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Cover Photograph by
Paul Hartley Studio 071-482 3768

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DIY SUPPLEMENT

DIY SUPPLEMENT NO.7

This month's return to DIY features a phono head amplifier, kit transmission line loudspeaker from IPL, a feature on rare and exotic power valves for audio amplifiers, two excellent computer design packages for loudspeakers and much, much more.

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MORE FROM MISSION

Things have been busy in Huntingdon of late, as Mission expands its Cyrus range. Latest additions to the family include an integrated CD player, the DAD-7, a modular amplifier system, and some new speakers (jumping on the Home Theatre band wagon).

The 752 Reference Tower, which made its debut at the Las Vegas CES is a 2-way, reflex loaded floorstander using a 30 litre, time aligned enclosure. Technological innovations include the use of an 'Aerogel' bass/mid unit.

Catering for the Home Theatre market is the new 73 series, consisting of the 73C centre channel speaker and the 73I compact 2-way monitor.

The CD player uses some of the technology from the range topping two box machine, such as the top-loading transport (Philips CDM9) and the 18 bit DAC with 8x oversampling filter. All this in the standard Cyrus die-cast 'shoe-box' chassis.

Ease of upgradeability (and brand loyalty) is the key feature of the amplifier system. The pre-amp offers seven analogue inputs including plug-in phono modules for MM/MC. The 50watt per channel power amp can be mono'd at the flick of a switch to give double the power and high current delivery, when used with the PSX-R supply. All the other new electronics can also be upgraded with this 'intelligent' power supply.

Prices for the electronics and the Home Theatre speakers are, as yet, unavailable as we go to press. However, the 752 Reference Towers will shortly be on sale at £499.

Mission Group, Huntingdon, Cambridgeshire, PE18 6ED. Tel: 0480 451777.



ROGERS INTRODUCE A NEW STUDIO

For almost 50 years Rogers have been producing loudspeakers for both the professional and domestic market.

The latest addition to the range is the Studio 5, a mid-sized, two-way bass reflex design, housed in a 20 litre veneered cabinet. The bass/mid-range unit is a 165mm polypropylene driver mounted in a rigid die-cast magnesium chassis which crosses over to the treble unit at 3kHz, this being a 19mm soft dome with a vented voice coil former and ferro fluid damping.

The Studio 5s are available in a choice of walnut, black ash and rosewood veneers. Prices start at £699.

Swisstone Electronics Ltd, 310
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Surrey, CR4 1HX.
Tel: 081 640 2172.



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World Radio History

QUAD ESL-63 UPGRADE FROM EAR

Hot news from Tim de Paravicini of EAR, terror of Huntingdon and valve genius extraordinaire. He's decided to embark upon hi-fi's equivalent of climbing Mount Everest without oxygen. Tim has announced his intention to build a valve direct-drive amplifier for the Quad ESL-63 electrostatic loudspeaker. Yes, it has been done, in the States by Dynaco, but Tim claims he can do it better. It's a fantastic idea, in the broadest sense of the word.

At one go, a valve direct drive amplifier rids the ESL-63 of its input transformers and protection electronics. Needing to swing no less than 3,000volts at a rate of up to 1000V/ μ sec, the engineering involved seems unusually dangerous, but in fact it amounts to transmitter design practice, so it is not without

precedent. However, the amplifier must be integrated with the loudspeaker in one box for safety, so it will sit within a plinth that acts as a base for the Quad. By eliminating the internal circuits



of the Quad, as well as any need for a conventional external high current power amplifier, the valve amp idea offers an apparently near-perfect solution to the driving of electrostatic loudspeakers. Only a pre-amp is needed to feed each loudspeaker.

When contacted, Ross Walker, managing director of Quad said: "****?!?!?!+****".

Sound quality is likely to be awesome, just like the engineering involved. Price will be fairly awesome too: around £3,400 per pair, including installation. Tim says the units should be ready by the end of the summer, 1994.

Additionally, he will be producing a self-powered subwoofer for the ESL-63, valve driven. Price will be around £1000/pair. Wistful transmitter designers should contact -

Tim de Paravicini, EAR Ltd., Unit 11, Stukely Meadows Industrial Estate, Huntingdon, PE18 6ED. Tel: 04804 53791.

MOREL PUT MUSIC FIRST

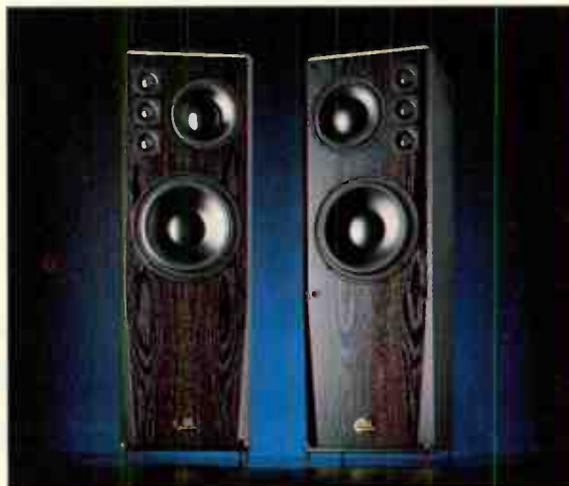
Morel, manufacturer of high-tech loudspeaker drive units, has introduced some new high-end speakers. The Music First 705 is the first to be launched in the forthcoming 700 series.

The 705 is a three-way floorstanding design, engineered using all-Neodymium magnets. The enclosures are finished in satin black oak veneer.

Unique linearising technology promises clear, accurate reproduction in the bass and mid-range, as well as three tweeters per channel handling the highs.

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Real Music Distribution, Unit B12, Riverside Business Centre, Bendon Valley, Garrett Lane, London, SW18 4LZ. Tel: 081 875 9388



WHARFEDALE RECRUIT

A surprise appointment in the revitalisation of Wharfedale was the recent recruitment of Malcolm Blockley as Managing Director. He brings enormous experience from running Hi-Fi Markets and NAD, which he helped start. Malcolm joins Stan Curtis, ex-Cambridge Audio, and John James, from Mission, on the board at Wharfedale.

Malcolm Blockley's primary responsibility will be to oversee sales, we were told. And sales, it seems, are not a problem for Wharfedale nowadays. "We are shipping container loads of Karaoke loudspeakers to the Pacific Basin countries", Stan Curtis, Technical Director, told us. "There's more demand for our Modus Vivendi AV loudspeakers than we can easily satisfy, and a new range of Modus Vivendi hi-fi speakers are due onto the market within the next few months."

Wharfedale are now run by the Verity Group, whose chief executive is Farad Azima, founder and managing director of Mission. All the same, there is no management crossover between the two companies and Wharfedale operate independently although, needless to say, the group pools its buying power. Wharfedale does not now build loudspeaker cabinets; they come from Touchwood cabinets, also a part of the group. However, the company does still manufacture its own drive units, and will continue to do so.

There are plans for a range of electronics, and doubtless the company will in due course produce CD players and such like. Also due for revival as a top-end brand is the Leak name and we believe there has been discussion about a short run of replica Troughline valve tuners. Unfortunately, it was felt that if manufacture was recommenced, demand would be so great that it could not easily be stopped, forcing Leak to carry on where it left off thirty years ago.

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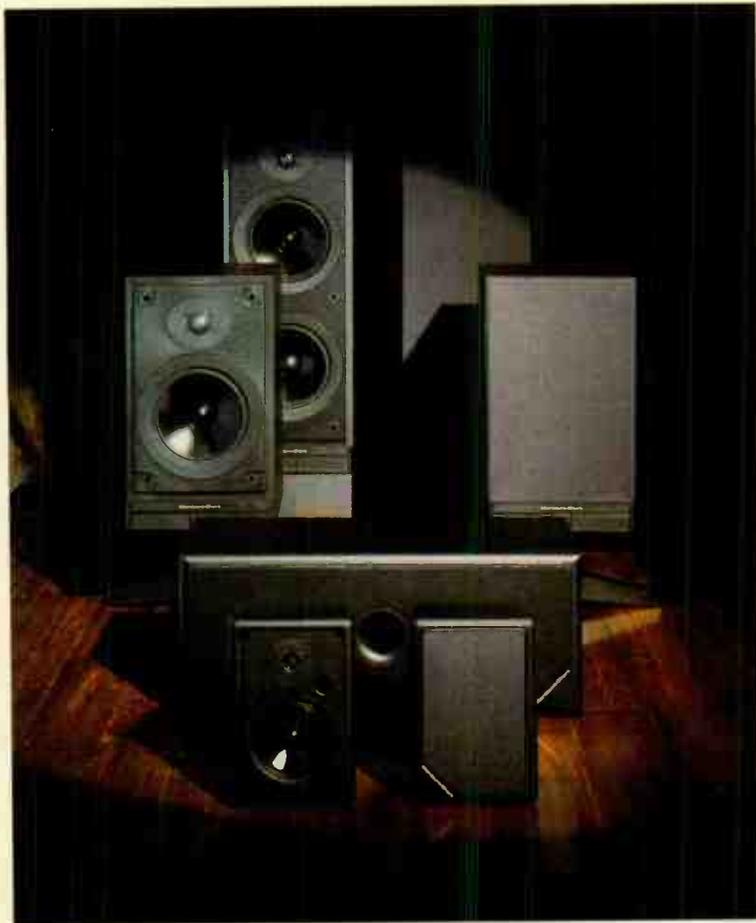
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MORDAUNT-SHORT ENTERTAINS AT HOME



"What?" I hear you ask - a hi-fi Hostess trolley. Well, no, actually. Those clever men (and women) at Mordaunt-Short have come up with some new speakers for their home entertainment series.

The stand mounted HT30 uses Mordaunt's 200mm MCS (Moulded Cone and Surround) bass/mid unit and the newly designed 25mm aluminium dome tweeter. The larger HT50 also uses the new tweeter with two 200mm woofers in a floorstanding enclosure. Both speakers feature magnetic shielding so you can put them next to your TV without sending it crazy, and also Mordaunt's Positec overload protection circuit, so that Mr Bond won't blow up your speakers along with everything else at the end of the film.

Prices are £149.99 for the small ones and £279.99 for the big ones.

Mordaunt-Short, 3 Ridgway, Havant, Hampshire, PO9 1JS. Tel: 0705 407722.

ELECTROCOMPANIET

Esoteric Audio Imports have been awarded the sole U.K. distribution for the Electrocompaniet range of high quality amplifiers. These are designed by Rock musician Per Abrahamsen and have been built in Norway since 1977.

The range comprises two dual-mono power amps (250 and 100watts) two phono pre-amps, one line level pre-amp, a separate phono stage and an integrated amplifier.

Prices range from £561 for the phono stage to

£4,972 for the exquisite limited edition Anniversary pre-power models.

Esoteric Audio Imports, 6 Castleman Road, Chichester, West Sussex, PO19 4TL. Tel: 0243 533030.

HARMAN TAKE A GAMBLE

The Las Vegas CES show was the venue chosen by Harman Kardon to introduce three new additions to its range of hi-fi separates - the FL8400 five disc CD player (£399), the AVR15 audio/video receiver (£699) and the HK3350 stereo receiver (£299).

The CD changer, as Harman want us to call it, features bitstream technology and a heavy duty mechanical chassis. For those of us wishing to join the Home Theatre revolution, the AVR15 provides Dolby Pro-Logic, multiple audio and video inputs and an integral AM/FM tuner, while the HK3350 receiver caters for the more traditional hi-fi user, providing a 30watt amp and a digitally-synthesised AM/FM tuner in a compact package.

Harman Audio, Unit 2, Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts, WD6 5PZ. Tel: 081 207 5050.

BASS FOR MINIS AND MIDIS

Jamo has just launched a subwoofer loudspeaker system aimed the owners of smaller hi-fis.

The SW8 bass reflex subwoofer and Sidekick satellite speakers will retail for £149.99 (the Sidekicks are available separately for £54.99).

The subwoofer uses two 4" drivers in a 14 litre enclosure. Frequency range is quoted at 50 to 200 Hz for an 8 ohm load. The Sidekick's come with a built-in mounting bracket for ease of placement and feature a 3" drive unit spanning the frequencies from 100Hz-20kHz.

JAMO UK Ltd, 5 Faraday Close, Drayton Fields, Daventry, Northants. NN11 5RD. Tel: 0327 301300.



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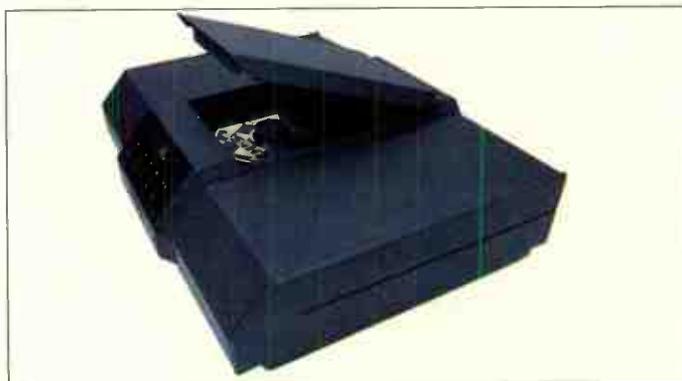
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CYRUS THE KING

Mission recently introduced their new Cyrus range of electronics. We first caught a glimpse of their complex and expensive die-cast alloy casework whilst visiting a sub-contractor about our own chassis work. Impressed, we've been pursuing them ever since! Noel Keywood tracked them down and tested them. Robert Wilson - a Cyrus fan - had a long listen.

MISSION CYRUS FM7 TUNER

A good tuner can bring music and information from around the globe into our living rooms. I listen to the radio a lot as a result; it has so much to offer compared to the TV. For me a good tuner is a Godsend and that's what the Cyrus is - a very good tuner.

Mission's build quality is superb. The casing of the Cyrus just oozes class - and for a very good reason. Whilst a majority of manufacturers use a particular build method that is satisfactory and, of course, cost effective, Mission break the mould. They use an expensive and complex diecast chassis possessed of curves and forms not possible using any other method. Castings are extremely strong and rigid too; as a result this tuner feels unusually sturdy. The soft green backlit display was soothing on the eye and ergonomically a dream, like the rest of the Cyrus' facilities.

Tuning can be carried out either automatically or manually. The lazy only have to press 'seek', and for those of us who still prefer to use clutch pedals and the like, Mission have provided a wonderfully weighted rotary tuning knob. When you reach your desired station the signal meter bar-graph pans across the

display until the lock indicator lights up, as does the stereo symbol (if the broadcast is transmitted in stereo). Pressing the 'Fine' button the display changes to Magic Eye Mode so that you can accurately tune-in using 10kHz steps. It's easier to do than explain, and so is using the seven presets, but all this is clearly laid out in Mission's excellent instruction manual. Don't worry if you're one of those people who need their five year old to programme the video, because your toddler will be able to master this tuner easily.

Once all the operational niceties were sorted out the listening began. Let's just say the Cyrus had a tough act to follow as I'd previously been using Noel's Leak Troughline, in a system based around Audiolab's 8000 pre-amp and monoblocks and the very revealing Heybrook Sextets.

What greeted me as I locked in to Radio 1 was a tight, full and dynamic bass, with loads of verve and punch. Jingles used to lead into the hourly news bulletins blasted forth from between the speakers with an impressively full and dynamic sound which couldn't fail to grab the attention. As the news editor switched to an outside broadcast from



MISSION CYRUS III AMPLIFIER

With all the success that Mission has had with the Cyrus I and II amplifiers in the past, it was with bated breath that I awaited our review sample of the all new Cyrus III.

Like its predecessors, it comes in Mission's shoe-box-sized enclosure, being 215mm wide, 73mm high and 360mm deep. However, as usual, the casing is gorgeous. A magnesium alloy inverted diecast chassis endows the little Mission with both solidity and the appearance of being hewn from solid metal ingot.

The latest Cyrus has an opening trick up its sleeve too. Mimicking the Hewlett Packard test equipment used at Hi-Fi World and at Mission, it goes through a power-up routine. This constitutes a display of flashing lights. On HP equipment, it signifies the on-board computer is performing checks and calibrations. Doubtless as intrigued and perhaps awed by this sort of NASA technology as we are, Mission have built the same facility into the Cyrus. Turn on the mains power and it flashes every front panel LED in fast sequence. After that, the front panel power switch glows red, showing the amp is in stand-by.

The ergonomics of the Cyrus are a lesson in clarity. The volume control is a

bit unusual - possibly gimmicky - but in a very useful way. Around the rotary dial are fifteen equally-spaced green LEDs, the first one glowing red to show the control's minimum. As you move the knob, the green LEDs progressively illuminate. 'Big deal', I hear you say, but this comes in handy when using a remote from twenty feet away!

This, however, is not the cunning part, nor the most exhibitionist. That occurs when you press the balance button. Suddenly, the volume control acts to set balance and, in doing so, lights up all the LEDs, except the one showing balance control position. Whereas volume is shown by one illuminated LED, balance is shown by one extinguished LED - and the LEDs extinguish sequentially as balance is adjusted. Neat, eh!

Other switches include selection for four line level sources, an MM phono stage and tape inputs. These are delicate micro-processor controlled push-buttons, as are the Mute and Stand-by switches. The main on/off switch is around the back, alongside the gold-plated phono sockets, pre-amp output sockets (handy for bi-amping) and a DIN socket for connection to the Cyrus PSX-R power supply upgrade.



Cyrus FM7, continued . . .

the USA I was transported to a New York street, the Cyrus capturing all the ambient information and layering it into a wide, deep image of a place thousands of miles away. There were cars driving past the mic., people hailing taxis and milling around all within, of course, a large open space - one the Mission conveyed beautifully. With my eyes closed I found it totally captivating.

Voices were crystal-clear and tonal variations were concisely and beautifully portrayed, even if the Mission did make them slightly more 'chesty' than the Leak. Variations of emphasis, inflections and pauses in the spoken word were perfect, the ability of this tuner to

communicate was truly excellent. Our aural discrimination with human speech is considerable, so when a tuner places a DJ right into the living room, as this one did, then you know it's good.

Emma Freud was a dream come true! She was vivacious and enthusiastic, if a little rougher around the edges than through the Troughline. Fine detail like the 'pop' and 'thump' one hears when an announcer gets too close to the mic became incredibly evident with the

Mission, as was background studio noise, papers rustling, doors opening and the general ambience of a small enclosed space.

I couldn't believe my luck when a track by the gorgeous Aretha Franklin came on air. The intro was delicious as the cymbals sparkled alongside a tingling hi-hat, all the better for the ribbon tweeter of the Heybrooks. If pushed, I'd have to say that the Cyrus was possessed of a slightly better bass than the

Variations of emphasis, inflections and pauses in the spoken word were perfect, the ability of this tuner to communicate was truly excellent.

Troughline. The extension (for a tuner) was superb, as was its overall musical quality, which I'd describe as tight, punchy and full of life; I believe Scots refer to that as 'tuneful'.

The mid-range was so open, like French windows on a balmy summer's eve, that Ms. Franklin was there with bags of emotion, real Soul Music with just a hint of a lisp around the edge, as it were. This was due to over-compression after the studio, which always leads to breathy

vocals. Listening to a Kate Bush CD, the same breathy effect on her vocals was evident, but it was again due to Optimod compression, which is applied to the audio signal before it is broadcast. Tuning in to Classic FM, the Mission locked on to a huge soundstage, stretching right across the room with rigid central placement of images and great atmospheric depth. Image placement was concise, all the parts panned to their respective places in the mix. Instrumental timbre was very good too, if a little darkened when compared to a reference. Brass enjoyed a metallic rasp and string sections positively soared.

