box - literally a whole day's listening (though I'm not advocating that!) - is all a worthwhile listen, and much of it highly enjoyable, featuring the contributions of musicians as great as Paul Chambers, Hank Mobley, Donald Byrd, Sonny Rollins, Zoot Sims, Philly Joe Jones, Louis Hayes and Kenny Burrell. It's just that this material is inevitably overshadowed by the huge achievements yet to come.

Over all then, a worthwhile, if hefty investment, and one essential for completists. Those with more conservative tastes, daunted by the Herculean prospects of later Coltrane may settle for this (and I should point out that all Coltrane's Prestige albums are available individually on the Original Jazz Classics label) but the enquiring musical mind will want more. And will surely get it...

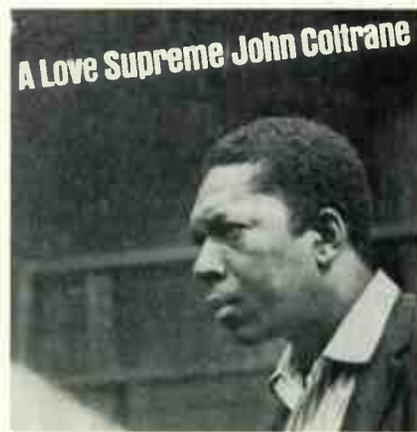
In 1959 Coltrane moved from Prestige to Atlantic for whom he recorded seven albums, the first of which, 'Giant Steps' (Atlantic 781337-2) was virtually a manifestation, announcing simultaneously what he'd achieved at Prestige, and what he had yet to do. Not all the Atlantic albums live up to this promise, however, although 1960's 'The Avant Garde' (Atlantic 90041-2), featuring three quarters of Omette Coleman's classic group (trumpeter Don Cherry, drummer Ed Blackwell and bassist Charlie Haden) remains a corker, and it's his work for Impulse!, to whom he moved from Atlantic, which concerns us here.

A Love Supreme MCA/IMPULSE! MCLD 19029

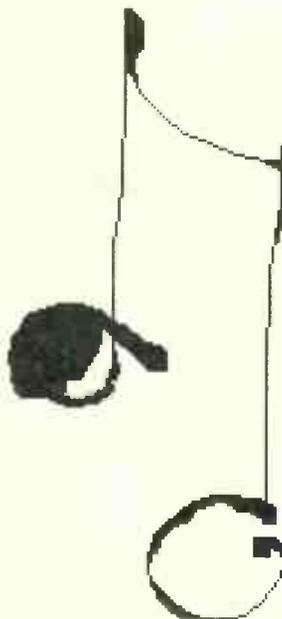
● The best albums made during the first half of Coltrane's Impulse! tenure were made by one of those groups now considered to be one of the finest in all jazz history, certainly the very finest in modern jazz: Coltrane, pianist McCoy Tyner, bassist Jimmy Garrison and drummer Elvin Jones. 'A

'Love Supreme' is among their last studio statements as a quartet, and undoubtedly their finest hour, albeit one in which they were on the verge of splitting at the seams. It's also probably the most talked about jazz album of the last thirty years. With its black and white sleeve shot of an intensely serious Coltrane, the inspirational poem printed on the original gatefold sleeve (and thankfully reproduced on this CD reissue), the chants which give the work its central hook, even the four movements' very titles 'Acknowledgement', 'Resolution', 'Persuance' and 'Psalm', with all this the album has become an icon of spiritual searching far outstripping its purely musical achievement.

That's not to say that the record's detractors - and many have reacted



adversely to the adulation the album has had heaped upon it - are any fairer that its acolytes. 'A Love Supreme' remains Coltrane's first truly great statement: the apotheosis of model jazz, its riff-based themes providing each group member, but above all the leader with the space to explore the outer space of the music's harmony, and the inner space of its spirit. A revolutionary record, then, and utterly essential: sometimes, you can believe the hype.



the group thrash about, half in disbelief. And for all this, 'First Meditations' is probably my favourite record by the quartet: not the masterpiece of its successor, but a lot more fun.

to favouring live albums by and large. This four CD set, over three and a half hours of music, is magnificent stuff, if difficult. Even early in his career, Coltrane was noted for his long solos (a famous anecdote has him commenting to Miles that once

he starts a solo, he just can't seem to stop; "try taking the horn out of your mouth" was the trumpeter's reply). Here, joined by Sanders, wife Alice on piano, Garrison and Ali, he's on hugely expansive form. The final disc, for instance, consists purely of a 57 minute rendition of 'My Favourite Things'. But the brute force of the music blows away any charges of self-indulgence. This is definitive energy music.



The Major Works of John Coltrane
GRP/IMPULSE! GRP 21132

● This double CD set brings together five of the most esoteric works in the Coltrane canon, all with larger groups, all with increasingly pan theistic spiritual aims, and all recorded between June and October 65: 'Om', 'Kulu Se Mama', 'Selflessness' and two versions of the huge piece 'Ascension'. The music brings Coltrane into collision with some of the leading lights of 60s Free Jazz - Sanders, tenorist Archie Shepp, and altoists Marion Brown and John Tchicai among them - and the results are explosive. This is Coltrane music at its rowdiest, the closest it gets to the kind of noise-feast group improv that was getting a foothold in Chicago at the time.



Interstellar Space
GRP/IMPULSE! GRP 11102

● Coltrane's penultimate recording, made in February 67, but surely his true final statement. A duet recording with Rashid Ali, this is one of the most explorative, questioning, expansive LPs in all modern jazz; a fitting end (although, it goes without saying, given its promise, a tragic one) to the career of the most important jazz musician since Charlie Parker.



Live in Japan
GRP/IMPULSE! GRP 41022

● There's a huge amount of live Coltrane on the market, so I ought to recommend some, although I'm not given



First Meditations (For Quartet)

GRP/IMPULSE! GRP 11182

● A couple of months after laying down 'A Love Supreme', the quartet went back into the studio to record the session which makes up 'First Meditations', the group's final studio document. Ten months later, in February 1965, Coltrane would record this same suite, plus one part as simply 'Meditations' (MCAD39139) with drummer Rashid Ali (much more a pure-percussionist than Jones, and more interested in drumming-as-pure-noise than in the mesmerizing polyrhythms of the latter) and 'New Thing' sax screamer Pharoah Sanders added. The very fact that he added these two - avant gardists reviled by more conservative fans who adored Coltrane's sheer virtuosity - shows the direction in which Coltrane was moving. The constraints of straight-time post-bop could no longer really contain his spiritual or musical ambitions.

But this earlier version of the suite is interesting to me precisely because this group - beset now by who knows what personal tensions - is the very benchmark by which all music that Coltrane was now trying to break free from is judged. And so the tension is palpable, with Coltrane's playing constantly bursting through the very fabric of the quartet. There are times when his harmonic squalls and barely articulate (or should that be super-articulate) grunting honks sound like they're in another universe to the rest of the group, most particularly Elvin Jones' virtuosic panache.

Where 'A Love Supreme' is totally in balance, if teetering on the brink, the record has crashed over, as though Coltrane can hear the later version of the piece in his head and is trying to play all the extra stuff himself, while the rest of

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Frequency response	16Hz-40kHz
Distortion	0.02%
Separation	60dB
Noise (CCIR)	-103dB
Sensitivity	240mV
Dimensions (mm)	400w,300d,180h
Supply	110/120V or 220/240V, 220W
Weight	16kgs(34lbs)

VALVE LINE LEVEL PRE-AMPLIFIER £295 ►

We now have finished the design of a super high quality chassis for the line level pre-amplifier. It is constructed from heavy gauge steel with an aluminium anodised and polished front panel. This new chassis comes with the complete kit of parts necessary to build the valve line level pre-amp.

The components are all high quality and include a special screened toroidal transformer, Military Spec. Russian valves, Alps potentiometer, metal film resistors, polypropylene signal capacitors, silver plated copper wire etc.



◀ HIGH DEFINITION LOUDSPEAKER

£295

The High Definition loudspeaker is ideal for low power, high quality amplifiers, transistor or valve. It goes very loud with just 1-5watts, having an enormous sensitivity of 94dB - that's 8dB more than most other speakers. It is also a very easy load for valve amps (8ohms) and it gives a terrifically dynamic and fast sound.

As well as being just about unmatched as a partner for esoteric amps, this speaker is also unusually suited to low powered vintage amplifiers, such as Quad IIs, Radfords, Pye Mozarts and such like.

The High Definition DIY loudspeaker is available as a complete kit, including flat pack cabinet, drivers modified and tested by us, all crossover components and hardware. The flatpack cabinet is finished in an attractive satin black and requires no further finish, but for those who prefer something a little more traditional a mahogany veneer is an option.

If you would like to build your own cabinets we are also offering a drive unit pack that comprises two tweeters and two woofers, modified and tested.

KLS2 LOUDSPEAKER

Satin Black/Mahogany Veneer
Drive Unit Pack

£295/£345
£145

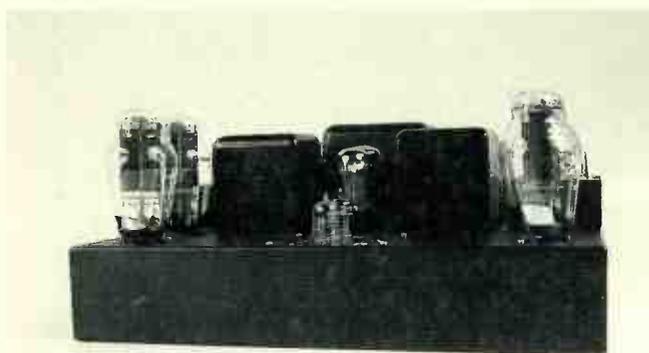
WORLD DESIGNS

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world audio design mail order

300B VALVE AMP KIT

£750 ▼



This is a specialised amplifier based on the highly linear 300B triode valve, designed in 1928 for minimum distortion in amplifiers that had no feedback. Our amplifier similarly has no overall feedback; Tim de Paravicini designed it - including the massive transformers - for minimum distortion, remaining true to the ideal behind the original 300B. But if you want feedback (tertiary or overall), it can be applied without difficulty.

Delivering a conservative 28watts from a 40watt rated valve, our 300B runs its prized assets gently, giving one of the most sweet, open and neutral sounds possible today. Matched with good loudspeakers, it is unsurpassed.

The kit comprises a strong 16-gauge mild steel chassis, fully punched, welded and ground smooth. Finish is a durable 'powder coat' black. A protective bottom plate is provided for safety; a protective top cover is an optional extra. Output terminals (one pair) take 4mm plugs axially and radially for bi-wiring, or heavy gauge bare cable. Output options of 4Ω or 8Ω are selected internally at the transformer. A small circuit board carries most of the components. The U.K./Europe model comes with a 240/220V transformer but 110/120V can be supplied as an alternative - see Overseas details and prices on Order Form.

All parts are included in the kit, including polypropylene power supply capacitors, but not the valves, since these are expensive and many different but specialised versions are available.

A fully built version from an approved build service is also available for £1050 (valves extra).

Availability - end of September 1993

SPECIFICATION

Power	28watts
Frequency response	5Hz-36kHz
Distortion	0.2%
Separation	54dB
Noise (hiss/hum)	-100dB/-72dB
Sensitivity	240mV
Dimensions (mm)	405w,295d,175h
Supply	110/120V or 220/240V, 220W
Weight	20kgs(44lbs)

HIGH PERFORMANCE 3-WAY LOUDSPEAKER £729

Our high performance 3-way DIY loudspeaker featured in Supplement Nos. 3 & 4 is now available as a complete kit. Included in the kit are all drive units, crossover components and tag boards, precision engineered flat pack cabinet, wadding hardware etc. The cabinet has been designed to be extremely easy to build (even though there are 36 panels for the pair) requiring only wood glue and stretchy carpet tape to clamp the panel in place.