As you may have already guessed, I came to adore this tuner; it's musical, communicative, incredibly detailed and an absolute steal at £299. The Cyrus isn't quite a Troughline, but then again to build a similar valve tuner these days would probably cost three, if not four times the price of the Mission. The fact that the build quality is exemplary and that it looks exquisite make the drawback of having 'only' 7 presets pale into insignificance. If it wasn't for the latest NAD tuner, then the Cyrus FM7 would be the unchallenged broadcast bargain of the year ●

Cyrus III, continued . . .

The Cyrus pumps its 50 watts per channel (65watts when PSX'd) into the loudspeakers via a set of 4mm banana sockets; there are no terminals for bi-wiring.

Well, I suppose I'd better come clean, and nail my colours to the mast - I'm a Mission Cyrus fan. There's something about their sound that is particularly endearing. I have a Cyrus I at home, to use as a budget reference, and I've yet to find anything to touch it at the price as far as sound and build quality are concerned. So I was hoping that the 'III' would improve on this, and it did - marvellously!

The sound was astonishingly lively and free, like a breath of fresh air. The incredible fluency and poise of the Cyrus was blatantly obvious from the first few bars of Steve Earl's 'Copperhead Road', where the crisp metallic resonance of a National guitar blended perfectly with a damped snare, before the powerful impact of the kick drum brought passion and rage to the track.

Using a highly analytical and revealing system of a TEAC CD Transport sync-locked to a DPA PDM-II/III two-box convertor and a pair of Heybrook Sextets the little Cyrus more than held its own, never sounding out of place in this esoteric company.

With a much-used example of Mr.

Knopflers' 'Love over Gold' the resulting image height was extraordinarily lifelike, the sonic dimensions being perfectly proportioned with pin-point placement and nothing seeming unduly out of place. 'Private Investigations' is a very dynamic track and the Cyrus left no doubt of this, drums blasting out of the soundstage, pinning me to the sofa after I'd been stunned by the explicit attack of the acoustic guitar in all its glorious purity. The

For one so small, the Cyrus can really pack a punch.

whole studio acoustic was resolved with a wealth of detail and ambient information.

Other tracks gave tantalisingly solid portrayals of Hammond organ sounds; I could picture their Leslie speakers rotating. Piano arrangements positively sparkled as did the treble. Hi-hats were so sharp they cut through the mix like a diamond edged blade. This amp is very enthusiastic, sounding fast and agile, if sometimes a little too hasty with vocals. Put simply, the Cyrus loves to rock and roll.

For one so small, the Cyrus can really pack a punch. Those 50 watts are certainly very powerful ones. They gave the bottom end great presence, with astounding

weight and speed. The Mission made mincemeat of the torture tracks that I threw its way, playing the acoustic bass on Fairground Attraction's album as if it was standing on its head.

Temptation got the better of me and I had to try the Cyrus' phono input, especially as I had Andy's prototype phono stage (see DIY supplement) sitting next to Noel's wonderfully modified Garrard/SME turntable. The sound remained pretty much the same. With the latest Lemonheads album the bass was slightly lighter, but just as quick and agile. In fact, overall, the sound was marginally laid back with the treble and mid band a little

warmer, and although the treble was deliciously sweet with the metallic ringing of the ride cymbal, it didn't quite have the incisive nature of Andy's pre-amp. One thing is certain, the phono input isn't an afterthought, even if it does have perceptibly light bass, with little real slam.

Mission really have managed a double whammy. The tuner is a delight and the amp is amazing. It's coherent and fluent, images beautifully and has a neutral, detailed presentation way beyond its price point. If I had £500 in my pocket to blow on a new amp, then this would be the one I'd buy ●

MEASURED PERFORMANCE

The new FM7 possesses a wide, flat audio frequency response that reaches up to 14kHz (-1dB), as our response analysis shows, before filtering suppresses pilot tone at 19kHz and sub-carrier at 38kHz. As Mission claim, output from these products, plus intermodulation of programme around them, was well suppressed, ensuring low levels of unwanted products above 15kHz.

Channel separation was very high at -50dB in the midband and -46dB at high frequencies (10kHz), so low levels of crosstalk are present, always a good sign.

Actual distortion levels were also very low - around 0.1% - on the main sum (mono) signal and in the difference channel. This compares with the best. Our distortion analysis shows the presence of a small amount of third harmonic, which is unlikely to have much subjective impact.

Mission have managed to ensure the FM7 is subjectively hiss-free at full quieting, possessing -75dB hiss level. For this it needs a signal of 1.2mV from the aerial, or more.

The signal strength meter isn't good enough to show how an aerial is really performing, which is a pity. All the same, Mission's indicator looked good and worked well enough to be useful.

Sensitivity was a little lower than usual,

measuring 30µV, but this would barely be noticeable in use, except to someone trying to capture very distant, weak stations. Station rejection (selectivity) was unusually well balanced either side of the IF passband, measuring an impressive 85dB, so the FM7 is very selective and will pick out weak stations even when very strong ones are close by.

The new Mission FM7 performed very well all round under test. It offers a high standard of performance and is completely free of foibles or unusual behaviour. The superbly controlled IF passband characteristic indicates that Mission's advanced test facilities result in a better product, in this case from good design and accurate, repeatable final alignment. **NK**

TUNER TEST RESULTS

Frequency response	3Hz-14kHz
Stereo separation	50dB
Distortion (50% mod.)	0.1%
Hiss (CCIR)	-75dB
Signal for minimum hiss	1.2mV
Selectivity (at 0.4MHz)	85dB
Sensitivity	
mono	1.6µV
stereo	30µV

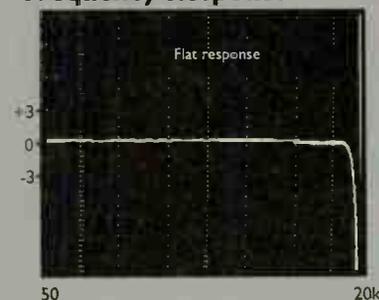
Signal strength meter

50% = 40µV
100% = 500µV

Distortion



Frequency Response



MEASURED PERFORMANCE

For such a small package, the Cyrus turns out a lot of power - 66watts into 8ohms and no less than 100watts into 4ohms. It is unaffected by reactive loads too, so it will drive most loudspeakers with ease.

The new Cyrus is microprocessor controlled and its push buttons are message senders; they do not switch the audio signal directly. Likewise the volume control, which is a rotary transmitter that tells a solid-state attenuator to operate, rather than controlling volume directly. This brings an unusual operating law to the volume control, since it rotates continuously, having no end stops, and the degree of rotation for a volume change is much greater than usual. Or in other words, more twiddling than usual is needed to change volume. Putting everything under electronic control allows remote control to be applied.

The CD input has a wide frequency response: 9Hz-60kHz within 1dB. There's enough bass extension to do justice to CD and treble starts to roll off slowly above 20kHz, which is wise, becoming -1dB at 60kHz. The unequalised inputs, including CD, are sensitive enough to accept low output sources, needing just 230mV for full output power to be achieved. Distortion was low and our analysis shows that

innocuous second harmonic prevailed at high frequencies, indicative (but not proof positive) of clean-sounding treble. The Cyrus measures well through its CD and 'flat' inputs, as it always has done.

Like earlier models, I seem to remember, the Cyrus III has a curious disc stage performance characterised by slowly falling response below about 600Hz, culminating in a roll-off in deep bass that starts high up at 50Hz and reaches 12dB/octave attenuation, which is steep. This whole filter results in very light bass from LP; I was taken aback at just how anaemic the Cyrus sounds in this department. There's a little hiss, but it isn't very obvious. A curious form of distortion, dependent on attenuator position, set in at inputs above 50mV too, which was most unusual. The disc stage was described as 'unimpressive' by three listeners, including myself. This is in contrast to the line inputs, for which the Cyrus receives acclaim, from Dominic Baker and Robert Wilson on our staff, as one of the best going. **NK**

TEST RESULTS

Power	66watts
CD/tuner/aux.	
Frequency response	9Hz-60kHz
Separation	88dB
Noise	-90dB
Distortion	0.004%
Sensitivity	230mV
dc offset	2/14mV
Disc (MM)	
Frequency response	50Hz-52kHz
Separation	50dB
Noise	-75dB
Distortion	0.006%
Sensitivity	3.2mV
Overload	50mV

Distortion



BARGAIN

BASEMENT

Dominic Todd, temporarily on a tight budget after buying several pairs of the other 501s, tries out NAD's new low-cost CD player with the Levi's number on it.

Technics player that could get close as far as sound quality is concerned, in my opinion.

The modifications to the basic Philips set-up centre mainly around the power supplies. So, for example, the DAC has a dedicated power supply, the analogue

Just as NAD's competitors feel it's safe to come out of hiding, after a spate of superb budget equipment releases, NAD have gone and done it again. This time it's the CD market that's going to take a knock



from NAD's extraordinary ability to produce giant slaying electronics at near farcical prices.

It obviously wasn't enough for NAD to already have a highly rated 502 CD player right in the midst of the ultra-competitive £200+ price category, priced at £219.95. Rather than upgrading this existing player and fielding a £300 player, as is the norm these days, NAD have gone to the other extreme and produced a player for a mere £179.95.

The biggest surprise of all, though, is

that NAD have ditched the usual Technics-based MASH system and, for the first time ever, chosen a Philips mechanism and Bitstream conversion. As with all NADs, there's nothing particularly fancy or frivolous about the new 501 compact disc player. The basic layout is quite similar to most of the older budget Philips machines and others such as the £230 Rotel RCD 945. The CDM-4 transport is a little old-fashioned by today's standards, but it's nothing to be ashamed of, as even players such as the £1400 two-box Orelle still use such a mechanism.

As is often the case with NAD, the basic specification is nothing special, but what makes their equipment sound so good is the care with which the technology is implemented. Although the previous machines were based on Technics chipsets and transports, you wouldn't be able to find a similarly priced

sections have separate, regulated power supplies, and there is complete separation of the digital and analogue stages.

You'd have to be a dedicated Nadophile to spot the differences between this and previous machines. The only physical differences between this model and the 502 are a slightly smaller drawer (to accommodate the new transport), Philips-type transport locks underneath and the addition of a 'pause' key. Other than that it's pure NAD, which means lightweight build quality, matt grey front panel, small and dim display, and good ergonomics, partly due to the fact there are so few features on offer.

Where's the catch then? It's simple, there's no remote control, although you can control it via the remote on a NAD 701 or 705 receiver.

Using Bjork's Debut album, I put the 501 through its paces to see if it was capable of pulling off the same star performance as other NADs have recently. Needless to say, I was highly impressed. The sound was full-bodied in a way that even the occasionally thin sounding 502 couldn't hope to emulate. This gave more presence to Bjork's vocals

which can sound decidedly anorexic on lesser machines.

NADs have never been ones for a 'laid back' balance, tending to favour a more forward balance with plenty of detail. The 501 is no different here. The Commitments' second album could occasionally sound edgy in places, but this was compensated for by a real enthusiasm and verve shown for the music. Vocals could sound a bit larger than life, but once again showed improvements over previous NADs in having a warmer balance and less of a tendency to 'shout' at the listener. Yet traditional NAD values of fine articulation and detail were still present. Complex bass lines, which can overcome some budget (and even mid price) CD players, were handled competently, with only a mild degree of muddle and bass overhang.

Sound quality showed some of the qualities of the QED Digit, in that it was very clean and precise, with good separation between the vocalists and backing instruments. No doubt this is something to do with the attention shown to power supplies in both cases.

An expansive and deep soundstage was prominent, although the slightly too powerful vocals and warm bass created this impression somewhat artificially. Nonetheless, the sound was involving without too many of the harsh constraints, such as compression, that

budget players can often portray.

With classical music, the 501 didn't quite manage the same success it achieved with rock and pop. Although the fine separation and broad soundstage suited large scale orchestras, there wasn't the sheer dynamic scale to the sound that can make all the difference. Having said that, I'd be hard-pushed to name another player under £260 that can create the required dynamics effectively. More delicate violin and flute solos suffered from a lack of subtlety and delicacy, lacking fluidity and sounding a little stilted, with occasional hardening.

Although some of the sound quality observations may seem to be less than flattering this is still an excellent machine, and the criticisms are part and parcel of all machines at this sort of price anyway. So, considering it's £180, the 501 offers a superb sound quality capable of rivalling, or even exceeding, machines costing up to £260 (and even the odd duffer above that). I'd even go as far as to say that it sounds comprehensively better than the more expensive 502, giving only a little away in terms of bass articulation and mid range clarity. The 501 offers a much more rounded sound that allows it to be less fussy about the choice of music or system that it's to be matched with. Music bubbles with enthusiasm, and the lively, detailed balance with rock, pop and even jazz and folk, belies the player's dowdy grey appearance.

Don't expect the last word in truthfulness, though. The 501 has a distinctive character that does colour the sound and can be rather off-putting on material that requires more than guts. It's here where more expensive players such as the Rotel 965 Discrete and Arcam Alpha 5 show just what the extra money is being spent on. Anybody who predominantly listens to chamber music or classical soloists, will find that the more expensive machines really score here.

The 501 can't quite claim the awesome ability of its sister 402 tuner. This isn't the best-sounding CD player at under £400, as most £300+ players will show an improvement. Unlike the jeans from which it takes its name, the 501 is unlikely to become a legend. Yet it is an excellent value-for-money CD player, with no real rivals at the price and an enjoyable sound quality that will disappoint few.

Long may NAD continue their winning formula of gimmick free products that offer arguably the best sound quality for money ●

NAD 501 CD Player **£179.95**
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MEASURED PERFORMANCE

NAD have traditionally used the Japanese low-bit NEC/Technics MASH convertor in their CD players, unlike most occidental manufacturers, who have traditionally gravitated to Philips. Now NAD have joined them, using a Philips one-bit convertor, the SAA7323. When not used doubled up in distortion-cancelling differential mode, this gives a little distortion, but not much - typically around the 0.02% figure when well applied. The 501 produced just this amount at -30dB music level on disc, which is very low. Our analysis shows it comprised just a few low-order components, so I would not expect any sign of sharpness or coarseness in the sound. However, distortion rises significantly to nearly 1% at -60dB, and this just may have some slight impact upon the sound.

Frequency response has been tilted downward at high frequencies by the output filters, suggesting the NAD501 is likely to have a warm-ish or smooth sound; it certainly shouldn't come across as sharp in any way.

With low noise, wide channel separation and very high output at nearly 3V, this player measured well. It produced little spurious output above 21kHz too, which is always a good sign.

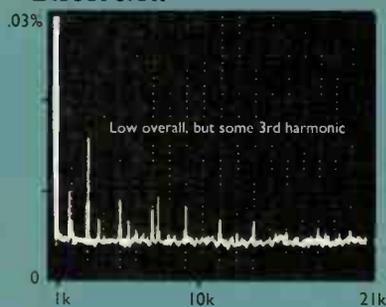
NAD have engineered the 501 well,

obviously aiming for a smooth or warm sound free from the harshness that can afflict budget players. Whether it will have a little more get-up-and-go than most MASH players only listening tests can tell. **NK**

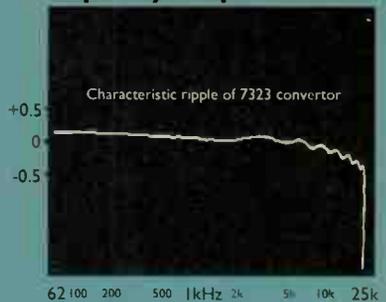
TEST RESULTS

Frequency response	4Hz-20.6kHz	
Distortion %		
-6dB	0.005	0.008
-30dB	0.02	0.03
-60dB	0.96	0.97
-90	40	40
-90dB dithered	19	21
Separation dB	left	right
1kHz	92	101
20kHz	91	95
Noise	-94.5dB	
with emphasis	-98dB	
Dynamic range	101dB	
Output	2.9V	

Distortion



Frequency Response





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in principle) is traditionally known for giving floor shaking low organ notes, for example, but performance depends much upon details of its physical implementation, such as the sort of line damping material used and the nature of the chamber behind the drive unit.

Castle are known for their fine in-house cabinet work. They've made the Howards appear elegant, rather than overpowering, by using tall, slim proportions and swept-curve grilles. The cabinet work is excellent, with real wood used for comers and a deep rich shine. This gives the speakers a quality 'crafted' feel-and they're heavy, which also suggests that these aren't mass-produced items.

The drive unit in the top of the cabinet, the port in the base and the special plinth that has to be screwed firmly into place underneath also suggest that the Howards aren't a simple box loudspeaker either. There are more expensive 'speakers in Castle's range, but these are their

current treasures, at least for the time being. The 6 inch doped-paper drive unit in the top of the cabinet, firing upwards towards the ceiling, drives the quarter-wave line in order to provide bass. It does, surprisingly, cover part of the midrange too, rather than being committed only to bass frequencies. This is almost certainly responsible for the spacious sound the Howards have, but unfortunately explains the slightly vague imagery and occasional muddle they suffered.

More conventionally mounted is a second identical unit, accompanied this

Towers Of Strength

Dominic Baker enjoys Castle's latest floorstander - the towering Howards.

The Castle Howards are a quarter-wave resistive horn-loaded design. This is a loading technique that

demands a big cabinet, but in theory offers very strong and even-sounding deep bass. Transmission-line bass (similar

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time by a 25mm metal dome tweeter, which is smooth in nature and manages to keep its identity extremely well suppressed. No out-of-tune squeaks from this one!

The Howards need plenty of breathing space. Pushed too far back into the corners of a room they have a tendency to produce a hollow boom; I found they needed at least three feet of clear space around them to deliver tuneful and natural bass. This immediately puts small rooms out of bounds, unless your musical tastes revolve around heavy reggae. A solid floor is also an advantage, as low frequencies vent from the narrow gap between the plinth and the main 'speaker cabinet, flowing out across the carpet.

An advantage of using lightweight paper drive units and quarter-wave resistive line loading is good sensitivity. Castle quote 90dB, and I certainly had no problem at all driving them with a 30watt valve amplifier. In fact, this was the best match for them, as any hardness or grit is ruthlessly revealed by the midrange unit. I suspect that, even though doped quite heavily, the bass/mid unit starts to break up just before crossing over to the tweeter. This gives the midband just a slight coarseness, not enough to worry about, but a smooth valve amplifier was just the medicine needed to banish it from my attention. A slight hardness, or coldness, did remain, but this is far more desirable than a soft, mushy quality.

The Howards, contrary to what I'd expect knowing transmission line loudspeakers (being well acquainted with IMFs and TDLs) had quite a dry, lean and well controlled bass. It was far less pronounced than any of TDL's designs, for example. That's not to say it isn't good, in fact it does remarkably well at staying tuneful and powerful, but without becoming overblown. It has none of the artificial richness of, say, some heavier polypropylene bass units, but instead gave a very real and uncoloured presentation. Large kick drums retained the hollow thud that characterises them at a live concert, and bass guitars played scales evenly, individual notes only becoming more prominent when the guitarist chose to pluck harder.

James' new album 'Laid', sorrowful in character apart from the couple of inevitable singles, was given suitable treatment. It is quite a 'dark' recording and with loudspeakers that sound veiled in any way it can become 'withdrawn'. The Howards, however, are quite forthright in their delivery, revealing detail and exposing it to the listener. As Tim Booth stepped forwards the band moved back, the soundstage being given the depth it needed to sort out who was who. This album was imbued with some of the attack it so desperately needed to become clearer, more precise and more enjoyable. The acoustic set and twangy country-style guitars of Grant Lee Buffa'o's Fuzzy were also given the atmosphere

and fast, clean delivery needed to recreate a realistic performance. And although they are normally a pet hate of mine, the metal dome tweeters did a fine job, giving the steel-strung guitars just enough sharpness and edge to make them realistic without becoming grating. In fact, on all of the albums I tried, this unit always managed to steer clear of the faults commonly attributed to metal dome tweeters, revealing a pleasant crispness within most recordings.

On the same album 'The Hook' displayed just how well the speakers could cope with reproducing the atmosphere of a recording. The soundstage was wide open, seemingly unlimited in size, yet without sounding unnatural.

The Howards, I found, imaged well within this stage, with exceptions in certain areas. There was a range in the midband that became ill-defined in terms of position and had an almost phasey quality to it. Just when you were sure of a performer's position, a changed note or new instrument caused the image to disperse across the stage. This, I'm sure, is a result of the separate upward and forward firing midrange units, combining to produce strange effects.

Their image quality and focus could be improved by placing a light pillow on top

of each of the Howards, which effectively absorbs the majority of the upwardly firing midrange. A little spaciousness was lost, but it's artificially produced anyway and the result was a more cohesive delivery. My ceiling is nine feet high; perhaps in rooms a couple of feet higher the effect of bouncing the midrange off it would not be so noticeable.

Having said that, these loudspeakers do so many things right in areas that others surrender to, they deserve credit. If you're not particularly bothered about precise imagery and focus, but enjoy an open and airy presentation, the Howards do a lot to please. They are revealing and truthful about the programme material they are fed, making them both insightful and clean. Definitely worth careful auditioning, they have strengths that others lack-and that may well prove to be a deciding factor. You do get a lot of loudspeaker for the price ●

Castle Howard
Castle Acoustics Ltd,
Park Mill,
Shortbank Road,
Skipton, N. Yorks,
BD23 2TT.
Tel: 0756 795335

£1000

MEASURED PERFORMANCE

Castle's new Howards are an interesting loudspeaker. From the front they appear to be a conventional two-way floorstander, using a 6inch doped-paper bass/midrange unit and a metal dome tweeter. However, on top of the cabinet there is a second bass unit whose job is to drive the 1/4 wave line.

The midrange output from this upward-firing bass unit has an effect upon the measured performance of the Howards, producing cancellation suck-outs in the midband caused by mutual interference between the units, because their outputs overlap. Placing a pillow, or similar absorbent material, over this top unit resulted in a much flatter response, by absorbing the midrange energy.

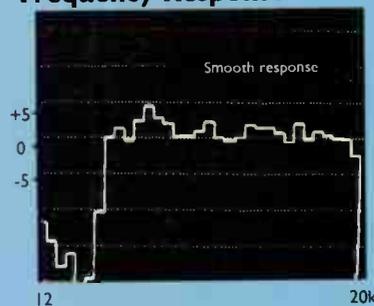
So our response plot shows the frontal response, which is largely what will be heard at the listening position, albeit with some slight modification from room reflections. The tweeter rolls gently down towards 20kHz, which is probably responsible for the speaker's apparently smooth sound. The roll-off isn't quite enough for the Howards to sound dull, but it is enough to prevent it sounding conspicuously sharp or bright. The rest of the response is very even, with just a small lift around 160Hz which tends to add a little speed and punch in the bass.

The Castles are not quite as sensitive as I had thought from usage, measuring a mediocre 85.5dB at 1m, for a nominal watt input. This means that they will not go particularly loud unless a powerful (60W)

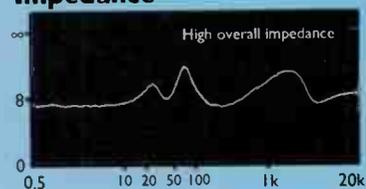
amplifier is used. However, the overall impedance is high at 11Ω and the impedance curve well controlled - staying high through the mid and treble. This explains why I was able to get such good results from our 300B no feedback power amp; the Howards are a prime candidate for this kind of amplification.

Overall the Castle Howards are well engineered and suitable for a wide range of amplifiers. The midrange content ideally needs to be eliminated from the top bass unit, but the effects of this will vary from room to room. If you don't like it, a couple of cushions should do the trick! **DB.**

Frequency Response



Impedance



My system has always been Naim-powered. It began as a Linn Sondek with Basik arm and cartridge driving an original Nait amplifier and Linn Kan speakers, but has progressed to a NAC52 pre-amplifier driving a brace of NAP250 power amplifiers via an electronic crossover into Naim's active SBL loudspeakers. The turntable is still a Sondek, albeit a Pink Triangle-modified, battery-powered version with Naim ARO tone-arm (and a pre-production cartridge about whose origins I'm currently sworn to secrecy). The system's development adequately reflects the fact that although I've changed speakers and source components-even to the point of embracing Compact Disc-I've yet to discover another electronics package that delivers what I want from music.

As a long-standing user I've always appreciated the way that Naim Audio takes care of its customers by making its amplifier range easy to upgrade. This tradition continues with the models reviewed here, the £898 NAP180 power amplifier and the £1880 NAC82 remote control pre-amplifier.

The NAC82 is a minimalist design with six inputs. Inputs 2 and 3 are standard line level connections; inputs 4, 5 and 6 are similar, but with record-output facilities; input 1 is configurable for line-level or phono duties provided by small, interchangeable boards that plug into the main circuit board. Each input has independent record and listen selectors, enabling users to record one source while listening to another. Each bank of selectors also has a mute and mono facility. The only other controls are for volume and balance. This amplifier does, however, have one convenience feature-full remote control. The handset supplied



RHYTHM

When it comes to conveying rhythm, Malcolm Steward and Robert Wilson agree that new remote control NAC82 preamplifier

will also control Naim's CDI and CDS CD players, or any others that are Philips RC-5 compatible.

The NAP180 power amplifier is another minimalist product. All you get is an on/off switch on the front panel, one input and one set of outputs on the rear. The 90watts into 4-ohms output is via 4mm sockets, so speaker cables terminated with banana plugs are mandatory.

The input is a four-pin DIN connector and this connection also supplies DC power to the pre-amplifier, which means that you must use the supplied leads to connect the pre and power amplifiers.

Naim designs its power amplifiers specifically to work with its own pre-amplifiers and interconnects. I recognise that this isn't what most audiophiles expect, but you need to shelve your paranoia. Over the years I've wasted countless hours toying with custom leads and I've yet to find an arrangement that betters the original.

As supplied (i.e. with no additional power supplies) the NAC82 and NAP180 system delivered a supremely confident performance, even with difficult loudspeakers. I used various models including Naim's own passive SBLs, Epos ES1 Is, and Neat Petites, which are

diminutive but difficult-they reveal weaknesses in amplifiers that work satisfactorily with all manner of other speakers. The NAC82/NAP180 sounded unwaveringly consistent throughout.

The amplifiers gave a lucid, highly engaging insight into a wide selection of music and proved typically critical, in true Naim fashion, of source components. Consequently, I did all my listening with my own turntable. Naim and Micromega CD players.

The amplifiers' most outstanding characteristic proved to be their facility for involving you in the music. During a week of testing amplifiers prior to sitting down



MASTER

nothing quite matches up to a big Naim amplifier. Here's what they thought about the and NAPI80 power amplifier.

with the NAC82/NAPI80, I'd bought Gabrielle's *Find Your Way* CD and after numerous plays I remained unimpressed by it; after playing it once through the Naims I realised it had been a worthwhile purchase. Does that girl's voice sound enticing through these amplifiers or what!

The same thing happened with Van Morrison's *Too Long In Exile*, which went from having a so-so rating, judged on other electronics, to being permanently stationed next to the CD player.

The NAC82/NAPI80 cut through music's cosmetics and unearthed the elements within it that stir your emotions and trigger subconscious reactions. Lyrics,

phrasing, instrumental lines that passed unnoticed before assumed a significance that changed the way I felt about particular pieces of music. That might sound spooky and metaphysical, but I reckon that the reason for this is quite mundane; the insight and cogency with which the Naims presented music simply allowed me to gain a much better appreciation of what was happening within recordings.

Consider the way that musicians can dramatically alter the feel of a song by quite subtle devices—a bass player dropping marginally behind a drummer's beat, for example—and it's logical that

listening to an amplifier capable of revealing such nuances is going to be a more stimulating experience. Their portrayal of music didn't entertain any muddle or opacity, yet they weren't detailed in a sterile hi-fi fashion. The acoustic guitar and percussion on the intro of 'Gabrielle's Dreams', for instance, were scrupulously etched, but not exaggerated or conspicuous. The amplifiers allowed me to delve into the deepest recesses of a mix while they maintained a wholly natural perspective on the music.

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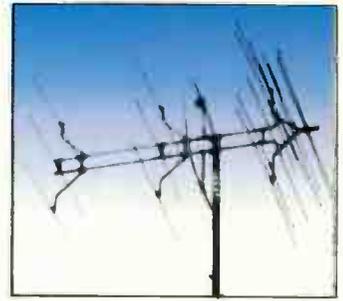
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performances, however, stemmed from their exceptional aptitude for conveying intonation and timing clues. This was due in no small part to the remarkable control the NAC82/NAP180 exerted over the frequency extremes. The low end was notably powerful, but taut. I've heard it described as dry, but that suggests a tonal flatness, which isn't justifiable; the Naim's didn't, for example, rob a double bass of its resonance or tonal colour, nor did they confuse sampled basses with the genuine article. Their upper registers appeared equally informative. Like other amplifiers from the Naim stable, they demonstrated a lightning response to leading edges that were followed by the exposition of the full note envelope; their resolution of, say, the different timbres in a drummer's range of cymbals was exemplary.

Previous encounters with the NAC82 have shown that adding one or two HI-CAPs to it, as you inevitably will, doesn't alter the system's signature, but enhances its already considerable ability to communicate. However, that's another story. In its basic configuration the NAC82/NAP180 rivals any similarly priced combination; within the context of an appropriately well-sorted system it buries them in my view.

Malcolm Steward

Back at Hi-Fi World Towers, this is what we thought of Naim's new amplifier ...

With Heybrook Sextet loudspeakers hooked to the Naims, I settled down into the sofa with remote control in hand. Knowing the dynamic nature of the 'Naim sound' I decided to let it get to grips with some big, dramatic drum recordings.

The beginning of Phil Collins' 'Another day in Paradise' uses a heavily gated drum and the Naims showed this specific technique to perfection. It was easy to discern the speed of the gate 'closing' on the reverb produced by the drum. The initial notes played on an acoustic guitar cut through the mix with power and confidence, conveying the musician's performance with unerring insight, although the sound of the guitar was a little too metallic and lacked the finest harmonic details that fill out the woody timbre of the instrument. As the track built up, the Naims followed suit, taking hold of the Sextets by the scruff of the neck and making them take charge of the rhythm section with military-like precision.

These amps were crying out for the Rolling Stones and all the percussion that they always layer onto their up-beat numbers, which lesser amplifiers fail to resolve into a cohesive performance. Again, the Naims didn't disappoint, relishing the tight, punchy drums, endowing them with terrific dynamics allowing me to really appreciate the amount of air that a tight 'skin' can move. If you love drums and percussion, then

you'll love these Naims.

Bass guitar fared almost as well. However, it did lack that last ounce of weight and the laser sharp leading-edge definition afforded by Naim's better amps (especially in an active system), as well as the big American Krells and the UK Chords. The 'tune' was always evident and made listening to my all-time favourites, those Fab Liverpudlians, an absolute joy. Paul's melodic bass lines shone through, allowing me to bask in the man's sheer genius.

The Naims aren't perfect though, noticeably in the mid-range where they do lose out to some of the finer valve amps that I've heard. The tenacity with which they handle rhythm can sometimes be a touch overpowering with vocals, as they do tend to add a little glare. There is a distinct sonic trademark which firmly imprints the word 'transistor' in your mind. This is not to say that vocals were poor-far from it; the way that these amps can communicate a singer's emotions is at times breathtaking, from Jagger to Joplin, Lennon to Lee Hooker.

The ability of an amplifier to unravel the complex strands of a multitrack mix is something that I especially look out for. The Naims certainly possess this, although not in abundance. They lay a sound stage out quite beautifully, solid and tangible between the speakers, although depth is very much constrained. But they do allow you to follow the intricacies of the music, which maintains listening interest. You will find yourself enthralled in the discovery of musical minutiae and harmonic timbres which these amps portray quite delicately, if in a slightly dry overall presentation.

I've certainly enjoyed listening to music with the Naims. They are fun and give music life and dynamism, making other amps sound pale in comparison. Although they don't possess the last word in sonic purity or smoothness, or even neutrality, they do allow you to enjoy the music, which is not always the case with other amplification, even at this high price level. From me, they receive recommendation ●

Robert Wilson

MEASURED PERFORMANCE

The NAP180 power amplifier produces 55watts per channel into 8ohms, enough to make most loudspeakers go loud in most rooms. All the same, it is not quite the powerhouse its dimensions would suggest, so party levels are out. As usual, power output into low loads increases, 90watts being delivered into 4ohms. Naim rate their amps into 4ohm loads, the '180' model number representing the total output of the two stereo channels. Tests showed that the power amplifier is load tolerant, so it will drive most loudspeakers.

Naim like to band limit their pre-amplifiers: they roll the NAC82 off as soon as possible, making it -1dB down at 20kHz. This is quite drastic and, in most amplifiers, it produces a noticeably warm sound. However, in this one it does not, although over a weekend's use I did notice that upper treble seemed a little dilatory. The reason for band limiting, by the way, is to prevent 'transient intermodulation distortion', or in other words, it is meant to produce a cleaner sound. Low frequency output extended down to 10Hz (-1dB), low enough to get good bass power and a firm, deep bass line from CD.

Channel separation was mediocre at 40dB, but this actually enhances centre images and strengthens stage presence in vocalists in particular. Hiss was satisfactorily low at -82dB, if not as low as usual. However, this is because Naim use buffered inputs, which provides optimal source matching. Input overload occurs at 7V.

Distortion was not detectable at low levels in the midband, but started to appear on our analyser screen at high frequencies. However, levels were low at

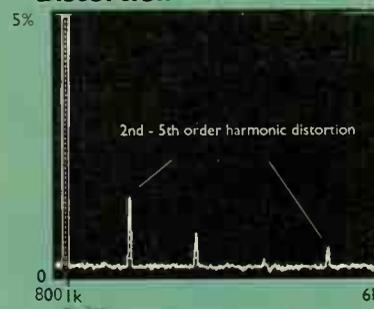
0.01% worst case (-1dB below full output at 10kHz). The spectrum analysis shows harmonics extended up 5th order at 50kHz, suggesting the presence of crossover artefacts.

The NAP180 is a big beastie for a 50watt per channel amplifier (using the conventional power rating standard), but it measures well enough. The NAC82 preamplifier imposes band limiting on the system, which has some impact upon its sound. The two in combination turn in a competent measured performance free from major flaws. **NK**

TEST RESULTS

Power	55watts
CD/tuner/aux.	
Frequency response	10Hz-20kHz
Separation	40dB
Noise	-82dB
Distortion	0.03%
Sensitivity	70mV
dc offset	15/13mV

Distortion



ROKSAN RHYTHM



Eric Braithwaite listens to the rhythm of a Roksan Attessa CD transport and convertor.

The hot news a month or so back was that Roksan, doyen of turntable builders for several years, have given up making them - apart from the Signature, that is. The company is obviously going to concentrate on activities more in keeping with its new name: Roksan Digital.

A number of moves have probably concentrated the digital mind at Roksan, resulting in the disappearance of the Rok DP1/DA-1 transport and DAC and its replacement with the new, cheaper, Attessa transport, eponymous DAC and power supply.

As it so happens, I've been digitally spoilt for the last few weeks, having been living with both Counterpoint's DA-10 multi-module DAC (which has the Crystal Delta-Sigma the Attessa uses as a plug-in

option) and Trichord's Pulsar. Some familiar resemblance might be expected, since both companies now have ex-Roksan personnel, but not a bit of it.

Counterpoint's transport and DAC have rack-mount width and slimline looks, the transport using the Philips 12.1 mechanism. The Pulsar adopts the latest Burr-Brown surface-mount PCM-69 chip, with an awe-inspiring range of user-options in 18-bit or 20-bit filtering, phase inversion, adding dither and jitter-reducing options.

Roksan, by way of contrast, have opted for multi-inputs: the Attessa DAC will take four digital sources. The review sample was supplied with BNC sockets which, since using them on the Sugden SDT-1 and SDA-1 transport and DAC, I've come to favour. Optical terminations are an option.

Two power supplies cater for the penurious, or those with a smiling bank manager. There's the basic DSU, which comes in a plain black, oblong metal box, and there's the grander Attessa PSU, matching the DAC in size, colour, slope-fronted shape and powder-grey finish. Both link to the DAC with a dedicated umbilical, and the warning in the manuals that the amplifier should be turned down before switching on is justified: there's a fair power-on thump.

The DSU is very much a stop-gap. Superficially, it gave a tight sound, narrowed in width between the speakers, with the images projected out towards the apex of a triangle before the listener. It was, however, rather coarse and gritty, especially in the upper-midrange. By comparison, plugging in the Attessa PSU

broadened the stage, freeing it from the speakers, while fleshing out and smoothing the tonal colour.

Crystal's Delta-Sigma has a distinct signature. It can sound vivacious and lively in the mid-range, very tonally clean and accurate, but sometimes almost a-rhythmical in the bass. It can offer a sharp focus with an exceptional amount of inner definition - but sometimes the degree of sharpness can vary with frequency. I've begun to call this 'Crystal cracked horn syndrome' since I first noted it on a Sony 20-bit recording of Haydn symphonies, where a horn note sounded as though it had cracked. It can afflict vocals as well, in this case making Janis Joplin's voice somewhat screechier than usual in places, coarsening 'Ball and Chain' almost to sandpaper abrasiveness.

Where it becomes a virtue is on songs like Björk's 'Human Behaviour' or Suede's 'Breakdown', when the vocal line is that much more distinct from the backing that sometimes obscures it. But it does mean that some recordings are enhanced while others become a curse. One that was unusually enhanced was The Nelson Brothers' Hometown. (Regular readers will recognise the name from my using a live 96kHz sampled DAT recording of this country-world-music-rock band. Hometown is the studio-recorded CD.) This amalgam of mandolins, acoustic instruments, five-string bass and (reall!) drums came across with astonishing breadth and deep bass. It was deliberately

mixed 'after Daniel Lanois' and the Roksan squeezed every aspect of that kind of sound out of the CD - Crystal clear and highly developed.

Odd, therefore, that the Atessa pairing couldn't perform the same feat consistently throughout the Chicago Symphony Orchestra's Beethoven on EMI or Steven Issleris' new RCA recording of Taverner's Eternal Memory. At one point in the Taverner tremolo, strings become very agitated against a strong but deliberate cello melody. The Roksan lost control and it all became a muddle.

Beethoven's Eighth is an airy, danceable piece; but the Roksan couldn't quite get it to fly, the orchestral sections seeming undirected. Some electronics and speakers suffer 'one-note bass'; this odd effect (which it has to be said is evident in both Dacula and the Quad 67, but better-controlled and therefore impinging less) is best described as 'one speed rhythm'. It leads to a degree of dynamic sluggishness.