When built, the loudspeaker is comparable to those costing more than twice the price, with a transparency and openness in the midrange that is unmatched by most. The price for this entire kit, including VAT and p&p is £729.

Because some of the drive units in this kit are difficult to source we are offering a drive unit pack, which contains 2x Tonigen Ribbon tweeters, 2x MW-1145 midrange units, 2x MW1075 Bass drivers, all crossover components, tag board and terminals. Price is £420 in p&p.

K5881 SET OF TRANSFORMERS £220

£220

For those who want to build their own chassis and get the rest of the parts we are making a transformer set available. There are four transformers in all, weighing 12kgs.

1) Mains (1 off)

Secondary: 0-360, 1 x 6.3V centre tapped. Primary 220/240 or 110/120 - please state which on order form. Drop through fixing.

2) Output (2 off)

Designed for low distortion and broad load compatibility, these transformers use high quality materials and complex winding arrangements. The cores are centre-hole fixing to avoid corner flux concentrations, the laminations are thin and of best quality grain orientated steel. Output tapped 4Ω, 8Ω and 12Ω. Drop through fixing.

3) Choke

For smoothing of the H.T. line to provide best sound quality, a 5H choke that fixes under the chassis. Frame mounting.

300B SET OF TRANSFORMERS £430

£430

For those who want to build their own chassis and get the rest of the parts we are making a transformer set available. There are seven transformers in all, weighing 16kgs (35lbs)

1) Mains (1 off)

Secondary: 490V-0-490V, 6 x 5V, 1 x 6.3V.

Primary 220/240 or 110/120 - please state which on order form. Drop through fixing.

2) Output (2 off)

Designed for low distortion and broad load compatibility from the 300B, these transformers use high quality materials and complex winding arrangements. The cores are centre-hole fixing to avoid corner flux concentrations, the laminations are very thin and of best quality grain orientated steel. Output tapped 4Ω and 8Ω. Drop through fixing.

3) Intervalve/phase splitter (2 off)

So secret they are potted in a steel case! We can't tell you anything about these, other than Tim says they are very special. Drop through tags.

4) Chokes (2 off)

For individual smoothing of the H.T. lines to provide best sound quality, two 5H chokes that fix under the chassis. Frame mounting.

WARNING
THESE ARE EXPERT KITS, NOT FOR THE INEXPERIENCED.
THE VALVE KITS CONTAIN LETHAL VOLTAGES. WE CANNOT BE HELD RESPONSIBLE FOR ANY ERRORS ARISING FROM THE CONSTRUCTION OF THE KITS.

ORDER FORM

Please send your completed order form to: **WORLD AUDIO DESIGNS**, 64 Castellain Road, Maida Vale, London W9 1EX
 Tel: 071 266 0461 Fax: 071 289 5620

240/120 option - delete the voltage NOT required.

Valves included except where stated.

'BUILT' - we can supply the amplifiers built up and tested by an approved service, for safety and guaranteed performance to specification.

DESCRIPTION	ORDER No.	QTY	PRICES	
			UK (inc VAT & carriage)	OVERSEAS. (net)
K5881 20W budget valve amplifier				
KIT	K5881-K240/120	<input type="checkbox"/>	£395	£350
EASY BUILD	K5881-E240/120	<input type="checkbox"/>	£495	£450
BUILT	K5881-B240/120	<input type="checkbox"/>	£595	£550
optional top cover	K5881-C	<input type="checkbox"/>	£60	£50
transformer set	K5881-TR240/120	<input type="checkbox"/>	£220	£180
300B 28W specialised valve amplifier (prices do not include valves)				
KIT	300B-K240/120	<input type="checkbox"/>	£750	£650
EASY BUILD	300B-E240/120	<input type="checkbox"/>	£900	£800
BUILT	300B-B240/120	<input type="checkbox"/>	£1050	£950
optional top cover	300B-C	<input type="checkbox"/>	£70	£60
transformer set	300B-TR240/120	<input type="checkbox"/>	£430	£370
KLPI line preamplifier				
KIT	KLPI-K240/120	<input type="checkbox"/>	£295	£250
BUILT	KLPI-E240/120	<input type="checkbox"/>	£395	£335
KLS1 3-way floorstanding loudspeaker				
KIT	KLS1-K	<input type="checkbox"/>	£729	£650
Drive units and hardware	KLS1-D	<input type="checkbox"/>	£429	£370
KLS2 2-way, high definition, floorstanding speaker				
KIT (Satin Black)	KLS2-K	<input type="checkbox"/>	£295	£250
Mahogany veneer	KLS2-KM	<input type="checkbox"/>	£345	£295
Drive units	KLS2-D	<input type="checkbox"/>	£145	£120
Loudspeaker measurement mic and preamp + test disc	3382B	<input type="checkbox"/>	£440	£390

NAME: _____

ADDRESS: _____

POSTCODE: _____ TEL: _____

I enclose a cheque/postal order for £ _____
 made payable to **World Audio Designs Ltd.**

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

<input type="text"/>																			
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Expiry date:



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ANTON BRUCKNER
Symphony No.7 in E Major
North German Radio Symphony Orchestra; conductor, Gunter Wand
RCA VICTOR RED SEAL 09026 61398 2 (DDD/65.05)

● The eighty-one year old Gunter Wand now strikes a very frail figure as he comes to the podium, but as anyone who heard his performance of the Brahms First Symphony at this year's Proms will testify, this octagenarian is still capable of producing interpretations of the greatest fidelity and authority. The secret lies in the preparation, and in the kind of ethic embodied in the old term, *kapellmeister*. Though we tend to use the term somewhat condescendingly here, in Germany -

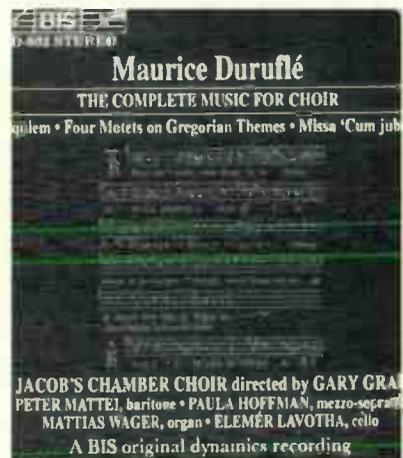
where the term originated, of course - the contribution of provincial music directors has been of fundamental importance since the time of Bach and Telemann.

Gunter Wand honed his conducting skills within this ancient tradition, as did many of the great Austro-German conductors before him. At its heart lies the notion that the music and the composer's wishes are paramount; that the conductor's role is to convey the musical experience as intended, not interpose his own personality between composer and audience. In recent years the rich and accumulated experience of Gunter Wand's career, working with the very best of the German provincial orchestras, has resulted in a series of remarkable recordings of the composers that have been so much part of his heritage: Mozart, Beethoven, Schubert, Schumann, Brahms and - above all, I would venture - Bruckner.

This glowing account of the Seventh Symphony comes from performances given over three days in March last year in the open but not over-reverberant acoustic, of the Musikhalle in Hamburg. The accompanying notes do not reveal whether one performance was used with errors corrected by other takes, or whether movements were plucked from various concerts. Whatever, it is of no significance for the end result is seamless and coherent, proof of Wand's clear-eyed view of the work, his meticulous attention to detail and painstaking preparation (apparently he still demands five rehearsals for a work which both he and his orchestra know inside-out) and his refusal to impose anything which is not implied by the score.

The pacing of this Bruckner Seventh is especially convincing, with Wand rightly perceiving the apex of the work as its majestic adagio, Bruckner's epitaph for his idol, Wagner. He was working on the movement's coda when he heard of Wagner's death and wrote in his diary, "And then I began to write the real funeral music for the master." Interestingly, at the climax of the movement, Wand eschews the cymbal, triangle and tympani which

were inserted by Bruckner after the first performance in Leipzig in 1884. He was pressurised into doing this by the conductor of that premiere, Arthur Nikisch, and by his pupil, Josef Schalk. It was typical of Bruckner to bow to such well-meaning suggestions but, as the booklet note points out, the question marks he placed alongside the glued-in strip of extra orchestration display the doubts he retained about its conclusion. In opting for Bruckner's original thoughts, Wand in no way lessens the impact of the moment; indeed, it is one of the high-points of what must be one of the finest Bruckner Seventh on record. An essential addition to any Bruckner collection.



MAURICE DURUFLE
Requiem Op.9/Four Motets on Gregorian Themes Op.10
Mass: 'Cum Júbilo' Op.11
Peter Mattei, baritone; Paula Hoffman, mezzo-soprano; Elemer Lavotha, cello; Mattias Wager, organ; St Jacob's Chamber Choir, Stockholm; director, Gary Graden.
BIS CD-602 (DDD/70.56)

● This generously-filled CD embraces all of Durufle's choral music, the Requiem of 1947 - his most popular composition by far - the Four Motets of 1960, and the Mass 'Cum Júbilo' of 1966: separated by nineteen years, yet linked by consecutive opus numbers. Durufle, you will have gathered, was not exactly prolific; barely a dozen works, despite living to the age of 84.

He was born in 1902 and enjoyed

Meet-Your-Maker

A reference guide on where to find Britain's manufacturers and what they make. (Some Distributors also listed).

ACOUSTIC ENERGY, 3a Alexandra Road, London W13 0NP. Tel. 081 840 6305.

Acoustic Energy manufacture the award winning Reference Series AE1 and AE2 loudspeakers and the new Aegis Series Model 1, all of which feature the unique AE metal cone drive units. The AE distribution division offers superb high end products from WADIA, GRYPHON, ENSEMBLE and TARA LABS.

ALCHEMIST PRODUCTS, 4 Rosebury Mews, London N10 2LG. Call us for a list of our dealers in many areas including:- London, Kent, Hampshire, Wilts, Milton Keynes and N. Ireland and for product information on the Kraken, Freya, Bragi, Odin, Genesis and more.

ALEMA UK LTD., 25 Montifore Road, Hove, BN3 1RD. Tel. 0273 202637. Audion * Edision * Andersson * (Trade enquiries welcome for our newly extended range).

APPOLLO, The UK based designers and manufacturers of high quality speaker stands and equipment racks have now added to their comprehensive range a modular system ideal for housing audio visual products and CD storage. Please send for our free brochure to Zenith Crown Ltd. Tipton Rd, Dudley, West Midlands, DY14 Tel. 021 520 5070. Fax. 021 522 2055. - All export trade enquiries welcome.

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AUDIIONOTE CO. Unit 1, Block C, Hove Business Ctr. Fonthill Road, Hove BN3 6HA. Tel. 0273 220511.

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DBS AUDIO, PO Box 91 Bury Saint Edmunds, Suffolk, IP3 0NF. Tel: 0284 828926 or fax: 0284 828026. The DBS6 loudspeaker kit, as designed by Dave Berriman and featured in Hi-Fi News Feb/March '92, is still available - only from DBS Audio. To find out what these comprise, cost and how to order plus any other information on DBS products please telephone, fax or write in to the above address and numbers.

DPA DIGITAL, Unit 7, Willowbrook Technical Units, Crickhowell Road, St Mellons, Cardiff, CF3 0EF.

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IAN EDWARDS, The Old Chapel, 282 Skipton Road, Harrogate, Yorks. Tel. 0423 500442. Somebody Somewhere must make better storage units for CDs, Music, LPs, HiFi, Books, etc. than Ian Edwards. BUT until he appears, why not send for the brochure showing a selection of HAND MADE units. To do this please send 3 x 2nd class stamps.

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KAL, 45 Old High Street, Folkestone, Kent Tel. 0303245005. Specialists in valve amps & Speakers. Now on demonstration: KAL VT4c/211. Other products are Alphonson, AMC, B&W, DPA and many more.

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RECORD OF THE MONTH

It's sobering to reflect that when William Alwyn recorded his Third Symphony for Lyrita some twenty years ago, the label founded by Richard Itter was the only one with the vision and commitment to record new British music by the likes of Alwyn, Rubbra, Finzi and Malcolm Arnold. While the Lyrita catalogue remains a cornerstone of the discography of British music, it no longer has to carry the flag alone. It has since been joined in the promotion of contemporary British music by the likes of Hyperion, Conifer, Nimbus, Virgin Classics and, of course, Chandos.

The music of William Alwyn has become one of the most recent of Chandos's explorations, under the baton of the prodigious and multi-

faceted Richard Hickox. And what marvellous music that exploration is bringing to light, in terms of symphonies, concertos and other orchestral works.

William Alwyn was born in 1905 and educated at the Royal Academy of Music where, at the age of fifteen, he was awarded scholarships in flute and composition. He was a professor of composition himself at twenty-one and continued in that post for thirty years. In 1936, Alwyn joined the legendary British Documentary Film Unit and proved especially adept at film scores: there are over 200 to his name. He also became a major figure in British musical administration and organisation, most illustriously as one of the founders of the Composers' Guild of Great Britain and as the vice-president of the

Society for the Promotion of New Music. Alwyn was also a gifted poet, linguist and artist. Witness the painting reproduced on the cover of the insert booklet accompanying this new recording of the Third Symphony.

Alwyn was a neo-romantic, but if his music employed traditional forms it was only to convey his own remarkable originality of thought. There is no striving to be self-consciously different: the harmonic, melodic and rhythmic language is wholly and immediately comprehensible; no outrageous demands are made upon the instruments. The originality is in the handling of these forces, in Alwyn's own imagination and in his highly distinctive and appealing musical voice.

WILLIAM ALWYN
Symphony No. 3/ Violin
Concerto

Lydia Mordkovich, violin; London
Symphony Orchestra; conductor,
Richard Hickox

CHANDOS CHAN 9187 (DDD/74.51)

● The Third Symphony was written to a commission from the BBC in 1955-56. The first performance should have been conducted by Barbirolli, long a champion of Alwyn's symphonies, but he was too ill to undertake the task and his place was taken at the Royal Festival Hall by Sir Thomas Beecham. The work was well received; Alwyn's fellow-composer, John Ireland, thought it the finest British symphony since Elgar's Second - quite an accolade.

In this three-movement work, Alwyn decided upon a compositional framework that divided up the twelve semitones of the scale into groups of eight and four. The first movement, for example, a vigorous, incisive piece of writing reminiscent of Shostakovich, employs the eight-semitone group with a central tonality of F flat. In the second movement, Alwyn sets himself the more taxing limitations of the four

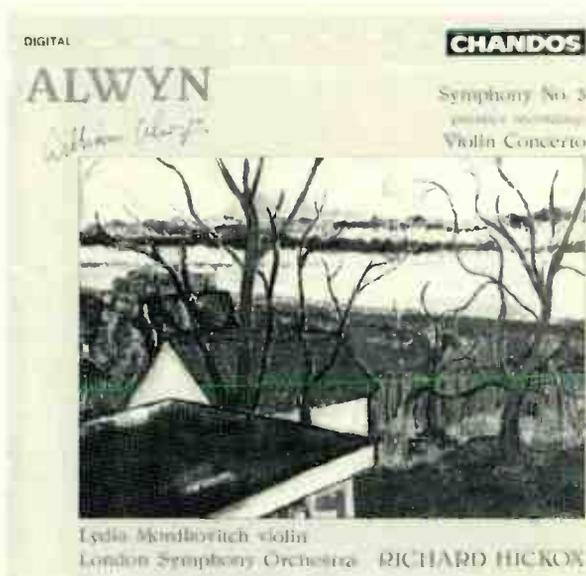
semitone group, but there is no denying the scheme works quite magically in this poco adagio. In the concluding allegro con fuoco, both groups are first used alternately and then combined in the coda to bring this tautly argued symphony to a close.

The Third Symphony perfectly illustrates Alwyn's own comment that

result, it remained unheard for some fifty years after its first performance - with piano reduction replacing the orchestral parts - at a wartime recital on March 3, 1940.

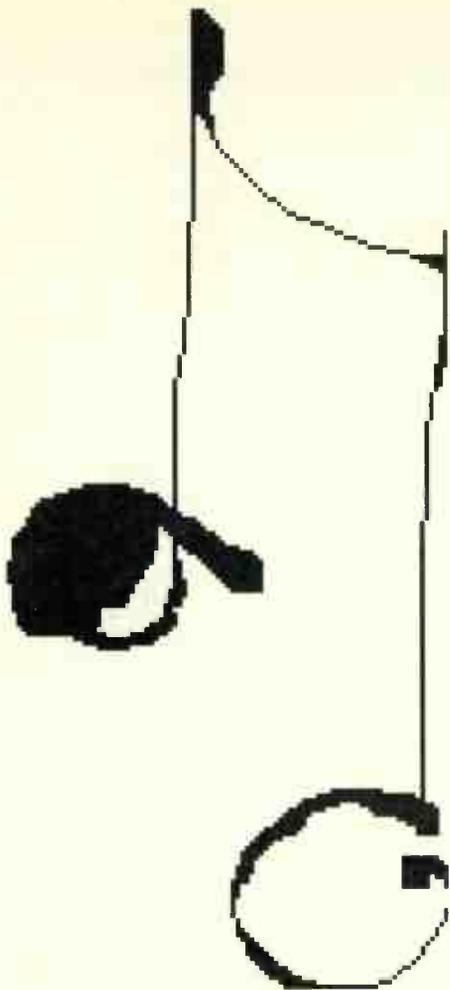
This first recording shows it to be a work of great melodic charm and invention, with some quite beautiful and virtuosic writing for the soloist. The serene slow movement is interrupted by a cheerful tune reminiscent of an Irish folk melody, while the finale is all dashing exuberance until a change to 3/4 time and a quietening to pizzicato strings and the ring of the glockenspiel. There is a fanfare on the brass and the work concludes with a final flourish from the soloist.

The playing here suggests that Lydia Mordkovich, the soloist, is fully persuaded of the qualities of the work: her contribution is passionate and persuasive, as well as technically exhilarating. Similarly, Richard Hickox directs both works with complete conviction, and a good deal of fire and imagination. The orchestral playing is first rate and the ample, spacious yet detailed sound from All Saints, Tooting, does full justice to these brilliant scores. An important issue but, more critically, one which brings Alwyn's music vividly alive.



"All symphonies are dramas - dramas of contrast and emotion, whether (composed) by classical composers or romantics."

It is coupled on this generously-filled CD by the Violin Concerto which, unlike the Third Symphony, did not prove to be to the BBC's tastes and was rejected for the Promenade Concerts, despite the enthusiastic advocacy of Sir Henry Wood. As a

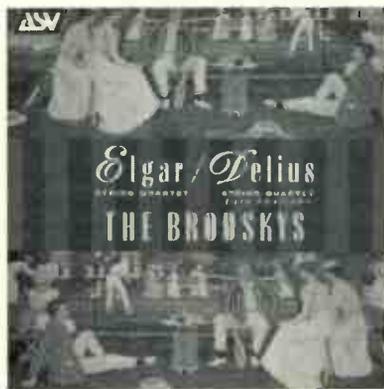


a musical education very much in the French 'cathedral' tradition. He was taught organ by Toumemire and Vieme, and composition by Paul Dukas (of 'Sorcerer's Apprentice' fame). Like his contemporary, Olivier Messaien, Durufle became resident organist of a Paris Church - in his case, St Etienne du Mont and retained the post for most of his life. Again, like Messaien, he gained a professorship at the Paris Conservatoire. But there the similarities end, musically, at least: both shared a profound religious faith. Where Messaien went on to explore new sound worlds and modes of expression, Durufle maintained an archaic style that drew heavily on themes from Gregorian chant, was greatly influenced by his French predecessors, Faure, Ravel and Debussy, and acknowledged none of the great shifts in twentieth century music.

Though derivative, Durufle's music does not want for individuality or sincerity, and there is no denying he creates some sweetly appealing sounds. As with Faure's setting, his Requiem is more concerned with reconciliation than retribution (he emulates Faure by omitting the Dies Irae). In the Four Motets, he quite brilliantly adapts the rhythmic patterns of Gregorian chant, as laid down in

long-standing tradition at the Abbey of Solesmes and, in the Mass 'Cum Jubilo', the unison melodic line is entirely derived from the Gregorian melody long associated with this text.

The performances here, both from the young soloists and the equally youthful choir, are committed and well-projected and their American director, Gary Graden, displays an evident empathy with Durufle's highly idiomatic style. As with all BIS issues, it is also very naturally and spaciouly recorded, in St Jacob's Church and with just two Neumann U89 microphones and a Fostex DAT recorder: a minimalist approach that produces maximum results.



SIR EDWARD ELGAR
String Quartet in E minor
Op.83

FREDERICK DELIUS
String Quartet

Brodsky String Quartet.
ASV DIGITAL CD DCA526 (DDD/55.35)

● In the last months of his life, the gramophone became Elgar's chief source of consolation. During one of his visits to the composer, his friend, Troyte Griffith, put on the Stratton Quartet's recording of Elgar's solitary string quartet. After the slow movement, Griffith commented: "Surely that is as fine as any movement by Beethoven?" Elgar answered: "Yes it is, and there is something in it that has never been done before." Griffith inquired what it was.

"Nothing you would understand, merely an arrangement of notes."

A modest assessment of a movement that distills so many emotions into its less-than-ten

minute span. It was music that had a profound effect on Lady Elgar at the first private performance of the quartet in January 1919; sadly, within a year, that self-same music was being played at her funeral in the little Catholic chapel in Malvern.

Elgar had turned inward, and into the abstract world of chamber music in the wake of the horrors of the First World War. He produced three undeniable masterpieces: a Violin Sonata, a Piano Quintet and the String Quartet recorded here. For some reason, the last has never been accorded quite the status of its companions, a misjudgement which this committed and eloquent performance wholly corrects.

This was the Brodsky Quartet's first recording, a John Boyden/Tony Faulkner production from 1984 whose warm, detailed and well-balanced sound has been recaptured in this new CD transfer. The playing, too, has retained its impact, powerfully expressive and emphasising the melancholy and anguish of the slow movement. These qualities are shared by the performance and recording of the Delius, another work of splendid isolation which Delius completed in 1916. It is lighter than the Elgar (even folk-like in the finale), but the ebb-and-flow of the work is well understood by the players and their use of rubato is finely judged.

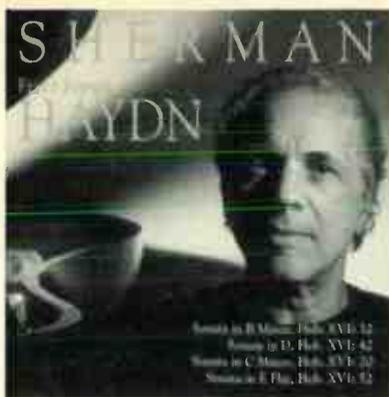
The Delius remains even less well known than the Elgar, although you may be familiar with its slow movement, subtitled 'Late Swallows', and arranged for orchestra by Eric Fenby. Solitary works these may be, but they surely rank among the finest string quartets written this century. It is difficult to conceive of the case being more persuasively argued than in this ASV reissue.