Partly, this may be attributable to the transport as well as the DAC. With the Atessa linked to the Sugden DAC, images were a little more clear, rhythm and beat tighter, but the overall gauzy soft-focus effect remained. At just a couple of hundred pounds more, Counterpoint's DA-11 transport has a much sharper focus and unerring - almost uncanny - dynamic control.

Equally, at around £1200, Trichord's Pulsar is a tough act to beat. It has breadth, depth, three-dimensional imaging,

remarkable dynamic speed and that rare ability to establish nuances of expression in every part of a recording. While the Roksan could give a flavour of subtle vocal and instrumental expression, a neutral tonal colour and physical width that was nearly the equal of the Counterpoint's exceptional spread, it was more recording-dependent than I find entirely comfortable. Acoustic instruments or electric guitar-driven music seemed to fare best, least affected by the Crystal foibles.

Finally, too, I have a couple of mechanical niggles. The Atessa took nine seconds to reach track 18 on one CD against the Sugden's six and the manual disc clamp is an inconvenience, although one imposed by others such as Naim. I don't mind the Atessa's unusual styling - I thought it quite attractive and certainly distinctive. The player is fascinating, but I feel it is also a little flawed in contrast to some effective competition

Atessa transport	£1295.00
DAC & Atessa PSU	£995.00
DAC & budget PSU	£595.00
DAC/no PSU	£550
Atessa PSU	£550
Basic PSU	£135

**Roksan Digital Ltd.,
Stockley Close,
Stockley Road,
West Drayton,
Middlesex, UB7 9BB.
Tel: 0895 436384**

MEASURED PERFORMANCE

Roksan have put their faith in the U.S. Crystal chip with this player, a key item the Atessa shares with Quad and Creek CD converters/players, to name but two. The Crystal chip is easy to apply and comes with its own distinctively punchy sound that has certainly made a lot of Quad owners happy, we are told.

In the Atessa convertor though, Roksan place it into a different environment, one without a transport and with an external power supply. Under these conditions the Crystal proved itself to be a very low distortion device, as in the other products that I have tested previously. At normal music levels our analysis shows there's no distortion to be seen at all. At low levels it still barely makes an appearance, measuring just 0.4% at -60dB for example. Distortion lurked beneath noise with a -90dB dithered signal, being revealed only by synchronous linear time averaging, used in astronomy to strip away noise from radio stars. We use it to strip away dither noise to reveal underlying distortions, which in this case measured just 2.2%, a very good result at -90dB, where digital signals are usually horrendously distorted.

Frequency response of the Atessa can be seen in the analysis. It has a peculiar inverted saucer shape to it, suggesting

restrained bass and smooth, spit-free treble. However, listening tests must be the final arbiter of this aspect of the player's subjective performance.

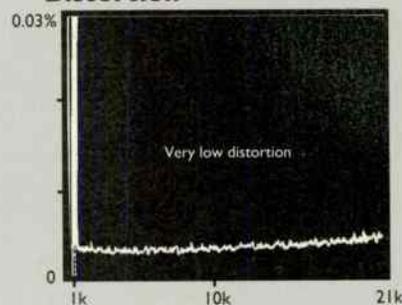
Noise levels were unusually low due to noise muting at digital zero I suspect, which makes the measurement effectively invalid. Channel separation was good and spurious outputs low, but audio output was unusually low too, measuring just 1.4V. So the Atessa will sound distinctly lacking in any uncompensated A/B demonstration - something that's worth bearing in mind.

NK

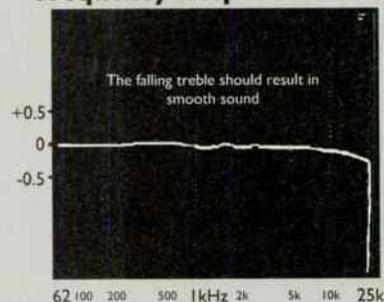
TEST RESULTS

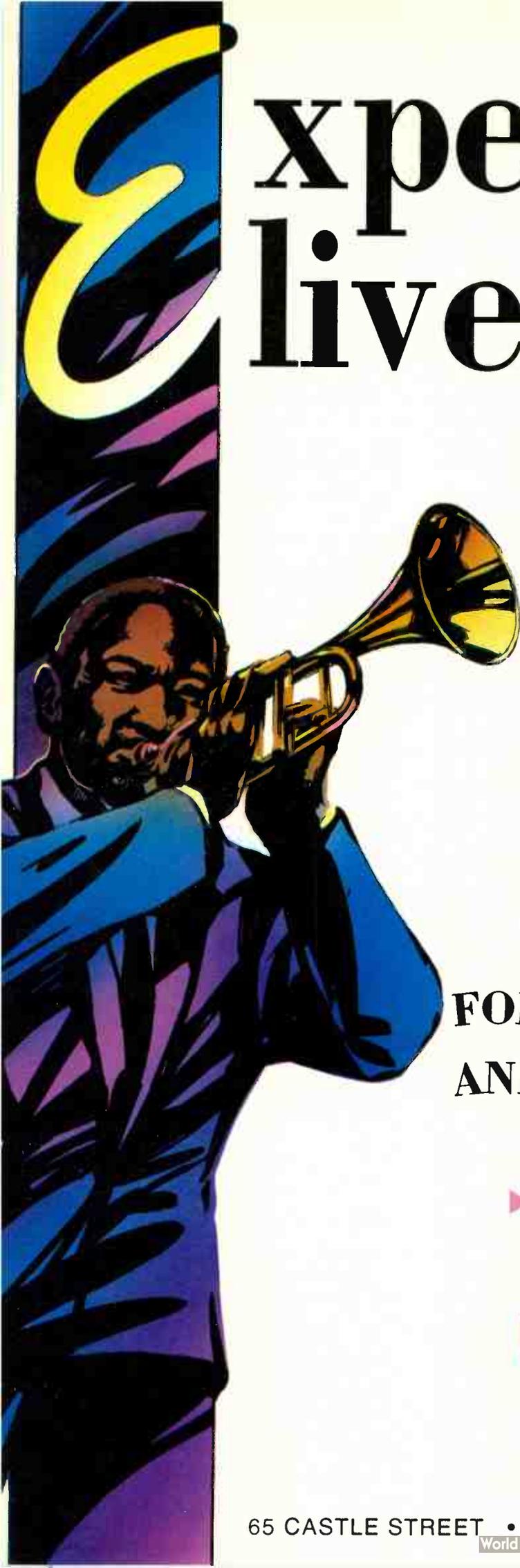
Frequency response	4Hz-21.2kHz	
Distortion %		
-6dB	0.006	0.006
-30dB	0.008	0.008
-60dB	0.4	0.4
-90	32	31
-90dB dithered	2.2	2.5
Separation dB	left	right
1kHz	111	110
20kHz	88	88
Noise		116dB
	with emphasis	116dB
Dynamic range		105dB
Output		1.4V

Distortion



Frequency Response





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CLEAR AS CARBON!

Dominic Baker finds van den Hul's new carbon interconnect has a clear advantage

It's not often that we review cables here at Hi-Fi World. They're so system dependent that it is often hard to say exactly what the cable itself sounds like. And what is a good cable anyway? One that has a character that can be usefully used to tame either brightness or dullness in your system, or one that is neutral and reveals the faults? The purists would opt for the latter, but not everyone can afford a purist hi-fi system, nor do they want faults put under a spotlight.

Those cables which are neutral add or take away little from the sound of the basic hi-fi equipment, but those which are 'coloured' in some way or other can usefully tame an unwanted trait of the system to give a balanced and more natural overall sound. Of course, if you find you need a dull cable to tame vicious treble, you haven't been all that careful with your choice of equipment, but sometimes this is unavoidable.

The two cables we're interested in here are by no means budget items, so you would expect the systems they're likely to turn up in to be fairly transparent and neutral. So the cable ideally should also be transparent and neutral.

And this is the claim made for van den Hul's linear structured carbon interconnects, The First and Second. Both use non-metallic conductors, carbon in fact, and so aspire to be completely free from the colourations associated with various metals, such as copper and silver.

The First is a carbon cable with a carbon screen. The Second is similar, but has two signal conductors and a triple screen made up of a layer of carbon, aluminium foil and silver-plated copper braid, to give an option of balanced operation and reduce interference to a minimum. There was a rumour that the First could suffer hum problems, but I've been using it for around eight months now with some of the

weirdest valve amplifiers around and haven't heard a whisper yet.

At first I was unsure about the sound of these carbon interconnects. They seemed to be hiding detail when compared to a similarly-priced metal cable. They sounded a little too soft, and the more forward, brighter balance of, say, DPA's Black Slink was certainly more impressive to listen to.

However, after a week or so I was having second thoughts. I spent hours experimenting using a mixture of carbon and metal interconnects, all-carbon and all-metal, including solid silver between the source and pre-amp and on to power-amp. The metal cables I used had a harder, brighter balance than the van den Hul carbon cables, but was this the character of the metal, or were the carbon cables just less revealing?

To confuse matters further the carbon cables were changing as they ran in. Fine detail was appearing in delicate layers, all there, but not forced to the front in the same way as the metal cables I normally use.

After months of listening I came to the conclusion that neither metal nor carbon interconnects are the 'be all and end all' of hi-fi interconnects. Both have their qualities, the carbon having a smooth, almost darkly detailed quality, and metal cables a more up-front dynamic sound. Van den Hul's carbon interconnects aren't as impressive to listen to, but have a more reserved, classy quality.

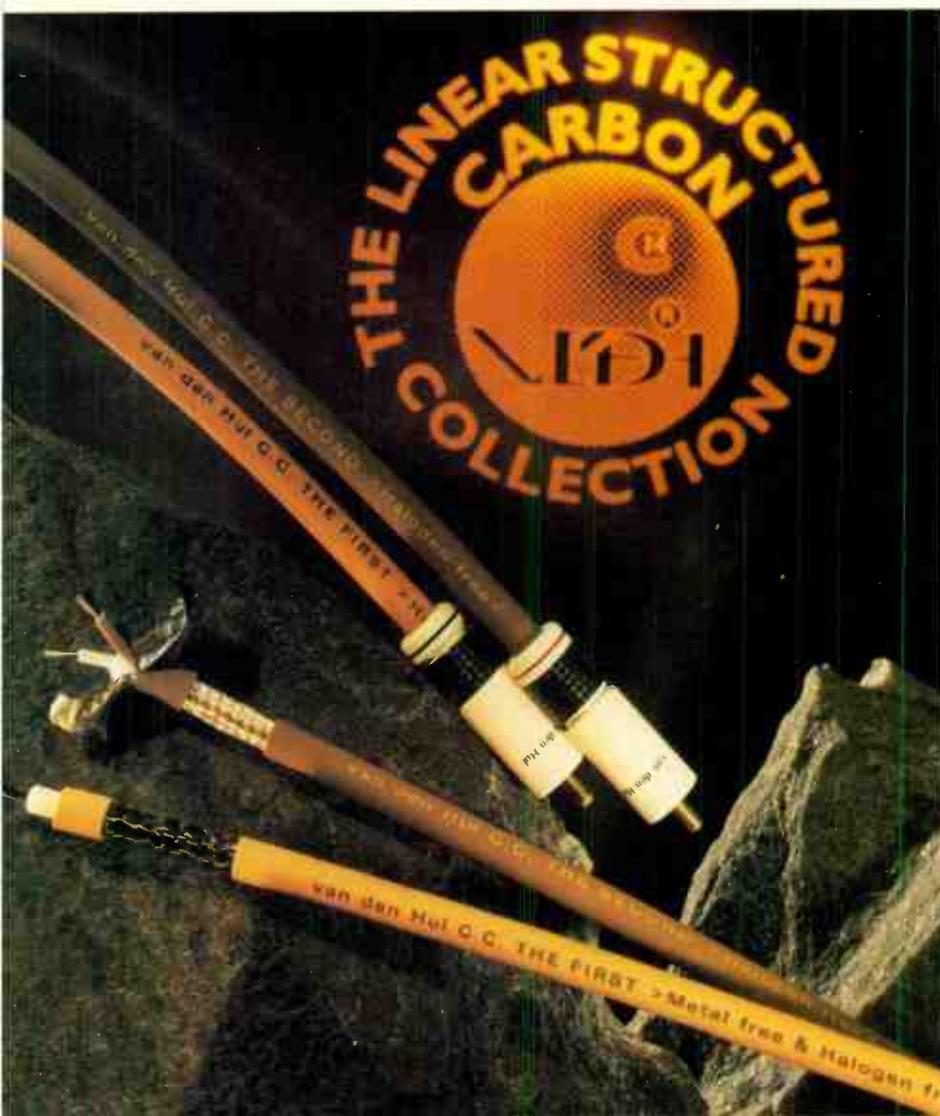
The basic character of each of the two cables—First and Second—is very similar, as you might expect, but the Second, for whatever reason, does have a little more weight behind it, more dynamic punch in the bass. Lately I have been using First from CD to pre-amp (it removes a little of the 'edge' from poorly recorded CDs) and Second from the turntable head amp, to give a little more punch in the bass on vinyl. This gives me a similar balance from both CD and vinyl, and certainly makes for a musical and listenable presentation from both sources.

The Second is a little more expensive, £20 more than the equivalent 1m length of First, but it does have just a little more oomph behind it. Both are excellent cables, but be prepared to re-adjust, they do things quite differently and certainly don't sound as impressive in an A-B comparison as a good metal cable. But they grow on you and can give one of the most musically relaxing and enjoyable presentations of any cable ●

van den Hul First (1m) £179.99

van den Hul Second (1m) £199.99

Van den Hul UK,
P.O. Box 304,
Maidstone,
Kent.
ME16 8TS
Tel: 0622 721636





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Danish Cream Cornet

Budget it may be, but Robert Wilson finds this loudspeaker from Jamo is neither brassy nor brash

Danish loudspeaker manufacturer Jamo has certainly set its stall out for the budget market with this aggressively priced package. For the 'special' price of £129.99 you can purchase the Cornets with a mahogany finish, plus a pair of Jamo's own AP 20 stands, which normally retail separately at £40.

The speakers are nicely finished in a vinyl wrap with classy designer curved edge to the front baffle.

The main drive unit is a 4.5 inch woofer supplemented by a small soft dome tweeter. Both are tightly screwed to the enclosure which measures 320x195x220mm, and the cabinet is vented by a rear facing port whose edges are rounded to reduce the 'chuffing' noise that is all too often present when a ported speaker is working hard. The Cornets present the amp with a 6ohm impedance, the makers claim, and sturdy, gold-plated binding posts are provided, although the speakers cannot be bi-wired. Unfortunately, the Jamo stands were not supplied for the review so I used them with heavy, twin column Targets which complemented the Cornets quite well. First disc into the CD transport was an old

Dire Straits favourite - Love Over Gold.

Initial impressions were of a gentle, self-effacing speaker which retained a laid back, slightly reserved character. The acoustic guitar and Mark Knopfler's voice were well positioned, just slightly behind the plane of the speakers as was the marimba on the left, although the piano further back in the mix was noticeably lacking in space and sounded quite tinkly.

Generally speaking, the whole image was a little lacking in dimensionality. No 'out of box experiences' here! With percussive tracks the reserved nature impaired the musical drive and with some Stones numbers, like 'Undercover', sounded disjointed, failing to blend the various elements of the mix. Mick was his usual infectious self, jumping all over the place and although the Cornets didn't fully capture the dynamic swings as he moved on and off the mic, you could certainly picture him dancing around it. Fellow glimmer twin 'Keef' was nicely rounded out with plenty of raw power when the speakers were driven hard.

It was the rhythm section, however, that let the speakers down, for the bass was anaemic and lacking in pace. Luckily, proximity to the wall didn't cause the port too much stress, allowing bass reinforcement.

These speakers would certainly tame the brash top-end of many Midi systems. Even when listening to over-the-top Disco mixes with a persistent over EQ'd high frequency content the Cornets still remained composed, but alternatively some may find them a little too understated.

As usual with speakers, it's horses for courses. If you have a system that is too aggressive, especially at the top, then the Cornets will certainly calm things down and add some relaxation to your listening ●

MEASURED PERFORMANCE

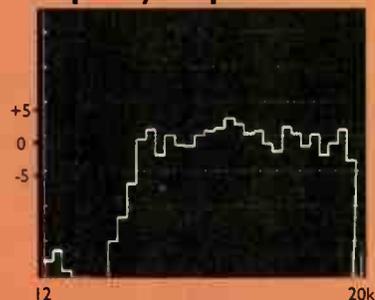
The Cornet 30.111s are one of the least expensive loudspeakers we have ever reviewed. If you discount the stands from the price they come out at around £90. But, nonetheless, Jamo being a large company with good test equipment and a large engineering department, they still manage to turn in a very respectable measured performance.

Flat within ± 2 dB across the majority of their frequency range, the Cornets show that respectable results can be obtained even with cheap drive units. There is also a slight hump in the midband which will push vocals forwards, and although quite lumpy, the treble is free from any prominent spikes that could be heard as sharpness. The bass doesn't go particularly deep, but I could hear no undue whistling from the rear firing reflex port.

The Cornets have a high overall impedance of 10 Ω and the impedance curve doesn't dip below 8 Ω across the whole audio band. This is quite important for a budget loudspeaker, which is likely to be driven by low power amplifier unable

to supply massive current. They are of average sensitivity, 86dB, and so should go reasonably loud with a 30watt minimum transistor integrated DB.

Frequency Response



Impedance



There was no way Audio Innovations could produce an integrated amplifier for £300 and use valves. The need for costly output transformers and the price of the valves themselves prohibit such an exercise. So, the company that claims to be the world's largest manufacturer of hi-fi valve amps decided to use transistors. The only reminder of valves comes in the Alto's exterior, whose Sixties styling harks back to when the valve was king.

The result is a transistor amplifier shaped much like an imaginary flying saucer of the period, with the addition of a large Cyclops eye in the centre of the front panel.

A conscious attempt has been made to style this amplifier more strongly than others in the range, to the extent that whilst the more expensive pre-amplifiers rely on off-the-shelf control knobs, those on the Alto are custom-made. The styling is definitely in one of those 'love it or

hate it' idioms, but either way, it does feel solidly built, which should appeal to all.

Audio Innovations are certainly hoping that visual impact is going to sell this amplifier. Whilst the front panel carries custom knobs and a blue LED indicator - expensive items on a £299 integrated amplifier - the internal components, which determine sound quality and performance, are fairly standard.

I found the Alto was well suited to light acoustic/vocal music such as Grant Lee Buffalo's Fuzzy album. On 'The Hook' it gave a snappy, crisp sound with a light and open balance. It had a relaxing sound

at low levels although there was a little unwanted rasp to the treble.

The Alto imaged well, placing performers firmly between the 'speakers and the soundstage grew outwards to give a good sense of atmosphere. It didn't have a great deal of depth to it, but a wide sideways spread gave the amp an open and expansive sound.

Moving on to 'Soft Wolf Tread', on the same album, gave an altogether different impression. The increased complexity and addition of a bass line

floored the Alto. It became quite coarse in the mid, confused by the extra instruments and increased tempo. And the bass was dry to the extent of sounding hollow with no real ability to move any reasonable volume of air.