FRANZ JOSEF HAYDN
Keyboard sonatas No.36 in C minor Hob.XVI:20/No.47 in B minor Hob.XVI:32/No.56 in D Major Hob.XVI:42/ No.62 in E flat Major Hob.XVI:52

Russell Sherman.
TROY031 (DDD/69.17)

● A taste for the keyboard sonatas of Haydn is something I've enjoyed

Classical



acquiring of late, principally through the series of recordings on Philips by Alfred Brendel, but also through one-off recitals such as this by the American pianist, Russell Sherman.

While not possessed of the soul-searching nature of, say, the Beethoven sonatas, these works reveal a good deal about a composer whose prime role - at least in his orchestral works - was to provide music to entertain his aristocratic employers. That it was also music of supreme quality was almost incidental, although Haydn's genius did not go unrecognised in his time.

Haydn's career spanned the late Baroque-the world of Carl Philip Emmanuel Bach - and musical revolution sparked by Beethoven (and included the entire, brief lifespan of Mozart), so it is hardly surprising that these sonatas embrace both archaic and late 18th century avant garde styles. The important thing, it seems to me, is to take each one on its merits and not to seek out influences, or pointers to the past or future, but rather to uncover the personality within: the 'private' Haydn. We know he was a pious man, and a humane and civilised one, but also possessed of a delicious wit. We also know that 'Papa' Haydn, as he was affectionately known, had his periods of inner turmoil and uncertainty, which manifested themselves in the works of the 'Sturm und Drang' period. You can hear that in the urgency of the B minor sonata and, perhaps, the resolution of the conflict in the benediction, like the andante of the C minor. The gentle side of Haydn's nature is evident in the tender poignancy of the first movement of the D Major. But these are not grandly declamatory statements; the emotional range is contained, subtly expressed within a formal framework which is what makes the process of discovery all the more rewarding.

While Russell Sherman's playing may not have the hypnotic quality of Brendel in this music, or project such a strong personality, his playing is no less considered or characterful. He treads sympathetically in Haydn's world, scrupulous to the letter and

the spirit of the score. The scale, too, is finely-judged: not excessively and unnecessarily intense, but by no means lightweight. The end result - which is agreeably recorded - may not be as idiomatic as Brendel but is no less revelatory.



ARNOLD SCHOENBERG Gurre-Lieder/Four Orchestral Songs Op.22

Marita Napier; Yvonne Minton; Jess Thomas; Sigmund Nimsgern; Kenneth Bowen; Gunter Reich; BBC Singers; BBC Choral Society; Goldsmith's Choral Union; Gentlemen of the London Philharmonic Choir; BBC Symphony Orchestra; conductor, Pierre Boulez.

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● Schoenberg was already well-advanced along the serialist road when, in 1900, he began work on the vast musical pageant that is Gurre-Lieder. Far from anticipating the twelve-note world of his pupil, Webern Schoenberg looks back to Wagner and, most specifically, to the lush eroticism and symbolism of Tristan.

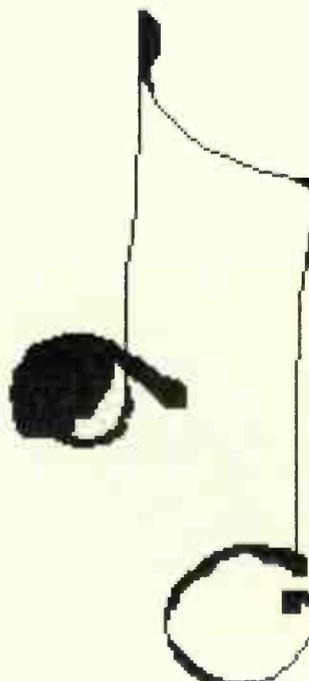
Essentially, the work is a sequence of concert tableaux for soloists and gigantic choral and orchestral forces, setting German translations of poems by the Dane, Jens Peter Jacobsen, which draw on ancient Danish myth and legend and combine the age-old themes of secret love, death and damnation. In most respects, it is a wholly conventional work, if writ large, and some Schoenberg scholars have tended to dismiss it as an aberration. But disassociate Gurre-Lieder from the rest of Schoenberg's output and you have a work of ravishing sensuousness and luxuriance (Gurre, incidentally, is the castle where the tragedy is played out).

The sumptuous beauty of the score is perhaps best expounded by Ozawa's recording for Philips, but it is the Boulez version-originally on CBS and here reissued by Sony Classical-which best brings out the heroic qualities of

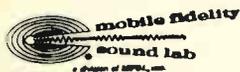
this musical epic. The drama is powerfully delineated, with the Wagnerian overtones strongly underlined. Tempos are generally slow, warmly expressive without becoming excessively indulgent.

Of the soloists, Yvonne Minton is outstanding, especially in the most famous of the Lieder, the Song of the Wood-Dove. Boulez shapes this magical music wonderfully well, slowly building to its darkly ominous climax. Yvonne Minton is also the splendid soloist in the Four Orchestral Songs of 1913-16, which set texts by Ernest Dowson (one) and the German lyric poet, Rainer Maria Rilke (three).

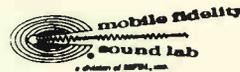
Graced with superb orchestral playing and choral singing, and enhanced by vivid, atmospheric recording and the kind of broad sound-stage demanded by such forces, Boulez's performance of Gurre-Lieder remains compelling. The transfer from the 1975 and 1982 CBS masters - done using Sony's 20-bit SBM (Super Bit Mapping) technique - has resulted in a sound quality of great freshness and translucency, one that fully accommodates this colossal late Romantic anachronism of a score.



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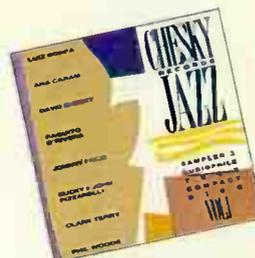
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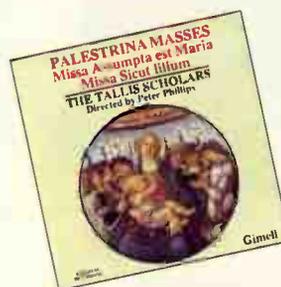
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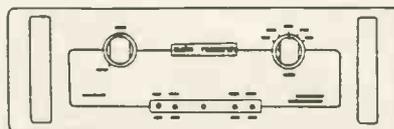
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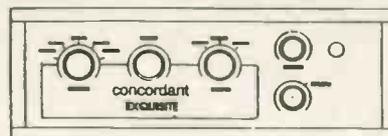
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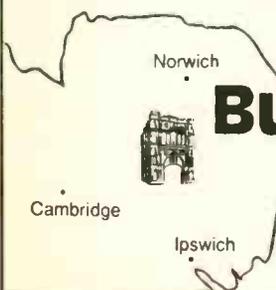
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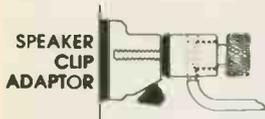
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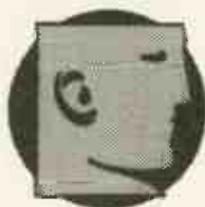


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CREEK CD60	£500	16-bit player. Excellent rhythmic properties and a superb bass performance.	Apr'92
QUAD 67	£790	A new breed of Quad. Remarkable solidity and lacking nothing in verve or excitement.	May'93
SUGDEN SDT 1	£850	Airy and spacious with a rare quality of ambience.	Mar'93
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DPA DIGITAL T-1	£795	Superbly clean and detailed sounding transport when sync-locked to DPA's converters.	Jan'93
M'MEGA DUO CD2	£1850	Seriously priced, serious CD using Philips' CDM-9 PRO mechanism. Exemplary.	Apr'93

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DPA LITTLE BIT II	£450	Building on the qualities of the original Little Bit, the 'II' is clear and open.	Sep'93
DPA DACS	£450-2K	The current masters of DAC-7, their DACs offer superb performance at a range of prices.	
SUGDEN SDA-1	£650	16-bit Philips based. A wide, open window for the transport to flow through. V. neutral.	Jun'92
P. T. ORDINAL	£695	Pure sound, smooth and free from hardness. One of the best at any price.	Jul'93
M'MEGA DUO PRO	£1050	Spacious and dynamic presentation, with a detailed and informative manner.	Apr'93
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P. T. DA CAPO	£1350	Pink Triangle's own one bit DAC reaches new standards in digital. One of the very best.	Jan'93

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THORENS TD166	£270	Fitted with Rega RB 250 arm. Good basic deck, with tweakability.	Jun'92
MICHELL MYCRO	£397	Inbetween the Synchro and Gyrodeck, the Mycro has superb midband clarity and poise.	Apr'92
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SME 309	£568	Based on IV and V: Aluminium armtube and detachable headshell. High end value for money.	Jan'93
SME SERIES V	£1232	A masterpiece of precision engineering, with a cohesive sound.	May'92

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NAKAMICHI DRI	£780	'Domestic' deck with Nakamichi sound quality, and manual head azimuth adjustment.	Jun'93
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World favourites

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H/K TU9400	£300	Fairly basic facilities, but sound which beats anything at the price.	Jul'93
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NAD 302	£160	Lots of insight and detail, but could sound a little rough in the wrong system.	Jan 93
PIONEER A-300X	£200	Exceptionally sweet mid and treble, plus the superb dynamic range of the A400.	Dec'92
DENON PMA-350II	£220	Powerful and with deep rhythmic bass drive.	Sep'93
H/K HK6550	£349	Thoroughly refreshing, tonally neutral amplifier with a realistic price tag	Nov'92
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MICHELL ISO HR	£850	Impossible not to recommend. What more does your vinyl want?	May'93

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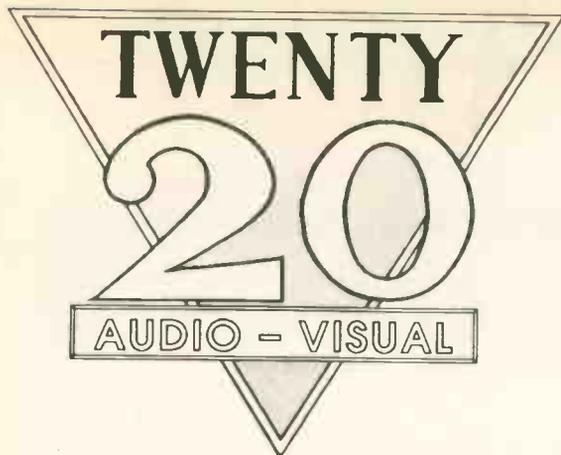
SUGDEN AU41P	£530	100 Watts of smooth, detailed, full bodied sound. And at a bargain price.	Apr'93
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MICHELL ALECTOS	£1800	The Alectos have a lucidity and three dimensional realism that is rarely attained.	Dec'92
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ROGERS LS2a2	£209	So far the most correct speaker we have discovered at the price. Sweet and even natured.	May'92
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PROAC RES I S	£918	Small box design. Can convey the spirit, drive, and passion of music in a small room.	Jul'92
APOGEE CENTAUR	£1200	Hybrid ribbon design. Great imaging and detail. Good value for panel fans.	Jul'92
TANNOY D700s	£1970	Dynamic and powerful. Needs a good clean power amplifier for best results.	Sep'93
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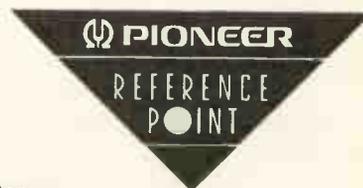
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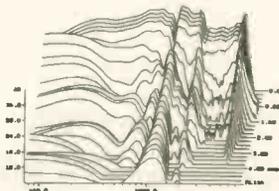
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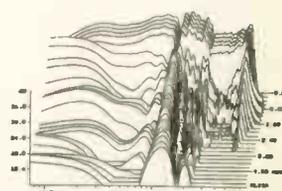
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Test Results
Enclosure - Standard



Test Results
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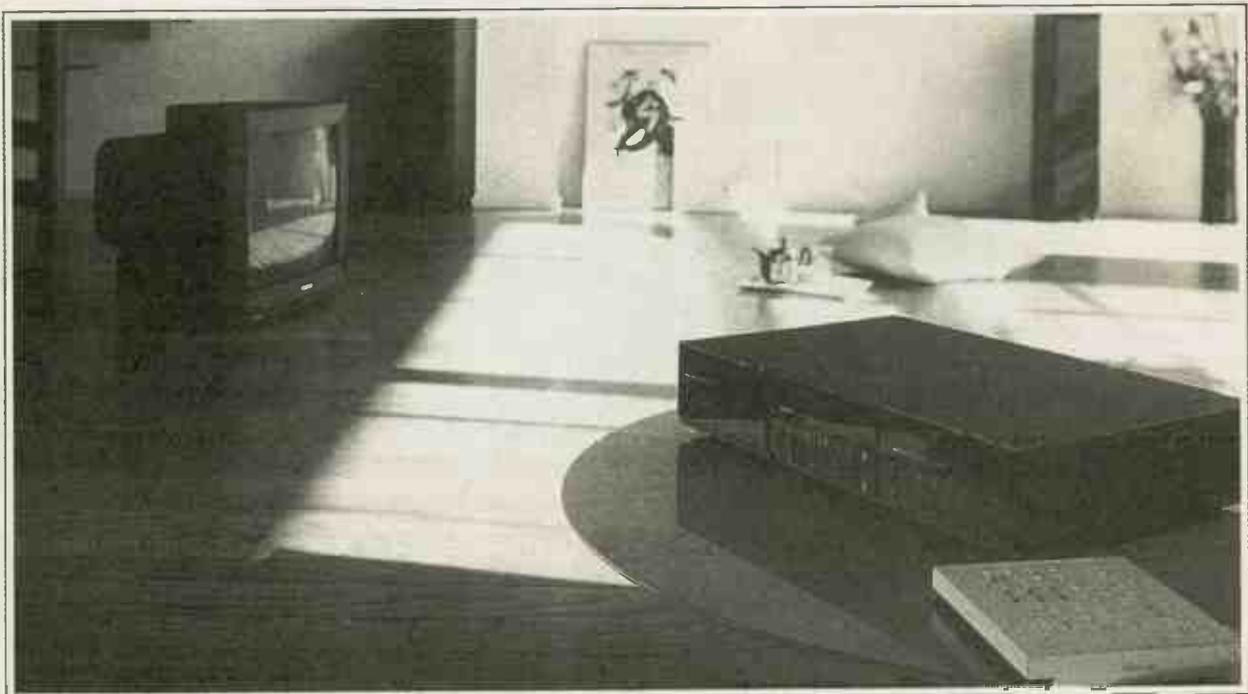
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TECHNICS AUTOMATE

Technics have automated their new RS - BX747 cassette deck, but Noel Keywood finds they run into problems

Technics' new RS-BX747 tested here, like Sony's latest Dolby S decks, attempt to raise the perception of quality available from the standard cassette, by offering potentially high quality at an affordable price; the RS-BX747 costs £299.95

This deck follows on from a successful showing in the marketplace made by the RS-BX404 and 606 decks. It offers just about every important feature needed to wring good sound quality from the humble cassette, a medium devised by Philips in the early Sixties for dictation purposes. Almost exactly thirty years after its

launch, the cassette can be coerced into giving even DCC a run for its money in terms of sound quality, as any Nakamichi owner knows, but it takes a fair bit of technology - and the 747 has most of it.

The list of features is a long one, but I was surprised by one apparently major omission, that of a dual-capstan transport. These are complex but usually necessary to suppress flutter, a rapid speed variation that dirties the sound. All the same, the '747 has superb speed stability even with its single-capstan arrangement I found.

More obvious and popular with anyone who used this deck was its cassette loading system. It reminded me of the Venus Flytrap. When a fly alights on its hinged leaves, they spring shut. The 747 has a door that similarly shuts automatically directly a cassette is dropped into it, sensing its arrival in an uncanny fashion. Unlike the Venus Flytrap though, the 747 returned the cassette in

unmangled form every time.

The cassette disappears deep into this recorder and, with no backlighting, it isn't easy to see. That was a pity, because the 747 has other tricks up its sleeve: it changes its reeling speed automatically too, in response to some concealed stimulus. I suspect the reeling motor

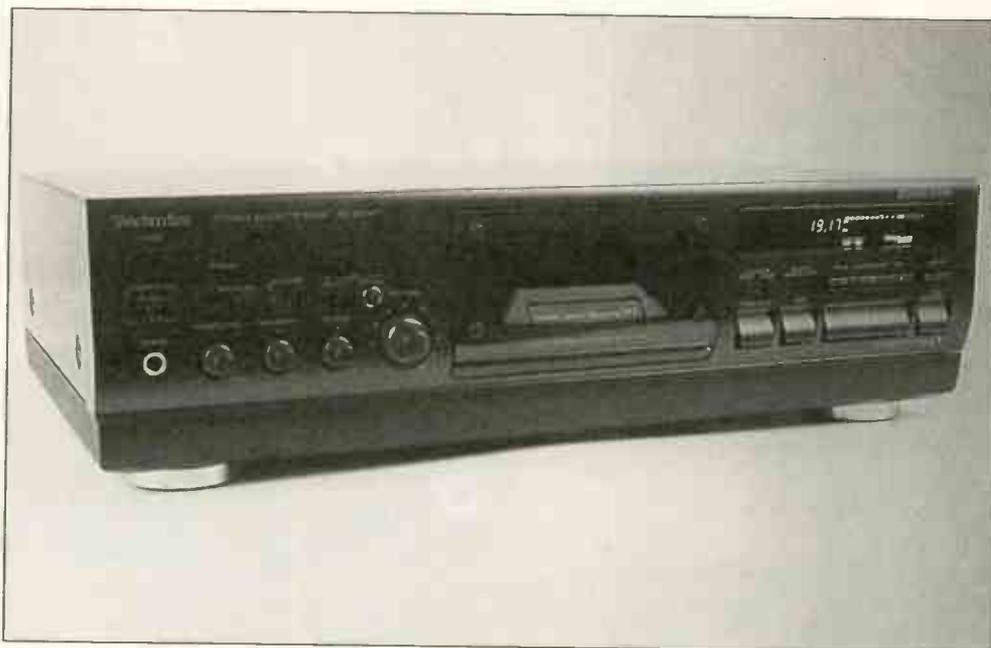
showed the 747 is hissy both in its record amps and in its replay amps. And if there is one thing cassette doesn't need, it is added hiss!

As well as auto-tuning Technics fit the deck with Dolby B and C hiss reduction systems, and Dolby HX Pro treble overload prevention system. The latter

wasn't very effective in the face of over-biasing, which caused the deck to overload early with strong treble signals.

This is a three-head deck, having independent, 'siamesed' record and replay heads. So a recording can be monitored whilst it is being made to check quality.

Technics cassette decks come in a restrained,



senses torque, for it would start slow, speed up, slow down as if there was a reason to be cautious, then speed up again. It always sensed the impending end of a tape and slowed down for it, coming to a halt with a gentle click. This sort of logic control is an impressive party trick, but it is peripheral to good sound quality of course.

To help get the latter Technics have used a complex tape tuning system that adjusts record equalisation as well as bias and record gain (sensitivity). But incorporating this feature has introduced more problems than it has solved. Adjusting record equalisation in addition to bias is, theoretically, the best way of going about things, but at a practical level it makes little difference to overall performance and, in any case, the balance it effects in terms of overload levels is open to question. The trade off on the 747 has been excessive noise; tests

perhaps I should say sombre, charcoal grey. Although well finished they feel a little light and insubstantial compared to the increasingly sturdy products of British manufacturers, but then no one in the UK attempts to make a cassette deck of this complexity at such a low price. The controls wobble a little, as if they turn on flimsy spindles and the record level display is small and cramped. In fact, the knobs were small too and, curiously, Technics have given them all a violent action. Turn the balance control a few degrees and one channel goes dead; turn the bias control a few degrees and sound quality alters drastically. It was all a little odd, as if they have brought in an ergonomics expert who has decided to re-arrange everything. Even the cramped record level display seemed to match the smallness of the knobs. The overall impression this recorder made on me during use wasn't especially positive.

SOUND QUALITY

Replay hiss was audible, but it wasn't intrusive above the hiss of pre-recorded tapes. I did find however that the machine is very hum sensitive; a small CD convertor transformer 12in away induced hum, suggesting the need for shielding. There was no shortage of seemingly precise, even 'sharp' treble - this deck plays pre-recorded tapes with surprising insight. Yet it lacked bass slam, or much sense of lower midrange dynamics or drive. As a result, the 747 came across as thin and sharp sounding with pre-recorded tapes.

Hiss became intolerable with ferric tape, Dolby out, whereas a Nakamichi will record onto a good formulation like Maxell XLIS and turn in quite acceptable

results under similar circumstances. I found that Dolby C just had to be used, which rather compromises transients, since this noise reduction system does alter sound quality. And yet again, a hard sharp quality to the deck's sound was apparent, not ameliorated by a bass end seemingly out on vacation.

I can't say matters were any better with chrome or metal tape, although with the latter record levels could be pushed up to maximum and Dolby B used instead of C. Auto tape tuning always gave a sharp sound, but a small twist on the bias control nailed this problem. But I had to ask myself why Technics had bothered with such complexity in the tune system when a quick twist of the bias control was enough to tune tapes in satisfactorily. The likely answer is that complex gizmos sell

cassette recorders, or so their Japanese marketing department believes.

The RS-BX747 is a peculiar machine in many respects: peculiar in its performance due to excessive hiss, peculiar in its ergonomics and peculiar in its sharp, thin sound. This is no successor to the RS-BX404 or 606; it's one of those strange brews the Japanese come up with every now and then, just to keep us all guessing. If Technics produce a simplified version of the '747, without the gizmos, it could well be more successful ●

Technics RS - BX747 £300
Panasonic (UK) Ltd.
Panasonic House,
Willoughby Road,
Bracknell,
Berks. RG12 8FP
Tel. 0344 862444

MEASURED PERFORMANCE

The first sample of the RS-BX747 I tested was so noisy (10dB worse than normal) that I asked for a second. Often this only serves to confuse the issue, even though in theory at least it offers manufacturers a chance to rectify any possible fault and also ensure that if a problem exists it doesn't reach production, or at least is eradicated.

In this case a second sample winged its way in from Japan, but I'm afraid to say the basic faults remained, though they were better suppressed. Noise had been lessened, but the '747 remains 5dB hissier than its rivals, hardly an impressive result.

I noticed a 25Hz tone existed on the output of the first sample too and it was present on the second. I suspect the motor control electronics.