I was lucky to catch an early EP of the forthcoming Blue Aeroplanes album as it passed through the office a few weeks ago, and this was the next to highlight the

MEASURED PERFORMANCE

Audio Innovations like to engineer their amplifiers subjectively, on the basis that if it sounds right, then it is right. This approach hangs together up to a point: who decides what sounds right, and by what standard? It is possible to engineer an amp this way, but extreme care and diligence are needed, because of the adaptability of the human cognitive system. The Decca London cartridge phenomenon is the most cogent example I know of how our ears can be fooled and just how measurement, properly interpreted, acts as a useful guide to prevent this happening.

The Alto produces large amounts of

distortion and, much above one watt, the harmonics are extended up to fifth order components and higher - see the spectrum analysis at 12watts. In the midband distortion measured 0.6% at 1watt, but 0.3% just below (-1dB) full output. Interestingly, there was little change at high frequencies: 0.7% at 1kHz and 0.4% at 10kHz.

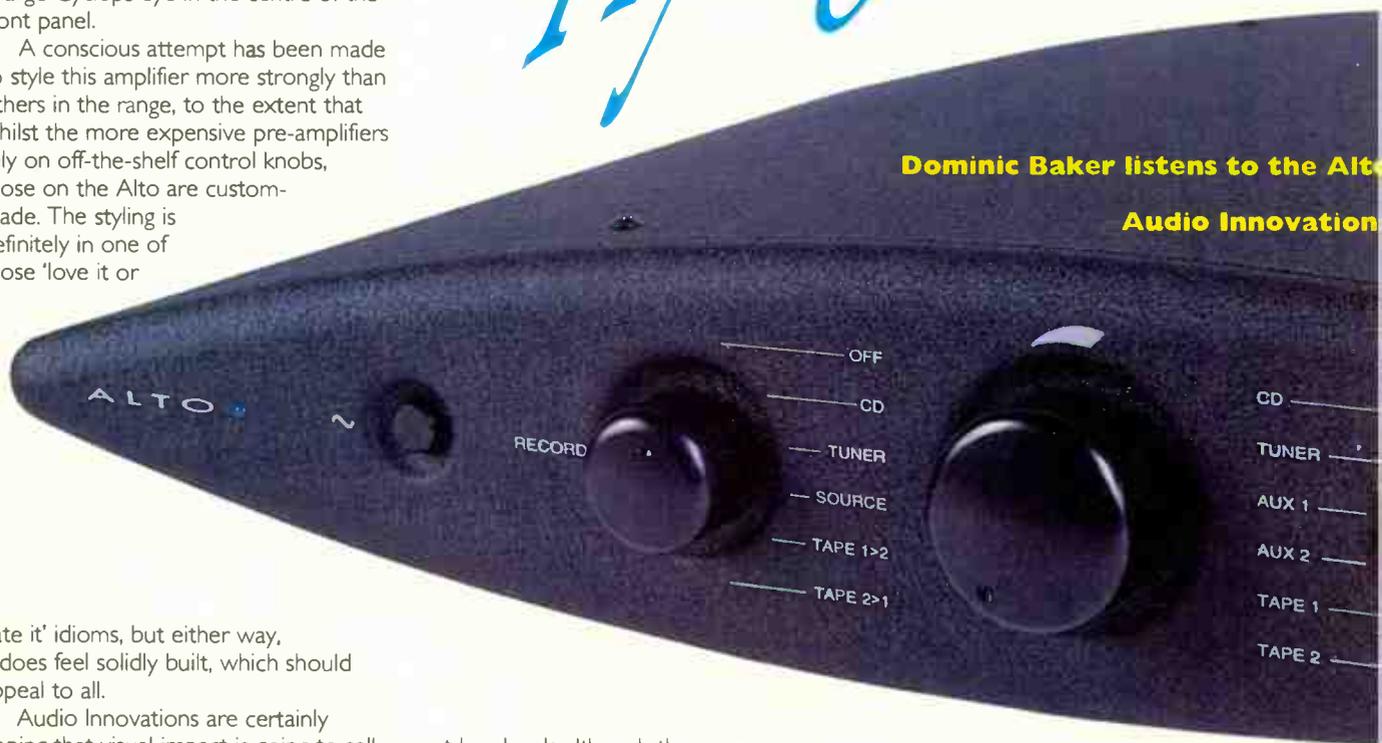
This appears to be a low feedback amplifier where the designer has hoped to avoid the suspected sins of feedback. In my experience, you cannot get away with these levels of distortion unless it is mainly second harmonic in nature; CD has shown us just

how higher orders are noticeable and in what way they affect sound quality. The Alto only fares well in consistency of level with frequency. But whether this will redeem the Alto I somehow doubt.

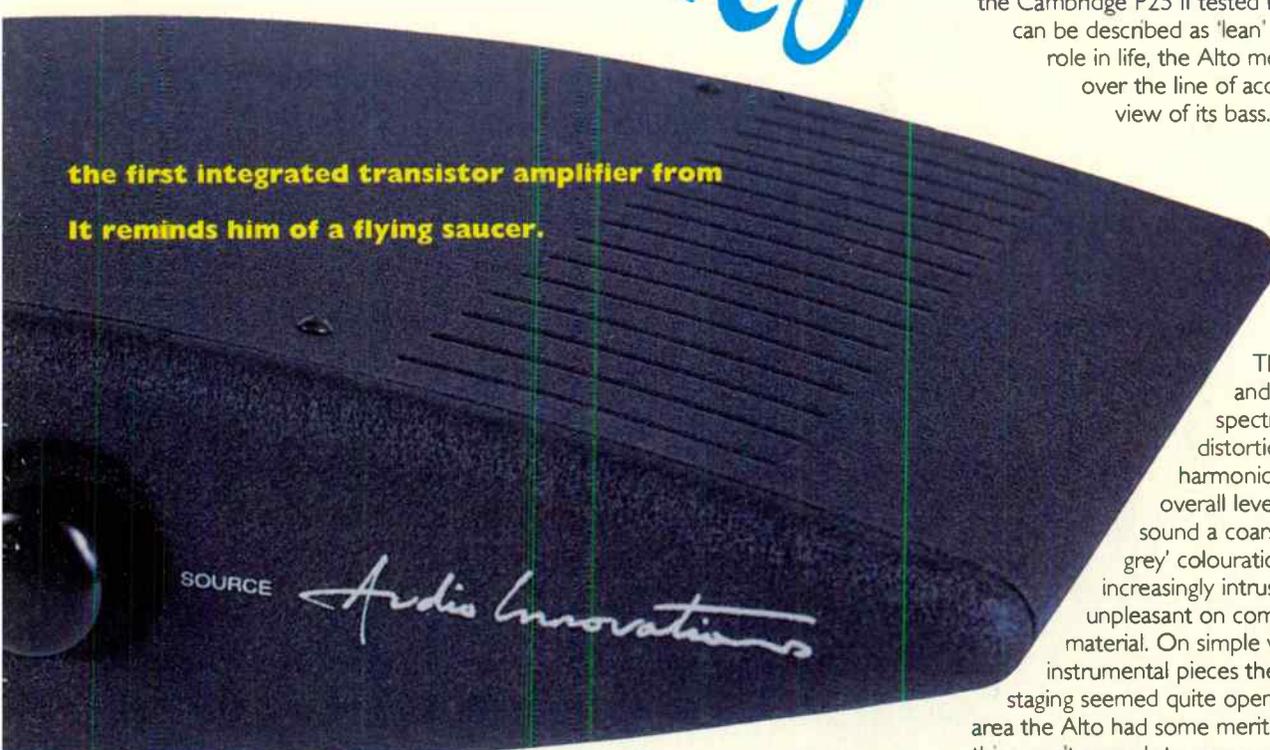
The other most-curious feature is fast bass roll off (-12dB/octave) below 40Hz. The impact of this is well known: it produces clean, fast bass, but also a sound lacking weight or slam. The complete absence of DC on the output suggested the use of output coupling capacitors and lifting the lid confirmed this. The upper response limit was high at 150kHz.

Flying Back

Dominic Baker listens to the Alto
Audio Innovation



to the Sixties



the first integrated transistor amplifier from
It reminds him of a flying saucer.

Overall? Questionable. If you fall in love with the styling and listen to simple acoustic music at low levels, the Alto can turn in a respectable result. Otherwise, there are just too many compromises that come through in its sound quality.

Noel says:

After measuring the Alto I listened to it to see what degree of correlation existed between the measured performance, which was poor, and sound quality. The bass was unacceptably light in my view, lacking even a hint of bottom end power. Whilst amplifiers like the Cambridge P25 II tested in this issue can be described as 'lean' but find a role in life, the Alto moved just over the line of acceptability in view of its bass.

The complex and extended spectrum of distortion harmonics at a high overall level gave the sound a coarse and 'dark grey' colouration that was increasingly intrusive and unpleasant on complex material. On simple vocals or instrumental pieces the sound staging seemed quite open and in this area the Alto had some merit. However, this wasn't enough to compensate for its problems, I felt ●

Alto's shortcomings. The title track 'Broken and Mended' is a full blown rock track, lead guitar, bass, drumkit, all full of energy. Played at any reasonable level it sounded compressed and thin. The treble became splashy, unable to differentiate between the drum stick hitting the cymbals and the following ring from the brass. It was fast, but too light by far. Plugging in a REL subwoofer rectified

some of the problems, but this adds £500 to the price, and the midband and top end still grated.

Moving back to simpler recordings the Alto was more comfortable. Suzanne Vega, Texas and Belly all achieved enjoyable results, but even then, the character of the Alto over-ride that of the vocalists. And every now and again, as their voices rose in level, they had an unexpected tendency to shout.

Alto £299
Audio Innovations,
Albany Court, Albany Rd.,
Gramby Ind. Est.,
Weymouth, Dorset.
DT4 9TH
Tel. 0305 761017

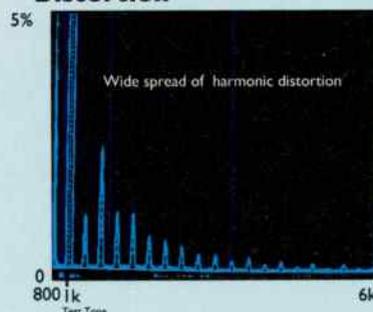
Otherwise, the Alto was conventional enough, producing a useful 32watts into 8ohms and 42 into 4ohms, having a normal sensitivity of 300mV and low noise and hum, but a somewhat poor (24dB) channel separation at high levels that improved to a useful 42dB at average signal levels.

I would expect the strong distortion with extended and varying harmonic structure to make itself known, especially with a high upper response limit of 150kHz. The lack of deep bass will be heard too. To my way of thinking, this amplifier is the result of a peculiar and extreme design philosophy. **NK**

TEST RESULTS

Power	32watts
CD/tuner/aux.	
Frequency response	37Hz-150kHz
Separation	42dB
Noise	-93dB
Distortion	0.6%
Sensitivity	300mV
dc offset	none
Disc	none

Distortion



Denon have traditionally done a fine job with cassette: their decks have consistently been amongst the best available at any price point. But with the budget DRM-540 I wondered whether, nowadays, it was realistic to try and market a deck at £159.99. With Japanese material and labour costs rocketing, their budget cassette decks have been suffering in particular; I'd have guessed £200 was a minimum figure for a good machine these days. Would the DRM-540 prove me wrong?

It looks smart enough, that's for sure. Denon adopted clean lines and restrained styling, free from meaningless 'turbo' legends, many moons ago. The DRM-540 carries a neat array of transport controls, with large, clearly marked buttons. The tape compartment window gives a clear view of the tape but, of course, at this price no back-lighting is provided. There's some noise from the mechanism as it reels tape (slowly!) and some sloppy

clanking noises when Stop is pressed. The reel brakes could have done with servo-assistance it appeared, since the reels came to a halt none too sharply, paying out spare tape into the cassette shell.

All the same, our sample worked adequately and suffered no jams. Its performance is about what I'd expect, and Denon do in fact fit a two-motor transport with a dedicated capstan motor, which is a good sign. A large, legible, blue fluorescent display shows recording level, with 0VU set at a normal level - neither high nor low. Metal tapes can be taken to around +3 or so on music peaks, high performance ferrics and chromes just a little higher.

There's a four-digit tape counter with zero-stop (memory), track search, return to record start position, automatic tape type selection and an MPX filter, used when recording stereo VHF/FM broadcasts. Denon also include bias adjustment - and it works with metal tape,

as well as ferrics and chromes. Adjusting bias matches-in tapes by altering their high-frequency response, bringing it flat so as to avoid either emphasised or dull treble. It also removes amplification of errors by the Dolby system, this deck possessing Dolby B and C noise reduction, as well as HX Pro treble headroom improvement.

The Denon's case was a remarkable one-piece plastic moulding; the tooling for this sort of thing would cost a fortune, but the cases themselves mere pennies as a result. This is the way volume production can lower build costs; NAD in contrast use a veritable jigsaw of stamped metal parts for their rival 602 deck (£200). Denon do, however, fit a real-alloy extruded fascia and a flimsy steel top access plate.

The main circuit board inside possesses adjusters for overall bias level, playback gain and record gain, so this deck can be tweaked as well, but be warned



LITTLE DEMON DENON

As tape decks below a couple of hundred pounds become a rarity, Noel Keywood tests a new example from Denon.

that circuit data, experience and test equipment are needed. And finally, a legend on the front says: Remote Sensor. Believe it or not, the deck can be remote controlled, but the handset is not supplied - it is available as an extra.

Unfortunately, the DRM-540 greeted me with a problem. Casually making a recording on TDK AR ferric tape of The Pretender's 'Show Me' - not a demanding track - I was confronted by opening guitar notes that shook and trembled badly. It was a gruesome demonstration of random drift, something the spectrum analyser had warned of, although I hadn't quite expected anything so obvious.

Subsequently, this blemish became less obvious. Piano certainly had slightly 'cracked pitch', as I call it, but sustained notes seemed to hold satisfactorily, without blatant wow. I'd been caught by the randomness of a budget transport with a weak motor, making it cassette dependent. The AR cassette I used must have been primarily responsible. Swapping to Maxell MX metal - and all Maxell tapes run well - the same notes held reasonably well. So the transport generally manages well enough, until faced with a less than perfect tape. I had to bang some cassettes hard on their side before they'd reel properly, because of limited torque (this flattens an uneven tape pancake).

The same Maxell MX tape provided good recordings, with especially clear treble. However, the deck does rather lack bass slam, which gave metal tape a light sound. This was something I noticed with pre-recorded tapes too. However, using only Dolby B in order to preserve sound quality, there was little hiss from MX and, with bias increased a little and recording level kept to +3 on peaks, recording quality proved good - I heard little muddle, there was an even tonal balance (ignoring light bass) and a general sense of clarity prevailed. So the DRM-540 does work reasonably well with metals - not always the case with budget decks.

Ferric tapes came over as a little muddled, doubtless by treble overload (saturation), when recording level was pushed up to lessen hiss. I suspect bass distortion was creeping in, affecting everything. The Denon was a little less at ease with ferrics than expected, I found.

Maxell XL-II chrome ran well and gave firm bass, yet reasonably clean treble. Neither ferrics nor chromes can match metals for clean, fast transients and lack of treble muddle, yet XL-II offered a high standard of recording quality all round. The drawn-out slide guitar intro to Roy Rogers 'Bad Situation' held steady, the drums sounded fast and lean and his nasal vocals were well etched. The DRM-540 showed it could give good enough recordings.

There's a certain air of unpredictability to budget cassette decks; they're victim to many problems, some transitory. The DRM-540 generally worked well, even if it

did seem a little uncertain about itself at times. Used to the confident stability of a dual-capstan Nakamichi, I find budget cassette decks can be a little unsettling - as this one was. Yet it gave good recording quality on chromes and metals in particular and it replayed pre-recorded tapes without muffling them. It leaves me thinking that budget decks now have to make some dubious compromises to reach price levels of the sort that existed a year or two back and that, if possible, a

little more needs to be spent for more stable and predictable results. However, amongst the dwindling band of decks priced at less than £200, the DRM-540 is as good as any ●

Denon DRM-540 £159.99
Hayden Labs Ltd.,
Hayden House,
Chiltern Hill, Chalfont St. Peter,
Bucks. SL9 9UG
Tel: 0753 888447

MEASURED PERFORMANCE

The tape head of a budget deck is an item that needs close attention. If the manufacturer has been too stingy here, there's little chance of success. Denon's tape head on the DRM-540 just holds up. It suffers more distortion than usual - 7% instead of 3% on bass notes for example - and it has a ragged low frequency performance, due to head contour effects, so I wouldn't expect the cleanest nor the most even-sounding bass from this machine. However, its high frequency extension was adequate, metal tape hitting 20kHz, and its overload headroom was reasonable too, being a few dB above IEC 0dB reference level for all tape types - a good result. Ferrics, chromes and metals can be taken above 0VU when recording, to about +3dB - +5dB or thereabouts.

Denon had set the head azimuth of our review sample well. On replay it reached up to 20kHz on one channel, although curiously not on the other. This would skew images toward one side of the sound stage with pre-recorded tapes. However, the deck should also sound bright and clear with commercial pre-recorded, although a little bass light too, since bass output falls away below 50Hz. The transport ran at the correct speed and replay hiss measured low at -60dB so, all round, this deck will handle commercial pre-recorded reasonably well.

The transport possessed some slow random drift under analysis, although short term wow and flutter variations were quite low. I'd expect some random pitch changing to be occasionally evident, but not so much warble from capstan wow or roughness from flutter.

The Dolby system worked satisfactorily, although Dolby C was 2dB short of its full noise reduction potential and some low level motor drone components were obvious under spectrum analysis. Whether this would be audible only listening tests can tell.

Denon fit user-adjustable bias and tests showed it worked with metals, as well as with ferrics and chromes. Denon have biased the deck so that metals accept strong treble signals, at some loss further down the audio band, so expect clear, clean treble from metal, but not high overall recording levels. Quality ferric tapes are often the best choice for budget decks and the DRM-540 looked good with them under test.

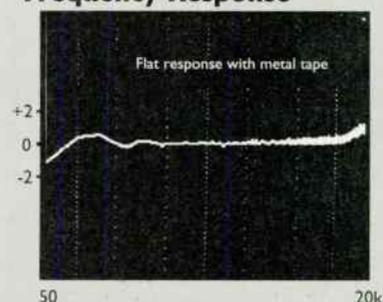
Budget cassette decks these days show their compromises. In the DRM-540 Denon use their expertise to balance them well. **NK**

TEST RESULTS

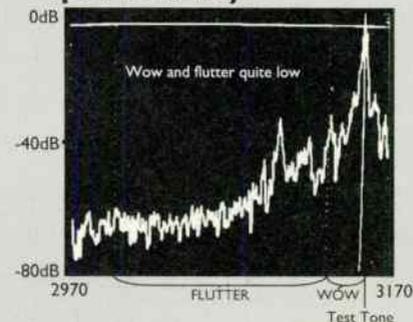
REPLAY (pre-recorded tapes)
 Frequency response (-2dB) 30Hz-20kHz
 Speed accuracy +0.6%
 Hiss (70uS, Dolby out) -60dB

RECORDING (blank tapes)
 Frequency response (IEC Primary Refs.)
 ferric (IECI) 20Hz-16.5kHz
 chrome (IECII) 20Hz-18kHz
 metal (IECIV) 20Hz-20kHz
 Separation (1kHz) 48dB
 Distortion (315H) 1.4%
 Hiss (70uS, Dolby out) -56dB
 Speed variations (DIN total) 0.06%
 Flutter energy (3-3.13kHz) -26dB
 MOL/SAT (IEC Refs) 315/10k
 IEC I (ferric) 4dB/-5dB
 IECII (chrome) 2dB/-3.5dB
 IECIV (metal) 2dB/+1.5dB

Frequency Response

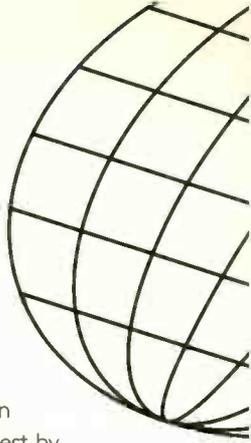


Speed Stability





World



CURSE OF THE PYRAMIDS

I am writing this letter to try and find out what is actually happening at Hi-Fi World at the moment.