Why is the '747 hissy? Probably because Technics have built in an unusually sophisticated and theoretically correct method of tape tuning. When I pressed the ATC button (Automatic Tape Calibration) up popped the legend EQ. Tape tuning systems almost never vary EQ; it's too complex a business and not entirely necessary in my view. Trouble is, varying EQ means altering high frequency gain in the record amps (much like adjusting a treble tone control). It has to be carried out electronically, by a Voltage Controlled Amplifier and almost certainly, Technics have used a noisy one.

Noise in the replay amplifiers wasn't especially low either, so somebody seems to have thrown the rule book out of the window when it came to designing this machine. I suspect it is possible to alter high frequency gain within the record amps without incurring such a large noise penalty.

Otherwise, the RS-BX747 works well enough. Tests showed that the single-capstan transport has better speed stability than a Nakamichi, which with cassette tape results in a clearer, purer sound, due to a lessening of wow and flutter modulation products. The speed stability analysis clearly shows an unusually thin spike at right (the test tone), with just two capstan peaks either side. That

shows just how pure a tone is reproduced. There's no doubt that this transport will not waver at all with piano; it holds rock steady speed.

The tape tuning system was questionable in its complex workings. It sets bias first, balancing off low frequency against high frequency tape overload limits, but favouring the former over the latter. Then record equalization is adjusted for flat frequency response and finally sensitivity is set to ensure correct Dolby tracking. Tests showed that there was little difference between options of High, Standard and Low bias settings. Even though frequency response invariably came out flat, even with difficult tapes like dual-layer TDK SA-X and MA-XG, a little manual tuning often produced a better result.

Summarising, the heads Technics use are good ones, giving flat frequency response and reasonably high overload levels when recording. But the tape tuning system, whilst admirably comprehensive in its actions, introduces too much noise.

Correct head azimuth and replay equalisation contribute to an accurate replay frequency response, enabling the RS-BX747 to replay pre-recorded tapes accurately in terms of total balance. High frequency output extended right up to 20kHz (-2dB). Again, however, the replay amps were noisier than usual, measuring -55dB instead of the usual -60dB. That's an audible increase in noise and an unwanted one with cassette, a medium where every effort has been made to suppress this innate weakness.

The record level indicator was very accurate, even if it is small and cramped. Calibrated to the IEC standard, it hits -8 maximum, which accords exactly with the limit of a top quality metal like TDK MA-XG.

Output measured 450mV, enough to drive all amplifiers, except passive pre-amps linked to an insensitive power amplifier.

The RS-BX747 is highly specified and works well in all areas except one: it is noisy. This deck is simply too complex for its own good. If Technics introduce a simpler model (6477) without automatic tuning - and without the noise - then it could be a good deck. **NK**

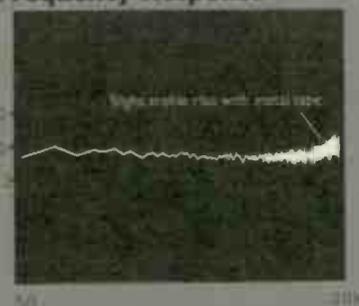
REPLAY (pre-recorded tapes)

Frequency response (-2dB) 30Hz-20kHz
 Speed accuracy +0.4%
 Hiss (70µs, Dolby out) -55dB

RECORDING (blank tapes)

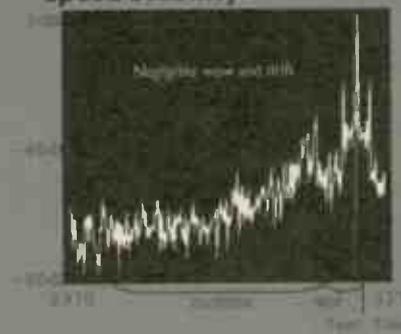
Frequency response (IEC Primary Ref.)
 ferric (IECI) 35Hz-18kHz
 chrome (IECII) 35Hz-17.6kHz
 metal (IECIV) 35Hz-20kHz
 Separation (1kHz) 60dB
 Distortion (15Hz) 0.4%
 Hiss (70µs, Dolby out) -52dB
 Speed variations (DIN total) 0.03%
 Flutter energy (3-3.13kHz) -26dB
 MOL/SAT (IEC Ref) 315/10k
 IEC I (ferric) 3.5dB/-9dB
 IEC II (chrome) 3.5dB/-9dB
 IEC IV (metal) 3.5dB/0dB

Frequency Response



30 Hz 20 kHz

Speed Stability



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WHY A HI-FI TUNER NEEDS A GOOD AERIAL

For best sound quality, a hi-fi tuner must have a strong signal of around 1mV minimum.

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INDOOR AERIALS

Simple pin-up wire types (dipoles) only provide enough signal within a few miles of a transmitter. Otherwise they are noisy and prone to receiving multipath signals that produce distortion.

We've tested powered indoor aerials and expensive hi-tech designs costing up to £50 and find they give no more signal than simple, horizontal dipoles, either of the wire type or of rigid aluminium. Their only benefit is smaller size. It is better to buy a rigid aluminium dipole and mount it high, upstairs on a wardrobe, at the top of a stairwell, or similar.

LOFT AERIALS

Loft aerials have the advantage of height and, if there are many elements, gain as well, so they provide a stronger signal than a simple dipole indoor aerial. In areas of reasonably high signal strength - which usually means within ten miles or so from a transmitter, a loft aerial may be satisfactory.

Usually with three elements, a director rod (short), reflector rod (long) and dipole element in between, loft aerials are also directional: they must be pointed toward the transmitter. They reject interference and reflected signals better than dipoles, giving a cleaner signal to the tuner.

The best mounting position is high up in the V of the roof, away from metal objects like water tanks. A long downlead will be needed, preferably of good quality to minimise signal loss.

BALCONY & WALL MOUNTING AERIALS

Balconies in blocks of flats have the advantage of height, giving a much stronger signal. However, the balcony should face the transmitter for good results.

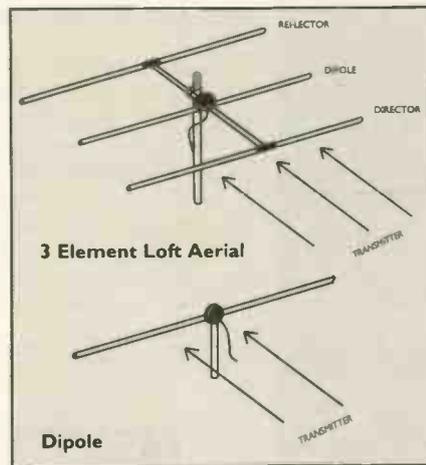
It is often possible, if a little difficult, to wall-mount an aerial on a stub mast outside a window, but you may need consent to do so. Hanging out of a window can be dangerous, so consider using a professional installer. And make sure the wall faces toward the transmitter of course.

OUTDOOR AERIALS

In most locations, only an outdoor aerial will give a signal strong enough and clean enough (i.e. free from interference and multipath reflections) to provide true hi-fidelity from a good tuner. Benefits are height (the higher the better), crucial for

obtaining a strong signal free of reflections, and number of elements, which determine both gain and directionality.

Multi-element aerials are used in areas of medium to weak signal strength, meaning up to around forty miles from a transmitter. Any further away is judged as a 'fringe' area and will demand even more elements.



ALL-ROUND AERIALS AND WHIPS

Whip aerials, vertical dipoles and all-round aerials (curved horizontal dipoles) provide less signal than a simple, indoor dipole (i.e. negative gain). They are suitable only for areas of high signal strength.

Although whips and curved dipoles offer all-round reception, this means they provide little rejection of reflections, interference and distant stations. They are not especially suitable for hi-fi use.

AERIAL AMPLIFIERS AND ROTATORS

Aerial amplifiers are useful only at the masthead to overcome losses in a very long downlead. They are also used to provide enough signal for distribution around a house.

These roles apart, amplifiers boost noise and rubbish from an aerial by the same amount they boost wanted stations, giving no gain in quality, even though the signal strength meter of a tuner might go up. Not recommended.

Rotators are used to swing a directional aerial around, to receive more stations. A simpler solution is to have two aerials pointing in different directions, with their outputs dplexed together or, for more signal but less convenience, twin

downleads with an aerial switch at the bottom.

ATTENUATORS

When it's necessary to use a directional aerial to cut down reflections from tower blocks, but the aerial then gives too much signal (i.e. more than 10mV), an in-line attenuator can be used to prevent tuner overload.

AERIAL INSTALLERS

The best and overriding reason for using an installer is personal safety; roof work is very dangerous. Installers are also very quick and well equipped; DIY may take the large part of a day. Local installers should know about area-specific problems, the location of repeat and fill-in transmitters, and such like - all matters that are likely to be a mystery to most people.

Finally, good installers should have a Field Strength Meter that not only enables them to see whether an aerial is giving the required result, but can prove this to the satisfaction of the customer. Around 1mV is wanted, meaning powerful stations will come in higher (say 3-5mV) but weak ones a bit lower (0.3-1mV). If for no other reason, knowing that the aerial works properly is enough reason for using an installer.

Discuss this matter with them first though. In some areas, it may be impossible to obtain such a strong signal, no matter what aerial is used; get a variety of opinions if necessary.

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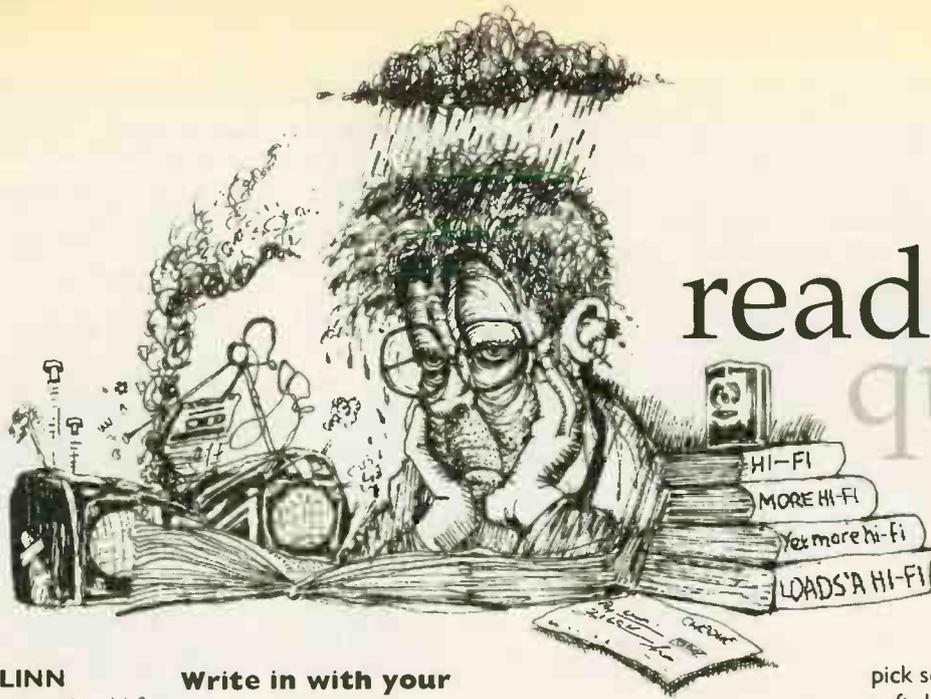
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readers' queries

RETURN TO LINN

I have only just returned to hi-fi proper after buying a system nine years ago- A.R. Legend and Linn LV V, Rotel RA820B and Heybrook HBIs. The return was mainly due to an acquaintance offering me a Linn Akito which I bought and had fitted - I was stunned with the results (using an Ortofon OM10 super cartridge). However, it has now highlighted shortcomings in my system which I will have to put right as finances allow. My present system consists of: A.R. Legend, Akito, Ortofon OM10 super, Rotel RA820B, Heybrook HBIs rigidly fixed to Linn Kan stands and wired with QED79 strand.

I like listening mainly to Rock. My listening room is approximately seventeen feet square by nine feet high with one wall (the one the 'speakers face) having a patio door virtually its whole length. The floor is woodblock on

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

concrete, as a consequence it is rather "bright".

I feel that the weakest links are the cartridge, amplifier, loudspeaker connections and the tweeters. I am looking for a less clinical, warmer sound. I would also like to, if possible, build or modify components myself (I am a carpenter and

joiner so the 'speakers present no problems).

Any suggestions? I am looking from the angle of greatest cost effectiveness.

**Malcolm R Coulson
West Glamorgan.**

The Ortofon OM10 super is a very smooth and clean sounding cartridge, so I doubt if this is the cause of the clinical sound of your system. However, both the Rotel amplifier and the HBI loudspeakers may be responsible for adding some sharpness or edge to the sound. The easiest way to solve this and considerably upgrade your system at the same time would be to try a new amplifier. The new Denon PMA-350II, reviewed in our September '93 issue, has a fine phono stage with a

smooth and powerful sound. Integrated amplifiers with good phono stages are becoming increasingly difficult to find, so this one is certainly worth an audition.

I would suggest that you built one of the very good kit loudspeakers from either Wilmslow Audio, IPL Acoustics or The Speaker Co., but none of these companies are exactly local to you, making an audition difficult - and I wouldn't advise buying any loudspeaker without first hearing it. If you do decide to take a risk,

pick something with a good soft dome tweeter. On the whole, these tend to give sweeter results than metal domes. You could certainly build the boxes yourself, but be careful to stick to the recommended dimensions as they are critical to the correct operation of the loudspeaker.

One final thing that may be worth doing is to take your Ortofon cartridge into a hi-fi dealer with a stylus microscope. They will be able to tell you whether it is excessively worn and in need of replacement. If you do want to upgrade it, you can't go wrong with any of the Goldring 1000 series, the 1022GX being the best value for money in the range, but the Ortofon OM10 is certainly good enough for the time being. **DB**

GARRARD ZERO 100

Having fiddled with electronics many years ago in my teens I find your magazine a very enjoyable and informative read. It has also set the dominant D.I.Y. spark alight once more and I am at present having a go at building your 'speaker design, which I hope will perform in my modest system purchased a year ago (the silver lining of a black cloud.)

Although my system is CD fronted, what I seek to gain from your knowledge concerns the vinyl side, as broadly speaking I am a 'vinyl virgin.'

Recently, I decided to dig out my small LP collection and a Garrard Zero 100 SB with a parallelogram arm I bought

Continued on page 121... ▶▶



The popular Ortofon OM10, still a good cartridge



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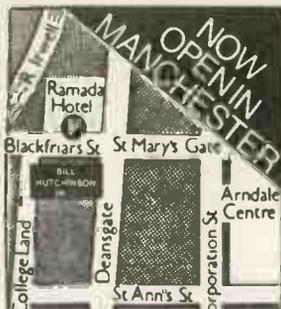
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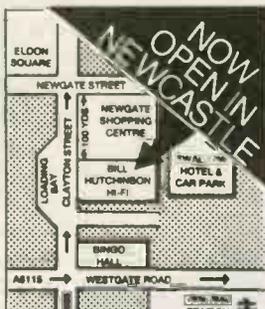
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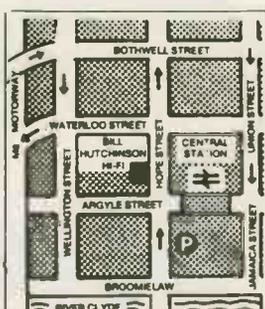
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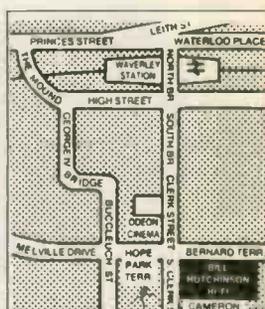
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nine years ago for £25. I used to play this through a Philips D8644 'ghetto blaster.' Dusting the deck off, I plugged it into my amplifier and immediately got a buzz from it. Sadly, not the sort from enjoying music off vinyl, but an annoying constant buzz through the 'speakers. I have tried it with a

recollection its structural integrity was minimal, and neither platter nor motor are up to today's standards.

Unfortunately, I couldn't backtrack and find any details for fitting a cartridge, though the principles are the same as any other. I suspect, however, that the headshell had a thoroughly idiosyncratic fixing method which would need

screens are not connected to it, forming a loop.

As Eric suggests, it isn't really cost effective to restore the Garrard, except as a working museum piece, as it were. **NK**

BECOMING MORE OPEN

My system is a Rotel RC 960BX and RB 960BX pre-amp and power amp, both four months old, plus a Sony X55ES and an AR Basic turntable with an A&R E77 cartridge. It feeds a pair of Musical Fidelity MC6 loudspeakers.

My problem: the sound is very good, but I would prefer it to be more open. The sound stage is excellent from wall to wall.

My other problem: I am 74 and aiming to become a centenarian, so

require reliability (and more cash than a basic pension provides!) What I hope you might advise on is whether I could replace the RC960 with a 'tube' or semi-'tube' pre-amp, to achieve this open sound, or maybe you might suggest an all electronic pre-amp, price range £400-500.

I had originally thought of

above this bracket I suspect.

I would be very much obliged for your comments. Oh yes - my taste is classical and opera, and for LP, even if an add-on disc stage is essential.

E J Frith
Tynemouth.

Since your taste is for classical music and vinyl, I would concentrate on the turntable end first. Fundamentally, the AR should survive, and could cope with a better arm than the fairly ordinary affair that it came with. I would explore the possibility of a Rega RB300 or an Alphason Xenon and a better cartridge - a much better cartridge! Good options are any of the Denons (from around £70 up), The Goldring GX moving magnets (see our recent review) or maybe the Ortofon Quattros or MC15. This should give your front-end a whole new lease of life, especially if you buy a phial of oil to lubricate the AR's bearing every now and then and a dozen spare drive belts so you can replace them once a year or eighteen months. Then upgrade the Rotel to say a Sugden 41 or 51 series - but either will cost more than the money you currently have available. Start at the beginning. **EB**

SYSTEM MATCHING

I have recently acquired a pair of B&W DM 610i 'speakers. The following day B&W information arrived on my doorstep showing your review of the 'speakers from your September 1991 magazine.



Reviving a vintage turntable could cost as much as a new Rega Planar 2.

different amplifier and my old 'ghetto blaster' with the same results. What could be the cause(s) of this and its cure? Should there be a ground wire between deck and amplifier? It does not have one currently and probably most important of all, is it worth repairing and how is the arm/cartridge set up?

Your answers will be gratefully received.

Chris Canham
Suffolk.

It's most probable there is a missing earth connection somewhere betwixt cartridge and lead-out wires. Have you checked the connections to the cartridge in the headshell? Frankly, I can't see that the Garrard is worth servicing, since the cost of having someone take it to bits will rack up to half or more the price of a new Rega Planar 2, for example, which will be far better. While the Garrard's arm was a clever idea, in attempting to solve one problem - that of tracking a record in a straight line instead of an arc - it introduced another. From my

surgery. Dustbin time, really. **EB**

Ouch! I loved the styling of the Zero 100S and even the idea of its parallelogram arm, which did successfully reduce tracking distortion. But as Eric says, it sacrificed rigidity in the process and, I believe, the miniature bearings were a problem. All the same, even the mention of a dustbin hurts! I think of all those people who, convinced the 401 was useless because it rumbled badly, threw theirs away. Now who is kicking themselves?

The Zero 100 had a headshell slide whose rear connections could become faulty: check them and the fine connecting leads. Record decks must always be earthed through to the amplifier, and the cartridge body must be earthed too, but earths must not be duplicated or a hum loop will result. There were two methods: either earth the deck's metalwork to one of the signal lead earths (a la Rega), or lead a separate earth back for the metalwork, making sure the cartridge



The B&W 610s deserve a good budget amplifier.

Musical Fidelity, Sugden and Michell, but I never seem to be able to get a price for the latter; it's more than likely

Generally the review was extremely good. The one

Continued on page 123...



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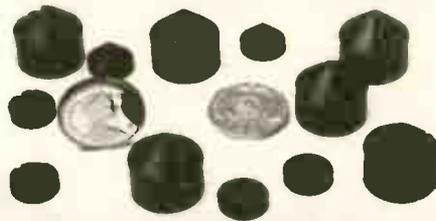
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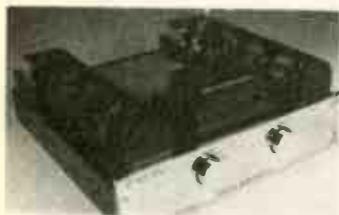
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Continued from page 121

statement that your review made was "I can only warn you that if you match the 'speaker carelessly you could suffer a thin relentless sound." I have a JVC amplifier A-GX2/A which has an output of fifty five watts per channel driven into eight ohms from 40Hz to 20kHz. I have read that the 610s can be considered as a four ohm 'speaker. As a novice when it comes to the technical side of hi-fi and not having a trained ear for sound, would my system be classed as careless matching? If the answer is positive please would you recommend a suitable amp (within the budget range) to replace the JVC A-GX2/A.

**M W Barker
Fleet,
Hants.**

First of all you do not need a trained ear to know what sounds good or bad to you. What I would suggest you do is to cart your B&Ws along to a local Hi-Fi Dealer and have a listen to your speakers with a more modern budget amplifier and see if you can hear an improvement. Both the Harman Kardon HK6150 and the NAD 302 are excellent amplifiers, more than capable of driving your speakers, and reasonably priced at around £160. From the information I could glean out of JVC your amplifier is a budget model, around 8 years old. Budget amplifiers have improved a great deal since then and I would expect both the Harman and the NAD to offer a considerable improvement.

If you are still unsure in the demo room a good dealer should be able to offer you the facility of a home demonstration where you can compare the best of the new amplifiers with your own JVC side by side. If you are still not convinced that an upgrade would be worthwhile, celebrate the saving you will have just made by adding a few new albums to your collection. **DB**

UPGRADING TO NEUTRALITY

My system is :
Linn Sondek/Basik/K9,
Cambridge Audio C100 pre-amp, Cambridge Audio A70

power amp x2 (bridged and used as mono) Aiwa F800 cassette deck (very rarely used)

Ruark Rhapsodys

My problem is I have £1000 to spend on upgrades, but I don't know which order to do it in. I was considering fitting a Lingo, but don't know if the amp/rest of the system are up to it. My tastes in music are the likes of Pink Floyd, Genesis, REM, Enya, and Classical.

I am also interested in a neutral sound that brings the group into my room.

**Mr Reith
Salisbury ,
Wilts.**

Considering the front end you are using, I'd be inclined to leave it as is, and concentrate on the amplification. My

rather tame for your taste, but with the Sondek front end it should balance out. Alternatively, try the Sugden AU41P/AU41C combination reviewed in the same group test, which falls better into your system financially.

Of course, there's always the Linn Pretek and Powertek combination for around £800. If you like the 'Linn sound', this could well be for you, but the Ruarks may not be the perfect speakers for this combination.

The classic solution to this problem, on the other hand, would be to pick up one of the many secondhand Ittok arms around, and a new Linn Klyde moving coil cartridge. The remainder of the money could usefully go towards a phono head amp such as the

and right bass, and vice versa. Could one amp be used to drive both parts of one speaker?