Over the past few months I have noticed that you have a policy of putting coloured backgrounds on the pages where equipment is being reviewed. Sometimes it is hard to make out the words (Vol 3 No. 12, page 48). Also wrong photographs have been printed to equipment reviewed. (Vol 3 No. 12 page 34 and 36) but there are some amusing new things about Hi-Fi World.

The new photo of Noel Keywood (Reflections) looks like the Editor has either sat on a very warm valve amp or a rather large Krell has just been dropped on his hand.

And Mr Dominic Baker does not get away with anything either. The photo (dB On The Level) looks like an advert for Head and Shoulders.

So come on chaps, lets get

back to basics. Good reviews, the right photos, and no silly coloured backgrounds.

**M. A. Golden
Chadderton,
Lancs.**

We're trying to find out what is happening at Hi-Fi World too! The answer lies with Fifi, our layout artist. Why she chose to change pics and why she likes such colour schemes are mysteries as great as the Pyramids. But then, since Fifi is Egyptian, perhaps this is to be expected. Your letter has been passed on . . . **NK**



Fifi - the culprit

SCOTS THRIFT

I am a member of a newly founded Hi-Fi Club on the North Coast of Scotland. We

are an enthusiastic bunch wanting to up-grade our systems. If you could hear the very best of our systems you would understand why. We are all unemployed (yes, it's bad up here too) and therefore can only spend a fiver or so each on the up-

grading.

My own system is best by far. It has home-made speakers, one comprising an 18" Goodmans unit and a pair of 2" mid-range units (obtained from Fishermans Tales, who lives up the road, I

Letter of

What a welcome innovation Dominic Todd's turntable review was in your December 1993 issue. Anyone with his system based around a Manticore Mantra, moving coil cartridge, Pioneer A400 and Celestion SL600s, but with much customised tweaking, is clearly an enthusiastic and full-spirited iconoclast, immune to the vagaries of fashion! Amidst manufacturer talk of 'total one-stop system solutions' his is no accident and a breath of fresh air. This is not a man who wears his equipment lightly; and his writing provides the perfect antidote to some of Hi-Fi World's wilder technospeak.

It was amongst the technospeak that I found myself delving, looking for a cheap skate RIAA head-amp when I came across this from D.B. 'opening up £600 amplifiers to find them populated with 50p chips makes us groan'. Elsewhere, he and I share disappointment in the lack of innovation in the Hi-Fi industry and its belief in

competitive pricing, of which the £600 amplifier above is a perfect example: it's priced at £600 because that's where its competitors are priced, not because there's anything like £600 worth of bits inside. But was it ever otherwise?

To my mind this is another fascinating side of our hobby, perhaps a microcosm of British Industry. The hi-fi business is driven by 'innovative' niche products.

Picture the scene - our lonely inventor sits up late into the night soldering up amplifiers on the kitchen table, in time for delivery to a shop the following morning. Aside from the fact that these early models are actually no more than working prototypes, he actually manages to sell a few, and by the end of the second month, a friend of a friend, who just happens to be a hi-fi journalist gets to hear one. . . .

The rest, as they say is history, but after a couple of years and a business expansion scheme, a talk with the bank manager over

WIN HI-FI WORLD SILVER PLATED COPPER

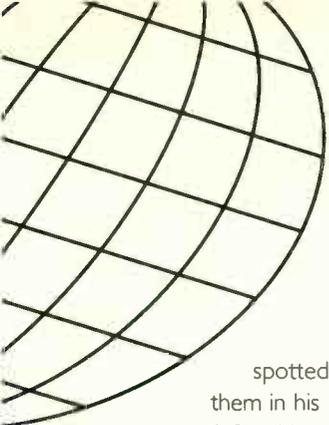
INTERCONNECT CABLES

(1 metre pair)

The writer of the most interesting or funniest letter will receive a free set of Hi-Fi World's silver plated copper interconnect cables, worth £69.95.



Send your letters to Hi-Fi World Letter Page,



writes

spotted them in his garage) fitted into a sealed chipboard enclosure.

Eat your hearts out boys! The other speaker is a more compact unit comprising a 6.5" Goodmans woofer (£2 from a car boot sale) into an

enclosure of unknown make which was found in Billy's back garden complete with a working tweeter! This unit has made a great improvement to my overlay sound definition and is light years ahead of the blown car speakers it replaces.

My amplifier is the real

heart of this system though - a Sony receiver/tapedeck. This was obtained from Brian in Helmsdale, who had given up on it and was about to fling it out due to the expired tape deck and the machine-gun-like background noise emitted from the amplifier. If it wasn't

for the painfully harsh mid-range I would be more than happy with it.

The tapedeck is a good old Triumph TC-400 which is in fairly good working order considering it has spent twelve months on a filthy bench in Fred's goat shed, subjected to horrifically damp conditions.

Corrosion, thankfully, had not gone too deep and apart from having to remove the lid every so often to free the mechanism, it has performed superbly. Although the sound quality of this piece of equipment leaves a little bit to be desired it has proved to be a real work-horse (since I have no other source, it needs to be).

As you can see, we are in need of some slightly better equipment up here for the desired upgrading to take place. We can't afford to be too fussy as we are more or less dependent on contributions. If anyone would like to contribute any un-used, inferior or discarded equipment to our worthy cause, we would be more than happy to receive it. Seriously now - we are not joking.

Rob,
The Cottage,
Charleston Farm,
Dunnet
Nr John-O-Groats
Caithness
Scotland KW14 8SY

Was this written tongue-in-cheek or screwdriver in 'Sony receiver tape deck' (whatever that is)? We don't know, but if any other hi-fi clubs want to investigate and offer a bit of charity, contact Rob - he and Fred's goat sound deprived. **NK**

the Month

roller-coaster cash flow problems yields a business plan and a marketing scheme. Those amps always had a good reputation for reliability and what with the glossy brochures as well - recession? What recession?

However, something important has happened on the back of this 'burgeoning British success story'. The amplifier company became BIG - sure, the range and the company expanded, but in inverse proportions to its capacity to innovate. The company needed to maintain its entrepreneurial flare and crucially, to be able to borrow money for its next innovative breakthrough. Unlikely in the present climate, hence the cynicism of the new model change for next year and competitive pricing.

What's to be done? UK manufacturing appears to be on the slide, but Hi-Fi World is to be applauded for its own innovation in the publishing world, with your DIY supplements, which in turn allow us to build low-cost innovations into our own systems. Although I

won't be following you down the Single-Ended path (with high efficiency speakers), an MC cartridge with head amp does appeal. But can I learn to solder before the next supplement?

Chris Moorhouse
Poole,
Dorset.

I'd say your perceptive analysis of a typical company start up and ossification cycle is spot on! Beyond a certain size, sales and marketing become formalised into the company structure, as current commercial wisdom dictates and, at that point the outlook of the time takes over from the sort of gut instincts or perhaps niche interests of the company's founder(s). This can be both good or bad, but it is more often the latter.

As you say, the product range has to be 'rationalised' and renewed at regular intervals to stimulate demand. It is at this point that real innovation flees; change is then made for change's sake. This is the safest and most comfortable

position for management, who are under the gaze of both their accountants, who have a statutory reporting duty, and the bank. Adopting the same sort of approach and policies as everyone else is easiest to justify. Luckily, there are always dissenters who retain their own unique vision and can see past marketing hype through to genuine and worthwhile product development that can in turn result in very buoyant trading. At present, some of Britain's best hi-fi companies are doing great business, yet at the same time others are experiencing a lot of difficulty - that's the way the market is at present.

We are having fun developing new projects. The 300B amplifier now has no feedback at all, because it has been improved and now sounds best without it. A feedbackless amplifier is an almost unique animal and we are proud of it. However, we will be offering simple, solid-state projects in the future, of the sort you request. **NK**

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

CATHODE FEEDBACK

I have read with great interest details of your circuits for valve amplifiers. I am nearly 80 years old and many of my pre-war memories in radio service public address work was with valves such as PX4, PX25, KT66, KT75, KT88, EL34, including 807s, many in parallel push-pull.

Hi-Fi World is taken regularly each month; it confirms what I have always been sure of - that valve sound quality is the best.

I used to work in a factory lab with a large company after war service in radar. I am sending you this extract from Practical Wireless 1962 on ultra-linear cathode loading because it has not been mentioned in your article. I believe it was published by Practical Wireless as subject to patent. It is of course a cathode-loading method and was highly thought of at the time as low in distortion.

C. Wright Skegness, Lincs.

Thanks for the circuit. We are always interested in innovations that might have been forgotten. However, in this case we recognise distributed loading, pioneered by Peter Walker and Theo Williamson and used in the output stage of the Quad II power amplifier. Independent low impedance windings provide feedback into the cathode and it does give good results. **NK**

CIRKUS

I am certain that the Cirkus modification has substantially improved my Linn LP12 turntable in every conceivable area, including timing, musicality and authority, and all the areas where the deck was previously criticised, like accuracy and imaging. The surface noise has dropped by an unbelievable amount, in spite of this being one of the LP12's many virtues, and loath

though I am to admit it, it even renders some digitally recorded material acceptable for the first time.

Best of all it has again and again allowed the meaning behind the music or lyrics to shine through where previously they were unintelligible or just bland. The staggering increase in 'solidity' and authority imparted by the Cirkus gives me the uncanny impression that the 'needle' must have been bouncing around out of its groove before. If Lingo advances the LP12 by one order of magnitude, then Cirkus advances it by two. I am just extremely grateful that Linn didn't price it that way!

In spite of its ability, I search in vain for an intelligent

perhaps it doesn't like his glass top.

The Cirkus has not excited an acid note in any of my records and has, on the contrary, demonstrated a tremendous smoothness, even though the dynamic range has dramatically increased. Indeed it has rendered my harshest records listenable without removing any of their bite. Jonathan Kettle's '74 Sondek vs '93 Sondek hardly mentions the Cirkus - and where the devil is Malcolm Steward's review, or have I missed something?

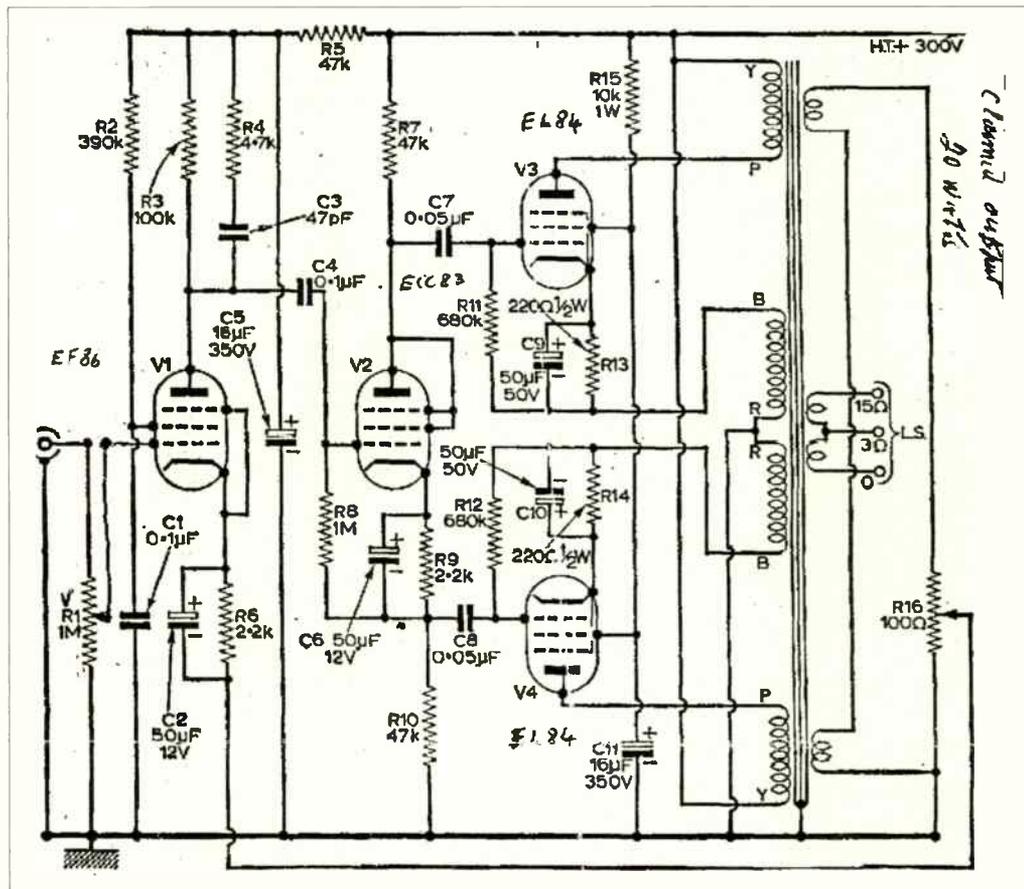
I've had my Cirkus update since June this year and have yet to read a review that begins to do this massive upgrade the justice that it deserves. Please, in fairness to

of the Cirkus.

Richard Hatton East Sussex.

For readers not acquainted with this modification, the Linn Cirkus comprises new inner platter and spindle, main bearing housing, sub-chassis, arm board, replacement of springs, grommets & drive belt, cost: £285 fitted.

The Cirkus and Klyde are victims of Linn's change of direction. They now have a sales area in Harrods which, we are assured, costs a fortune. From such a venue, and from other prestige outlets around Britain, Linn told me they hope to move into what they believe is a more affluent and less critical market than the one of their



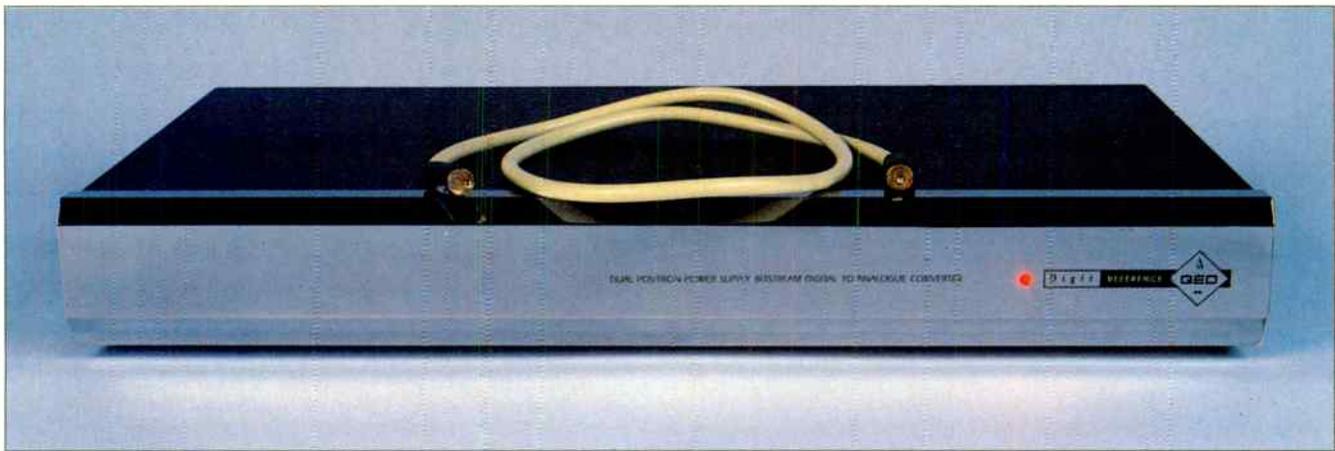
Ultra-linear cathode loading - Practical wireless 1962.

review of the Cirkus (or the Klyde for that matter). The Hi-Fi News review by Chris Breunig was acceptable, but hardly did the Cirkus justice, and Paul Messenger's review in Hi-Fi Choice was really disappointing; it works brilliantly with the Naim,

Linn who have done so much for both audio and British industry, for the benefit of those who are crazy enough to believe what they read in hi-fi magazines, and for the satisfaction of those who have heard and already know, let someone do a proper review

beginnings. The conspicuous wealth they hope to be able to capture, commonly referred to as the 'B&O market', demands a different approach to marketing of product (glib expression,

continued on page 45...



A NEW QED REFERENCE

**Dominic Todd listens to the dual-Positron powered
Digit Reference, in new shiny chrome case.**

Where QED got their idea of a twin-power-supply Digit from, I can't possibly imagine! Regular readers will remember that when Hi-Fi World tested the Digit and the then-new, Positron power supply a year or so ago, we found that the performance could be usefully improved by the addition of a second Positron. Now QED have brought out their own twin-power-supply DAC, the Digit Reference housed in a single full-width case, complete with *de rigueur* chrome front panel and understated graphics. This came as quite a shock after the usual plastic boxes, more reminiscent of a £4.99 alarm clock, that QED products are often housed in. This marks a move by QED up-market, and is matched by an equally up-market price of £450.

There's stiff competition at this price point. QED will have to trade punches with the excellent DPA Little Bit II (£450), the well established Arcam Black Box (£450) and Select Systems' keenly priced Dacula (£395).

The technical specification and inclusion of good quality Digiflex and Optiflex digital and optical cables goes some way to justify the price. With twin power supplies, the digital and analogue circuits built into the Digit have separate feeds. This should help reduce distortion and improve resolution. Additionally the circuit board does at least feature a complete ground plane, and a vertical brass shield to reduce distortion and prevent digital noise entering the audio output stage.

I was interested to see if the new QED would show noticeable improvements over my own Cambridge DAC, which is getting rather long in the tooth now. The Digit Reference was most at home with sparser music such as early Prefab Sprout. The over-riding impression was of a DAC that was in firm control of the music. The separate power supplies certainly appear to be effective as far as separation is concerned. Vocals were distinctly separated from the rest of the mix, although, against some of the competition, they could sound a little two-dimensional. The QED demonstrated fine detail, and instruments were always cleanly reproduced. So far so good. But the 7323-based DAC showed up its weaknesses

against newer DAC-7 and Crystal convertor designs. Although the bass was tidy, it was never particularly deep or extended, giving the sound a somewhat lightweight balance.

With All About Eve's *Touched by Jesus*, there was an occasional muddying of vocals that detracted somewhat from the clarity shown elsewhere. One characteristic of the original Digit that has certainly been carried through to the Reference, is its ability to really strip a recording down and give it 'bite' and attack. For example, the electric guitar was vividly portrayed, and each riff clearly distinguishable. However this can also materialise as a slight hardening in the mid range, especially if the recording isn't as good as it could be.

Despite the Reference's clean and punchy balance, it lacked any real dynamics, a characteristic that did little to help the rather too analytical nature of the DAC. With some types of music it could sound thin and wearing in the long term. Albums such as Mike Oldfield's *Crisis* are brightly recorded, relying on a deep and tight bass to avoid the sound becoming ear-splitting. Here the QED fell down somewhat.

Zachary Breaux's 'Groovin', recorded live at Ronnie Scott's Jazz Club, was produced with a believable 'live' atmosphere, and Breaux's guitar work really bubbled with enthusiasm. Once again though, the bass tended to lack grunt at the bottom end, which prevented the music from becoming really involving.

Chamber music, such as Corelli, showed the QED in a good light. It gave each individual instrument a sense of space, the end result being a broad and realistic sound stage. Violins could occasionally sound harsh, though; another area where more modern digital techniques used in the Digit's competitors show up its slight lack of refinement. Otherwise, the lack of really deep bass wasn't a problem here, as neither cello nor chamber organ demanded it.

QED's full-width case with chrome front panel is light years ahead of what QED usually turn out. It was also nice to see that QED had gone to the trouble of supplying decent quality coax and optical cables as standard. These also turned in a good performance and you'd need to spend at least £40 on either to see much of an improvement.

Yet the sound isn't quite so impressive. It has all the qualities that make the Digit and Positron such excellent value for money, but at nearly twice the price fails to make a comprehensive enough improvement. It's fine with sparser Pop, Jazz and Chamber music, but can become trying with anything more complex. It's not only refinement it lacks; comparing the DAC to my own Cambridge, I felt that it was reluctant to produce really deep and extended bass.

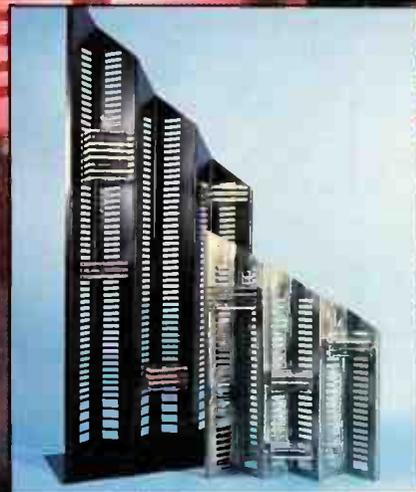
My advice is to stick with the superb value Digit and Positron, or if you're in the market for a DAC of this price take a look at what DPA and Select Systems have to offer ●

On the Eighth Day...



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FRED'S CAPACITOR CRISIS

Dear Val,
When I first switch on my system one of my speakers produces a little noise, not unlike a cross between an Intercity train and Brian Blessed belching. Obviously, I would like to solve this problem, as when guests visit they invariably think it is me. Fred Kenner Macclesfield.

A spot of noise suggests the capacitors need replacing in your power amp. However, I would suggest you eat less bran - just to be on the safe side. VV

NEIL'S CRANKY CABLES

Dear Val,
I recently bought an enormous length of cable from my local dealer. It was a copper stranded affair with a sensible price tag, so I thought I'd done quite well. However, once at home I connected it up and went to switch on - nothing happened. It was then that I realised I don't actually own a system. What do you suggest I do?
Neil Sharples
New Malden, Surrey.

You obviously need cables with a sweet treble and clear midrange. Van den Hul do an excellent silver plated oxygen free cable. Try it - Oh... and don't forget to buy a system. VV

GRANNIE'S WINTER WARMERS

Dear Val,
My poor gran's ears suffer terribly from the cold in winter so I decided to buy her some smart 'phones to wear whilst shopping and going about her daily business in general. I opted for Beyerdynamic's DT331s which have particularly large circular ear cushions which can be comfortable and warm. However, she wears a lot of silver jewellery and these particular 'phones require gold plated jacks. Help!
Donald Gregory
Eltham, London.

Poor gran, I suggest



VAL-VAMP'S PROBLEM PAGE

Problems with your front end?

Maybe you can't get your cross over?

Basically imbalanced?

...well don't fret, you're not on your own. Write in with your problem to Val Vamp, aka Caroline Knott, Hi-Fi World's very own resident agony aunt, and she will endeavour to solve it - or at least offer some practical advice (a problem shared and all that. . .)

Vivanco's IR 9001s. They're slightly more expensive, retailing at £119.19 but they are infra red headphones that receive music from a transmitter. Failing that, Woolworths do a lovely range of candy striped fur hats at £2.99 each which should suffice. VV

OFF THE RECORD

Dear Val,
I recently aquired some 'Sunsplash' storage units for my extensive vinyl collection and have found I can only fit two or three albums in each one. What am I doing wrong? I have enclosed one for your inspection.
John Wilson
Scarborough, W. Yorks.

This is the 'Sunsplash Orb'. You need the 'Sunsplash Cube'. The orb is shaped like a goldfish bowl and is therefore unsuitable for anything much other than goldfish. VV

A CD SILENCE

Dear Val,
I recently bought an expensive CD player which I took home to use. It was extremely quiet and I returned it, presuming it was faulty. The dealer had a good laugh at my expense when he pointed out the fact that there was no plug on it. Needless to say I was a tad embarrassed, but not half as embarrassed as him when he realised he'd sold me a sandwich toaster in error! Just goes to show you, eh?
Johnny Fletch,
Sidcup, Kent.

It certainly does Johnny. If any other readers have an amusing or embarrassing experience relating to the purchasing of their Hi-Fi, please write in and we can ALL have a good laugh at their expense. VV

PLUGGING BANANAS

Dear Val,
I've always been a little on the forgetful side but this

recent experience really does take the biscuit. When a friend informed me I needed to improve my connections with some banana plugs, I dashed out to my local dealer to buy some. A while later my friend passed the local estate agents where he spotted me drinking bubbly and celebrating the purchase of a rather large banana plantation in Honduras. Have any other readers had a problem of a similar nature?
Andrew Lynch
Stevenage, Herts.

No Andrew, I shouldn't think so. But, if any readers ARE particularly scatty or forgetful, write to us (NOT your local gas showroom) and tell us of your experiences. VV

A TIP OR TWO

- 1) Fool neighbours and friends in to thinking you own the latest esoteric system by throwing a brief but wild party during a home dem. Ask the demonstrator if he wouldn't mind serving drinks.
- 2) For a cleaner sound from your valve amp, clean all valves with Windolene prior to play.
- 3) Always keep Isopropyl Alcohol and haemorrhoid ointment well separated in your bathroom cabinet.
- 4) To combat the frustration of listening to other people's loud, hissy walkmans, travel on the tube or train with a blank tape playing on your own walkman at full volume.
- 5) Forget multiroom installation. Purchase wall to wall mirrors throughout your home and hey presto! A reflection of your system from anywhere at which you can aim your remote control.
- 6) Whatever you do, do NOT attempt to wash CDs with cheap washing up liquid. "Fairy may cost that little bit more but it also lasts that little bit longer. 50% LONGER in fact etc., etc.●"

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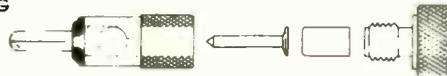
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...continued from page 40

that), one not really in tune with the likes of specialist hi-fi magazines.

Consequently, Linn are not overly fussed about providing products for review, except where they can be assured of a friendly and uncritical reception - which counts us out! We have asked for the Klyde for review many times, but Linn refuse to supply it. In truth, of course, it would probably receive a favourable review, since Linn moving coils have always been amongst the best. However, the Kremlin tuner was a pretty lacklustre device, which I stated was easily bettered by a Leak Troughline, and that seems to have upset them.

Linn are not interested in supplying product into what they perceive as 'hostile territory' such as Hi-Fi World (you need to understand that many manufacturers genuinely believe their products are perfect and believe that any criticism of them in the press derives solely from spite - or some other irrational factor). So don't hold your breath for a thorough Cirkus review, 'cos Linn aren't interested. All the same, I'm glad you feel this upgrade is worthwhile. Other readers with Linn turntables (which we like) will doubtless take note.

Personally, I believe Linn won't find a pot of gold at the end of the 'lifestyle' rainbow they're currently pursuing and that they'll return to dedicated and high spending enthusiasts like yourself in the near future. **NK**

CHARITY HI-FI

The nucleus of my system is a Leak 2000 AM/FM receiver - yes, the Rank era - but it still sounds nice driving a pair of Leak 'sandwich' speakers. I bought them at the beginning of last year, separately, from our local charity shop for £25.00 and £30 respectively! This is a curious week-by-week

affair in a 16th century cottage - different charities each week!

Some two months later a '2001 Transcription Unit' turntable appeared in the same place - it shows design influences from everywhere, but nothing definite: belt-drive, suspended sub-chassis, unipivot arm, with 'Patent Sphere dynamic' suspension, cost - £110. I secured a new set of balls for £20 - one had split and the other two perished, plus a belt and manual. They were very easily installed and, fitted with an ADC QLM III cartridge, this turntable sounds very well indeed.

My next purchase - yes, again from the same emporium - was a Leak 2002 cassette machine (alias Nakamichi, I'm informed), again £15, and this needs serious attention to the RH relay channel - advise me, please.

After a seven month hiatus, a big box in a corner of the same place proved to be a Revox G86 open-reel recorder - for £25.00. A tweak of the variable impedance inputs and all my 20+ year old tapes made on my old Ferrograph came back into playability - my wife didn't even object to its being on permanent display - could that be said of a Ferrograph?

A second-hand cheapo Fidelity CD player (£40) completes the ensemble, oh with a pair of Audio-Technica Headphones I won in a Church Raffle (10p).

Total cost, to date, £140.10, with my own design of MDF, spiked floor stands being made now, and decent FM aerial and quality interconnects pending perhaps another £100, a fair-value system for a ludicrous price!

Your advice would be appreciated over repairs to the cassette machine and a replacement cartridge, crossover components etc. to keep the system as original as possible, since performance is already more than adequate for my surroundings (and purse). Would it be too much

to ask for a suggestion of approx. value for insurance purposes as well?

**Mike Dent
Cottingham,
East Yorks.**

The unique feature of the Leak 2001 turntable was four suspension balls filled with energy absorbing silicon fluid. I remember a demonstration at a press reception by Dr Barlow, where he thumped the table supporting the 2001 with a large mallet - and the arm didn't so much as tremble. It certainly looked effective as a suspension system, yet the turntable seemed to have a short commercial life. I don't know where you managed to find new balls for it, because Mr Escot at Leak/Wharfedale, who was there at the time as they say, tells me the company making them no longer exists, so they are now unobtainable. Mr Escot confirmed that the 2002 cassette deck was made by Nakamichi and that it can be serviced, but yet again spares are limited. Contact him at Wharfedale on 0532-601222. And by the way, Wharfedale are now in effect owned by Mission, although they are to become a totally independent operation in engineering, staff and product terms. After a disastrous few years however, business is now booming and Mr Escot in the service department can help on all Leak/Wharfedale matters, spares permitting.

The value of a system like yours is, generally, minimal. Only certain vintage items, like Quad Electrostatics, can consistently command high-ish prices. However, if you value it highly, then insure it appropriately. **NK**

SINGLE MINDED

I write with reference to Dominic Baker's article 'DB On The Level' appearing in the October issue of Hi-Fi World in which he describes the highly desirable and efficient

coupling of single-ended amplifiers with high sensitivity speakers.

Could you please list suitable choices of each of the above. I am about to invest in these items and having taken heed of the warning 'These are expert kits, not for the inexperienced' on page 63 of your magazine; I feel obliged to go for the 'off-the-peg' variety and stay away from the idea of building my own.

And how do these 'commercially' available items compare with your KLS-1 3-way floor stander the 300B 28W amp and the soon to be published single-ended, integrated amplifier kit?

Having been 'dizzied' by so much hardware and incomprehensible 'software' talk in hi-fi shops, it is good to see that someone has espoused a single idea to the fullest extent.

I look forward to hearing from you and thank you for your kind assistance.

**Hayder Al-Hassan
London.**

There are very few commercial single-ended amplifiers available at present. Audionote make the Oto and Soro valve single-ends, which are designed and built in Britain - and are affordable! The Oto SE uses paralleled EL84s and provides 12W; the Soro SE uses paralleled 6L6s to give 18W. Prices range from £1149 up to £1999, according to whether you want a valve phono stage, a line-only amp or a power amp. The Soro is most flexible, due to its extra power. Contact Audionote at 0273-220511 to find where these amps are on demonstration.

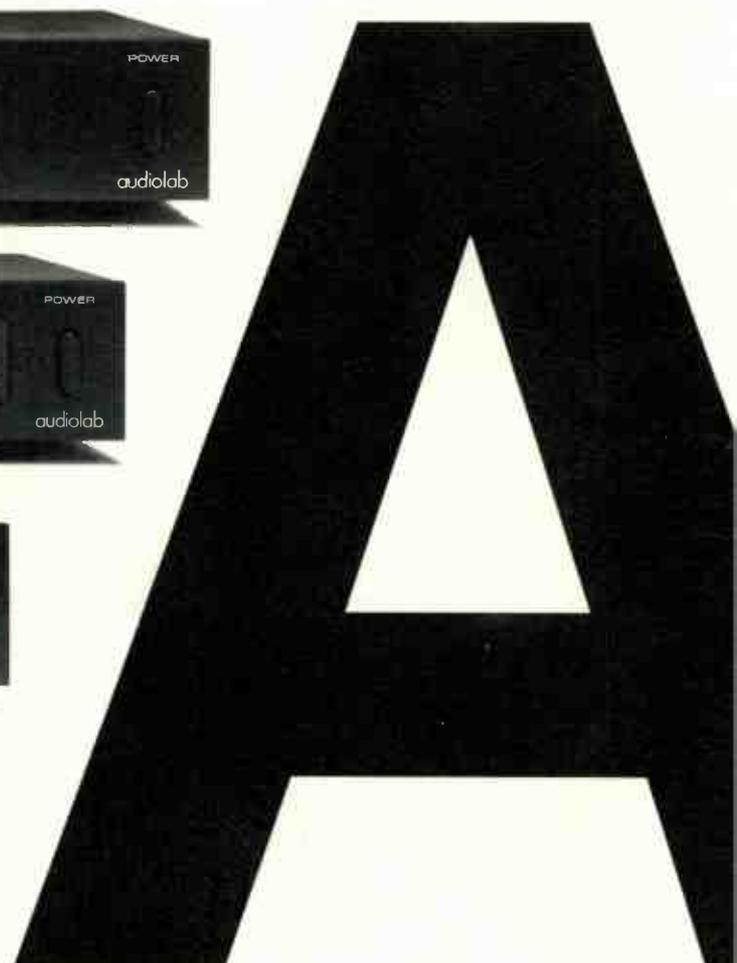
Not on demo at dealers, but available for audition at the factory unit in Hove (near Brighton) are the Japanese-made Neiro, Kassai, Kagiki, Ongaku, Kego and Gaku-on (push-pull). Handbuilt only when a full moon appears

continued on page 47... ▶▶

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...continued from page 45

during the grasshopper mating season, these range in price from £10,000-£138,375.

We haven't, as yet, designed any equivalents. Our own single-ended offers 4W at around £390 and should be available soon. The 300B amp is push-pull, but a paralleled 300B single-ended monoblock will be made available by the end of the summer - but it won't be cheap. The transformers required are absolutely huge and the metalwork is heroic in scale. Most of the components will be custom-made though; off-the-shelf components are just not of an appropriately high quality for true hi-fi work we are finding. **NK**

USING GRADIENT SUBWOOFERS

I much enjoyed the "Quad Supplement" but, having used an ESL-63/Gradient SW-63 combination for about two years now, I did not feel that either Eric Braithwaite or Dominic Baker did them justice in their separate evaluations. I was warned by John Smith of K.J. West One, the first importers of the Gradients, that they took time to sound their best. This was good advice; after six months use they were appreciably fuller and more open, and they combined even more closely with the ESL-63s. I remain convinced that they represent a good investment for anyone owning ESLs, particularly if they have a spare amplifier.

The opening out of the sound of the ESL-63 which the crossover provides is as much an advantage in my view as the extra bass. The combination competes favourably with the highly expensive U.S. made panels and the sub-woofer match is rather better than some of the competing hybrids. My sub-woofers have been transformed since I followed the advice of the US magazine "Stereophile" and began using them with a

Bryston 4 NRB amplifier and (almost to the same extent!) since I changed their spiked feet to a more substantial floor penetrating variety.

Dominic Baker put his finger on the real weakness of the Gradient conversion when he drew attention to the cheap and rather nasty crossover. Having tailored the sound of the ESL and matched it to the sub-woofer so brilliantly, Gradient (who produce some noteworthy loudspeakers themselves and should know better) sold their own design short. At the last Penta I asked the Gradient representative whether an upgrade was planned. I got an equivocal reply which I took to mean "no".

Now that Quad have taken over the distribution of the ESL-63 from K.J., might they not produce a crossover with a bit more class? While I have never been a fan of Quad amplifiers since the demise of the 22/11 (a splendid piece by Haden Boardman by the way) the Maplin-type tin box and its contents hardly matches the beautifully designed and made 66 Tuner or CD player or Quad's "armchair control" image.

While the real solution for Quad fanatics would, of course, be an ESL-94 along the lines of the Sound-Lab A-3, but with Quad know-how and its legendary after sales service (and sensible U.K. pricing), I would settle for a Quad designed and made crossover keeping within Gradient's superbly judged parameters.

**Jim Hastings
Oxfordshire.**

PS: By the way, if you find an amp that takes a real grip on the sub-woofers you may find, as I have done, that separating them from the ESL 63s in order to find their optimum position in the room does not really work since it emphasises the split between the two units which, in their normal position, is virtually imperceptible once the system has "settled in".

Thanks for your observations. Other readers will, I'm sure, be interested to learn from your experiences. However, we still protest that open baffle, dipole subwoofers cannot simply be pointed at a listener, as they have to be with the Gradient, and give optimum results. I developed a crossover to integrate Quad ESL-63s with Celestion SL6000 dipole sub-woofers some time ago and worked through the problems, gathering a lot of experience with dipole orientation and placement in a wide variety of rooms, and Dominic runs the system today.

As Celestion pointed out initially with their SL6000s, they must be orientated to match a room, as well as positioned ideally relative to the wall. In general, whilst such subwoofers can be placed in the usual loudspeaker position and sound approximately correct, we find that in most cases for the bass to sound smooth and deep, they have to point outwards. This sort of positioning is impossible with the Gradients. Pointing dipole subwoofers inward has, in all cases we have come across, resulted in overblown and loose sounding bass. A fascinating aspect of dipole bass is the way it changes in character as you walk around the room; the corollary is that there is an optimum listening position for such subwoofers.

All this might seem unduly complex - and it is! Celestion used a computer to work out optimum room positioning for owners of the SL6000, for example. We've spent an enormous amount of time on the subject, trying to find more empirical room matching rules to eliminate this necessity and we believe it is possible, but need to experiment more to determine whether they are widely applicable. I think you can understand our cynicism toward manufacturers who

market products whose theory of operation they seem to understand poorly.

The crossover is a different matter again and, to integrate a Quad into a subwoofer, some subtle psycho-acoustic work has to be done. Because of the dimensions of the Quad panel it starts to lose bass output through cancellation up at many hundreds of Hertz. The high pass filter that feeds the Quad needs to gently correct this loss, for example.

Furthermore, at worst the crossover should be based around a very high quality silicon chip, not a cheap NE5534 or TL071. Personally, I couldn't stand the thought of using yet another chip in my crossover and found, after experiment with our FFT and a test jig, an ultra high current gain FET that would do the job on its own with minimal distortion and massive headroom (130dB), due to ultra low noise and a high operating voltage. This particular FET always oscillates and tries to destroy itself unless all sorts of precautions are used, but it is a transparent device audio wise and an elegant and correct solution. Stuffing metal boxes full of ICs isn't clever at all, I have to say; there are far better ways of designing hi-fi products.