Finally, if one doesn't use a pre-amp and merely uses the two integrateds, what happens when using a splitter to put the turntable through both phono inputs? Should it be earthed to both amps or just one?

I hope over the coming months to have a go at building your 300B triode power amp, so long as I can afford it, but for the time being would appreciate your answers on the above. I feel this information will be of interest to many as a cost effective way of managing upgrades now that people are being freed from the dogma that has blighted hi-fi for the last 20 years.

**Andrew Baird
Tyne and Wear.**



Quad's 34/606 pre/power will give a smooth relaxed sound

system currently runs through a C100 pre-amp, but only one A70 power amp, so I know this quite well, and it's leaving me wanting more clarity and a better image.

You don't actually say what you feel the problem currently is, so it is difficult to suggest a cure. Starting with the cheapest option, have you tried using the C100 as a passive pre-amp? Passive and active outputs are provided at the back, and you'll find a great difference in sound quality. You'll lose something in bass power unfortunately, but if this isn't a problem, you'll gain in openness and clarity of detail.

If this doesn't solve your problems, try the Quad 34/606 combination reviewed in our April issue. Personally I think you'll find the Quads

Michell Iso. To keep within your budget, you could try the Audiolab 8000A integrated amp instead, which has an excellent phono input stage. It's worth taking your amps down to a local dealer and auditioning them against the Audiolab to see what you think. **SC**

BI-AMPING ADVICE

I want to try bi-amping with two Musical Fidelity AIs, and would like your advice on some aspects.

Firstly, is it OK to use these with a preamp such as the Rose RV-235 via one of their line inputs?

Secondly, as an alternative to using one amp for both tweeters and the other for both bass units, I have heard it suggested that one ought to use one amp for, say, left treble

The Rose pre-amp would most likely be excellent for this application, and even has two sets of outputs especially for bi-amping. However, we suspect you have misunderstood bi-amping. The power amplifier stages are paralleled up and work into a bi-wireable loudspeaker with its links removed. Just one pre-amp is used, otherwise you'll have to turn both volume controls at once and keep them in perfect synchronism, which is hardly practicable! A good solution with two integrateds is to use them as power amps by turning volume up to full and feeding the output of the preamp into the auxiliary, tuner, or tape inputs.

In answer to the second part of your query, the best way to use these power amps would be as if they were monoblocks so that one amp drives the right channel speaker and the other amp the left. Using them in this way will ensure that the maximum channel separation is maintained, and you will get better imagery and staging between the speakers as well as the increased control you get from using a power-amp on each drive unit. **SC**

TUNER TROUBLES

My partner and I have two hi-fi systems, each of which has its own FM tuner - in one case an Hitachi FT-5500 MkII and in the

Continued on page 125...

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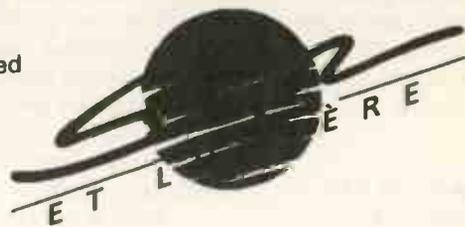
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other a Sony STS-370. We are reasonably happy with both. The two are fed from a single roof-mounted aerial, with the down-lead routed through a simple splitter purchased from Tandy's. The signal remains so powerful that we have to use the switchable signal attenuator in the Sony to eliminate audibly obvious distortions caused by aerial overload.

This is not, of course, a problem. It would be easy and cheap enough to buy an attenuator even if the tuner did not already have one built in and with the Hitachi we do, indeed, sometimes use an attenuator equipped with a small potentiometer to regulate aerial input, though I have my suspicions as to how 'hygienic' a practice this is

Our problem is as follows - both tuners have signal strength read-outs calibrated in dBs, with 0dB indicating a 'no signal' condition. The readings of the tuners of the same aerial input are, however, considerably at variance and the instruction manuals offer no help at all as to what the dB values actually mean in terms of millivolts or microvolts of signal.

With some music, especially of the compressed type that can make background noise quite difficult to hear (even when it is at a measured level which would be judged intolerable in a Radio 3 transmission) it is difficult to judge by ear alone the best compromise between minimal noise and subjectively evident distortion caused by too high an input from the aerial. It would obviously help a great deal if one could use the dB values to establish the optimum attenuator setting. Can you comment or, better still, offer a solution?

Tim Horrocks
Birmingham.

Unfortunately, two different ways have been devised to express signal strength in dB and your tuners just happen to use both of them! The easiest to comprehend is that used by your Hitachi, which simply expresses signal level relative to a 1µV (terminated/p.d.) reference level - so low as to appear to be a no-signal condition, as you put it. This makes a x1000 step up, or +60dB, equivalent to 1mV.

Sony told me that the STS-370 uses the IHF (Institute of High Fidelity, an American body) alternative method devised, the Standard says, to overcome rating problems. It uses the notion of power into the aerial to harmonise ratings for different impedances (300ohm and 75ohm), a problem more evident in the U.S. where both types of aerial are common. This uses a horrid unit known as a femtowatt, which is one thousandth of one millionth of a watt, or about the power of a flea coughing.

A femtowatt into the Sony is equivalent to 0.55µV, which puts its 0dB reference input level -5.2dB below that of the Hitachi - so that's the difference between the two scales, plus the reason why they are different.

As a rule of thumb, signals over 10mV (80dB on the Hitachi) are best attenuated down, since they are likely to cause front-end overload and intermodulation, even though quoted limits are higher. For optimum results, do not let the signal sink below 1mV (60dB on the Hitachi), since this represents full quieting for most tuners. Some stations will be more powerful than others; choose attenuation so that most lie in the 1-10mV range. Noise will become obvious below about 200µV.

Beware of sources of distortion other than front-end overload caused by excessive signal. Tuners can transmit from their aerial input. Running two from one aerial could cause a problem with spurious response; try switching one off when checking. The diagram gives signal levels in dB and what they mean. Bear in mind that tuner dB scales are approximate, although the Hitachi's can be relied upon. **NK**

MORE "BITE" FROM CD

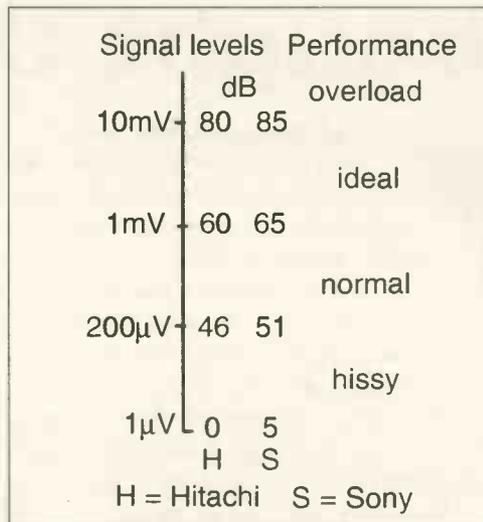
I have recently discovered what my two year old Harbeth HL-P3 'speakers can sound like by replacing my Cyrus II and PSX integrated amplifier with a pair of Audiolab 8000M Monoblocks and Audiolab 8000C pre amplifier. This combination Bi-wired with Linn K20 'speaker cable gives an excellent fast and easy going sound with good imaging which meet my musical tastes for Classical and adult Rock.

The 'speakers are sited on foundation designer stands.

The rest of my system comprises a Meridian 200 CD transport and a Deltec PDMI Series II/The Power DAC convertor, Technics ST-G70L

If it's 'bite' you want, the DPA converter ought to be supplying it. The problem, I suspect, therefore lies in the transport rather than the converter.

My own fave rave for a while has been the Sugden SDT-1/SDAI transport and DAC combination, which come in at a little over your budget, but the transport makes a good partner for DPA converters, so you needn't buy both at once. Another transport I've recently had



tuner, Ariston Pro Deck with Linn K9 cartndge.

I listen mainly to CDs and the radio. I wish to replace the CD and the convertor in order to get more bite - which I think is also important when listening to classical and especially string quartets.

So far I have only short listed the new improved 8000DAC convertor which I have not heard yet. But then I take the risk to find myself with a nearly single brand system with neat boxes piled on each other like a midi system. Is this acceptable for serious listening in the case of my system? Could you suggest better alternatives? My budget is £1500.

Yves Pinton
Vincennes,
France.

through my hands is the Teac P700, which would also supply a little more additional bite, but not as much as the Sugden. Since you're in France, don't forget the Micromega transports, which turned out a very good, detailed, crisp performance with a DPA Little Bit II in my flat not too long ago. **EB**

Mission's Cyrus amplifiers are highly regarded by us; in your case I strongly suspect that the Audiolab monoblocks, which we use and are well acquainted with, have more grunt and it is this that the Harbeth HL-P3 speakers appreciate, since they reach a low impedance of 3.2ohms at low frequencies, demanding good current delivery; in this the Audiolabs excel. **NK**



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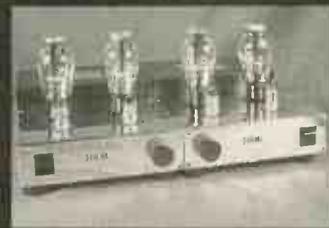
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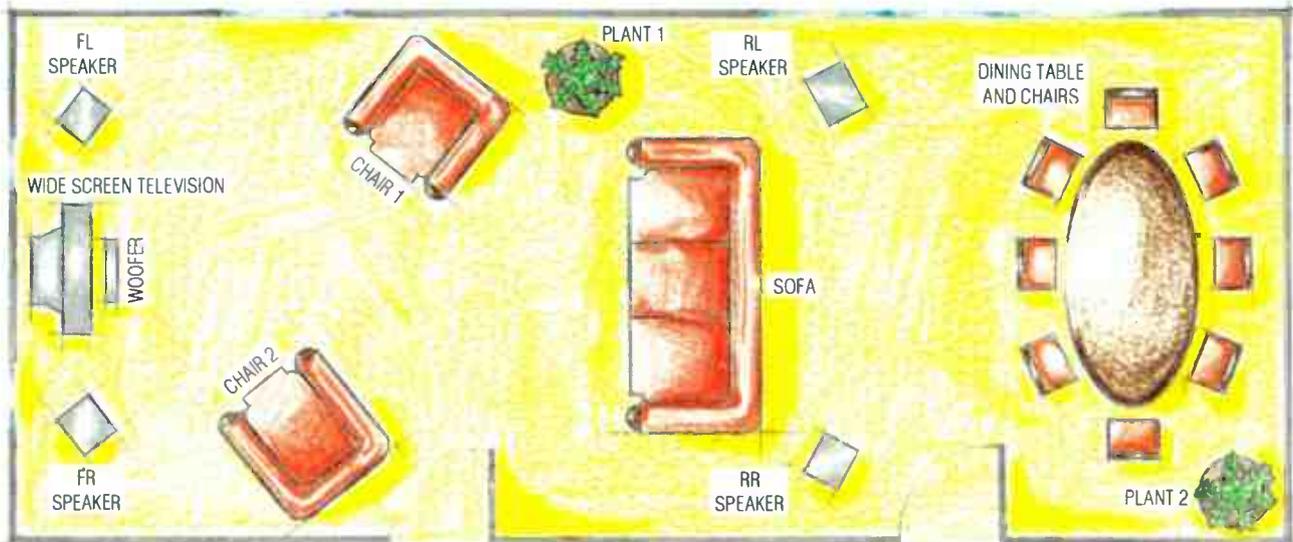
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