However, in real life, products we may frown upon technically can still work well enough to provide pleasure, as your letter proves. If the proof of the pudding is in the eating, then Gradient's culinary efforts are good enough it seems.

We will soon, I hope, be able to publish my own crossover in a DIY Supplement, to better illustrate the nature of these problems, as well as providing technically effective solutions for experimenters so they can make their own. Also, see our News section for Tim de Paravicini's - ahem! - radical solution to this problem. **NK**

Studying Cambridge

"I designed the first one back in 1986" Stan Curtis told me on the 'phone from Wharfedale in Leeds, "but it was discontinued when the P40 came out. Then Hi-Fi Markets revived the P25 when they bought the Cambridge name, putting its manufacture out to the Far East, but using an updated version of my original design. Wharfedale then bought the name, but when Mission in turn bought Wharfedale, Cambridge was sold to Richer Sounds, who have kept its manufacture in the East. That's the history of the P25 and the origins of MkII version, which is really MkIII! It explains why the version you are testing follows my design principles, rather than those commonly used in the East, but they've probably been modified by others."

The history of this amplifier reflects the labyrinthine politics of the UK audio industry, through the commercially choppy seas of the late Eighties and early Nineties. Once upon a time Cambridge products bore the distinctive stamp of Stan Curtis (he's now Technical Director at Wharfedale), whose skills became widely appreciated in unusual products like the Cambridge CD-1, and CD-2 CD players and the Cambridge P40 amplifier. Testing the new P25II I realised that although it bore most of his hallmarks, such as high frequency band limiting (rolling off treble above 20kHz, the limit of human hearing), it also possessed early bass roll off, which seemed uncharacteristic.

"You didn't design in bass cut on the CD input did you?" I enquired. "No, I believe in extended deep bass for CD" Stan assured me.

I was trying to determine just how

A British integrated amplifier for £120? You must be joking! Robert Wilson and Noel Keywood investigate this Richer Sounds bargain.

much of this new Cambridge P25, built in Taiwan for Richer Sounds and priced at just £119.95, was attributable to the original designer, and how much had been tacked on later by way of modification or addition by persons unknown. What I was really trying to establish, I suppose, was its pedigree: was the new P25II a thoroughbred or a mongrel? Its lineage has been watered down a bit, it seems, but much of the original animal remains. All the same, the changes have had an impact.

The new P25II is interesting technically, as well as commercially. It has limited-action tone controls that finely trim spectrum extremes, rather than upset the entire audio band. This makes them subtle, but precise in their trimming action, offering just enough variation to suppress tweeter/cartridge treble peaks for example, whilst not upsetting the overall tonal balance of the system and they can be switched out if desired.

The low case profile and control knobs with a shallow dish, both style features of the Cambridge brand, have been retained, albeit in palid form. Nevertheless, build quality was good enough, the chassis being a complex jigsaw of stamped metal parts with a well finished front extrusion forming the fascia, as is common nowadays. Inside, the board and components are of normal grade, but

the number of discrete transistors suggested this was the original Cambridge circuit, rather than an Oriental substitute.

There's no shortage of inputs and, surprisingly at the price, a disc stage that can accept moving magnet and moving coil cartridges has been included. Tests showed that the moving coil option is a simple one where $\times 10$ gain is switched in downstream from the input, so the loading conditions remain MM at 47k with around 220pF in parallel.

Sitting down, preparing myself for that warm, punchy, almost meaty sound that I remember from my youth as a Cambridge sonic trade mark, the first few bars from the P25II came as a slight disappointment. Just as the lightweight build quality of this latest model does not resemble the heavyweight construction of the old P40s I fondly recall, neither did the lean bass. This modern-day Cambridge is a dry, slightly hard-sounding amplifier, coming across as academic in comparison to the muscular sound that I know so well and had anticipated.

The lack of low-end grunt led to a rather constrained overall presentation; I got the impression that something was missing from the original studio mix, as if a couple of channels had been lost on the multitrack. This leaves the mid-range very prominent, which isn't always a bad thing as vocals and solo instruments are on the

MEASURED PERFORMANCE

The P25II has a distinctive measured performance, reminiscent of earlier Cambridge designs, which bore the distinctive stamp of Stan Curtis, a long time UK audio designer of repute. However, the P25II departs from earlier Cambridge products too, possessing bass roll off below 24Hz on CD, something not in Stan's design repertoire at all. So others have contributed their little piece to this design. Rolling off bass on CD is neither common nor especially useful, but at least the P25II covers bass fundamentals well enough, but it certainly will not have earth shaking subsonics.

Very typical of Stan Curtis though is a high frequency roll off above 20kHz to lessen various distortions that result from a budget design. This gives a warm or smooth sound,

but one that is generally relaxing to listen to. In fact, the P25II starts to roll off above 10kHz and is -1dB down at 19kHz at all positions of the volume control, which is a bit drastic. It is normal to prevent the actual audio band from drooping.

Both the MM and MC cartridge stages were band limited too, warp filtering setting the lower response limit to 40Hz, whilst high frequencies extended to 23kHz.

The amplifier produced very little distortion and what there was comprised second harmonic, with a small amount of third. There was little increase at high frequencies - a good sign. It suggests the amplifier will have clean sounding treble, free from obvious harshness.

I was surprised to find the tone controls

work in perfect Cambridge fashion, lifting only higher treble or low bass by 3dB or so, producing just a subtle but useful adjustment at frequency extremes. They can be switched out.

Power output measured 40watts, or 64watts into 4ohms. A 4ohm switch resets the mains transformer secondary to give less volts but more current when working with low loads, improving transient current delivery. The P25II gives plenty enough output to go loud with ordinary loudspeakers of around 86dB sensitivity.

In spite of its low price, the P25II has both MM and MC disc stages. The MM input was very quiet, sensitive and possessed a high overload margin. The MC was sensitive, needing just 0.25mV for full output, but it was



whole portrayed well, being projected forward from the speakers, making them both clear and intelligible.

Male vocals, such as those from John Lee Hooker, Gerry Rafferty and Eric Clapton were certainly communicative, although the amp sometimes tended to add a hard quality to some of the more mellow ballads. The effect was tolerable on rough, forceful rock or heavy blues numbers, but quieter moments did tend to show this fault up, giving singers a hard 'electronic' edge.

Instrumental timbre was differentiated well, making it easy to appreciate differing tonal colours, as well as the textures of solo guitars, both electric and acoustic; their images were solidly placed too. The delightful woody quality of Hammond organ and Fender-Rhodes piano also sounded good, but unfortunately acoustic piano again tended towards an upper midband hardness, becoming a little metallic. It was also dynamically restrained, reducing the insight into musical expression, perceived through the use of an instrument's dynamic range.

The budget limitations of the P25 were highlighted in the upper midband

where female vocals took on a shouty quality; Mariah Carey didn't so much sing as force me to listen! I was rather taken aback. This was also true of the percussive blasts of brass: they became overpowering. The P25II had a cold, steely top end, but it wasn't as gritty or coarse as that of so many budget amplifiers, even if it didn't shimmer like the better amps can either.

I suppose I was disappointed that the Cambridge 'sound' has gone from the P25II, and that in its place comes a presentation less to my taste. However, this latest version offers good power output, a clean midband and satisfactorily smooth treble free from budget coarseness. Matched with speakers possessing heavy, underdamped bass and healthy treble output, like B&W 620 is, it will sound balanced and persuasive. So here's a budget amplifier with good potential, only it must be approached with care.

MM SOUND QUALITY

Following on from my initial disappointment with certain aspects of the P25's sound, I decided to try it in a

system with some speakers that would counter the bass-light character present in the amp. Using the B&W 620is and now feeding the amp with quality signals from a Garrard/SME/Goldring vinyl system into the MM input, I was greeted by an appreciable increase in bass output and quality. On the whole it was fuller and rounder, although still lacking a bit in extension.

The MM input was certainly quiet and most definitely didn't sound like a cheap afterthought. In fact the more lucid treble and slightly softer mid, which had a tendency to shout before, did increase listening pleasure quite significantly. Part of this was almost certainly due to the smoother character of vinyl, but the Cambridge had to have a good phono stage in order to exploit this. The inclusion of such a good MM/MC input at this price is certainly great value ●

CAMBRIDGE P25II £119.95
Richer Sounds,
2 London Bridge Walk,
London, SE1 2SX.
Tel: 071 403 1201

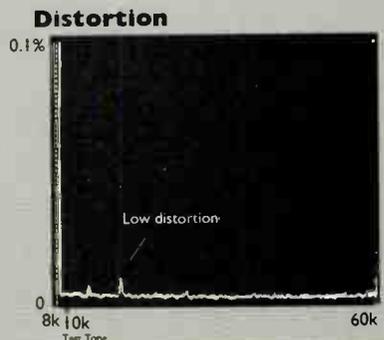
not especially quiet, so low output moving coils would not be an ideal match. Also, it shares its input impedance with the MM stage, meaning 47kΩ is presented to the MC cartridge. The MM input had a low input capacitance of around 200pF, which loads cartridges correctly. So the MM disc input measured very well and MC was good enough to do the job, but you wouldn't run a Koetsu through it.

This amplifier has a good measured performance, but with some peculiarities, notably curtailed bass on CD and treble that starts to roll off in the audio band. I'd expect it to have light bass, plus a warm but smooth presentation with clean treble. The MM disc stage in particular should give fine results with LP. NK

TEST RESULTS

Power	40watts
CD/tuner/aux.	
Frequency response	24Hz-19kHz
Separation	72dB
Noise	-93dB
Distortion	0.01%
Sensitivity	200mV
dc offset	4/1mV
Disc (MM)	
Frequency response	40Hz-23kHz
Separation	56dB
Noise	-80dB
Distortion	0.01%
Sensitivity	2.5mV
Overload	150mV
Disc (MC)	

Frequency response	40Hz-23kHz
Separation	57dB
Noise	-63dB
Distortion	0.01%
Sensitivity	0.25mV
Overload	15mV





North Eastern Audio Traders (NEAT) jumped into the boiling cauldron of 'speaker manufacture a couple of years ago with the rather cheekily named Neat Petite. These were very well received as a superbly communicative, musically involving and coherent piece of kit. The only trouble with the Petites was their appetite for rather tasty amplifiers, which tend to cost large amounts of the folding stuff! Therefore it seemed sensible to produce a similar speaker which was both enjoyable and easier to drive.

With this in mind the second member of the Neat family has just been released. The Critique is a small two-way design, like its older brother, bass reflex loaded by a very small diameter rear port. Finished in a glossy textured covering the enclosure measures 320x220x230mm (hwd) and seems to be very sturdily put together, built in mirror-image pairs with the tweeter offset to one side. This is a 28mm treated fabric dome unit with the company logo neatly (yes, I know!) moulded into the surround, crossing over to Neat's own custom-made 160mm bass/mid unit. They can also be bi-wired. I mounted them on heavy stands, quite near to the rear wall with the tweeters towards the inside, for best imaging. The Critiques have a very business-like

Musical Critique

A new small speaker from the Darlington designers of the NEAT Petite faces up to the critical ear of Robert Wilson.

appearance, functional in the mould of a studio monitor, but would they have the analytical presence of a professional speaker?

Neat Acoustics stand firmly by the fact that the main design method employed during the development of the Critiques was subjective, even to the point of only taking test measurements after the designers were satisfied with the performance in the listening room. This is certainly represented by the absence of grandiose technical claims made about the speakers with an emphasis on the use of materials and components chosen purely for their effect on the music.

Bob Surgeoner, Neat's designer, says of this approach that 'In the end it's the music that counts'; so, with the music in

mind we shall begin.

Initially the Critiques were played-in using the Naim NAC82/NAP180 set-up, this dynamic and musically coherent amplifier ideal at highlighting the designer's claim of an involving loudspeaker. I find that small affordable speakers most noticeably lack dynamics. The ability to resolve the important transient content of a musical signal is crucial in allowing the listener to determine the various individual strands of instrumentation used by the performers and composers, to convey their own artistic ideas, as well as the creative intentions encapsulated in the music.

Listening to well-recorded drumming from Phil Collins the Critiques gave me a valuable insight into the sonic signature

which marks out a typical Collins track, that dry tight rhythm punctuated with loads of gated reverb and machine-like consistency produced by even compression of the kick drum. However, the Neats still allowed the emotive human character of the drummer to prevail through all of this signal processing, making it child's play to spot the difference between the authentic Mr Collins and a computerised pattern on a sampler.

The Critiques come across initially as a slightly warm speaker, the bass being a little enclosed as if the small reflex port was restricting the freedom of the drive unit, which seemed at odds with the expressive dynamics available from the drums. This tended to unbalance the speaker to a small degree, leaving the bass marginally detached. However, this snapped back into place when the volume control was wound round. The Critiques are certainly hungry and come into their own when driven hard. They also take a fair bit of running-in to loosen up.

An absolute killer album for small speakers is Fairground Attraction's 'First of a Million Kisses' which relies heavily on a mix evolved from acoustic instruments, particularly solid, deep double-bass, something which the Naims also relish. The Neats made a very good stab at this producing a rounded sound with plenty of texture possessing much of the woody timbre of the acoustic bass, if at times resorting to a faint grumble.

Higher up the frequency range things became very interesting. The Critiques captured the recorded acoustic of a performance well, especially when I switched over to Audiolab monoblocks. For example, using a track from Graceland by Paul Simon where he orchestrates

Ladysmith Black Mambazo into a panoramic spread of voices across the soundstage, the depth and accuracy the Neats conjured up was very impressive. As was the vibrant, deep, chesty quality of bass vocals whose enunciation was precise and succinct. Other tracks on this album showed how adept the Critiques were with a good brass section, the notes beginning with a sharp blast and retaining their vibrancy throughout, accentuated by terrific little off-beats on the kick drum. All this was beautifully layered by engineer Roy Halee's artistic use of reverb, providing space and atmosphere where the Neats again displayed their fondness for ambient detail.

As I mentioned earlier, the Critiques are a slightly warm loudspeaker and they have a darkened tonal quality in the midband which is very gentle, but quite noticeable, particularly with the Naims which also sound a little darkened. This tended to be most obvious with female vocals; for instance, Chrissie Hynde took on a nasal character which thickened her voice although fortunately it didn't impair the musical content, just made it a bit less truthful. Swapping back to the Audiolabs gave vocals less colour, Winwood, Clapton and Collins retaining their forced, strained upper note delivery.

Upper mid and top-end frequencies were well integrated, at times appearing quite seamless. Sade's 'Smooth Operator' was just that, the top being detailed and informative without resorting to the obvious harsh tweeter definition of some speakers. Delicate hi-hat strokes were gently handled by the Critiques, where they were part of the musical picture, not something that was thrust forth into your face. This, along with a gorgeously reedy sax, combined to capture the mood of

the track.

Back to the Pretenders again. On this album, recorded at AIR studios, the cymbals had a wonderful ring and decay (pop into a music store and tap a Zildjian, then you'll know what I mean) very spacious with lots of air (pun intended) around the kit.

To finish off my listening out came a copy of Abbey Road and Jimmy Hendrix's Electric Ladyland. During 'Come Together' the Neats really put the performance across well, especially the ethereal guitar mixed into the middle eight where the Fender-Rhodes and bass open up. Macca was his playful self on 'Maxwell'; you could almost imagine him there all thumbs-up and wide-eyed grin. The Critiques easily encompassed the diverse musical styles in the Beatles repertoire. As for Hendrix, it was all wah-wah pedals, phasing and flanging with a good measure of valve amp distortion thrown in. The intro to 'Voodoo Chile' was a real 'out of box' experience.

The Critiques certainly possess a persuasive character even if it is one that is a little coloured at times. However, they also like a good amp and at £335 will require one with the pedigree of Audiolab's 8000A, a Naim pre/power, or the John Sheame Phase 2 integrated. Anything less will be ruthlessly exposed ●

NEAT Critique £335.00
NEAT Acoustics,
62 High Northgate,
Darlington,
Co. Durham DL1 1UW
Tel: 0325 460812

MEASURED PERFORMANCE

NEAT claim to have developed the Critique using only listening tests - and it shows. All too often when this approach is adopted the result is a loudspeaker that performs only to the designer's tastes. You get a loudspeaker that is ideal for the select few, but of less appeal to the majority.

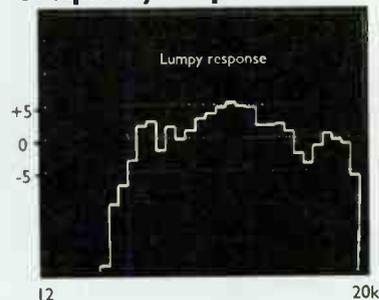
The Critiques are far from flat: there is a strong (+5dB) lift in the midrange, centred around 1kHz, that will tend to push vocals forwards out of the box, as Robert heard. Robert also commented on the 'dark' nature of the Critiques, which is explained by the low treble output compared to the midrange. There is also a suck-out between the midrange and treble, which means that the crossover isn't integrating the two properly. Whilst measuring with pink noise I heard a phasey effect between the midband and treble which probably explains the dip.

Driving the Critiques should be reasonably easy, they are of average

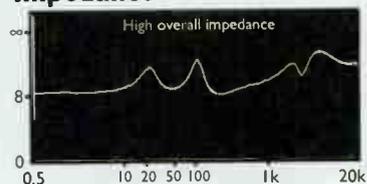
sensitivity, measuring 86dB output for one nominal watt input (2.8V), and overall impedance is high. The impedance curve is a reasonably smooth one and stays above 6Ω, giving a high 9.5Ω overall, so the Critiques aren't current hungry. The sharp notch around 4kHz also suggests that there is a phase problem with the crossover network, explaining the effects I noticed with pink noise.

Overall, the Critiques are a bit of a mixed bag. The lift in the midband will give them an 'out of box' sound and they certainly won't sound sharp. But they aren't particularly accurate either, likely appealing strongly to some listeners, but less to others. **DB**

Frequency Response



Impedance



Sound Differences

Roger Canute,
Anstey,
Norfolk.

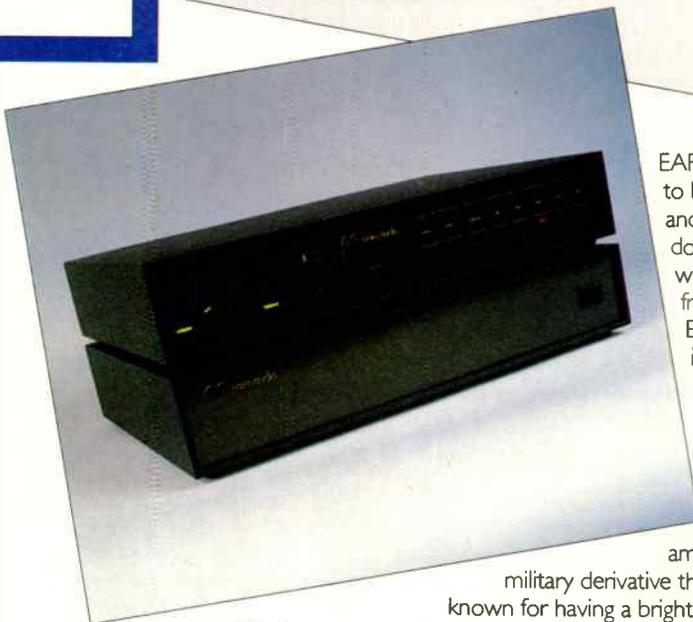
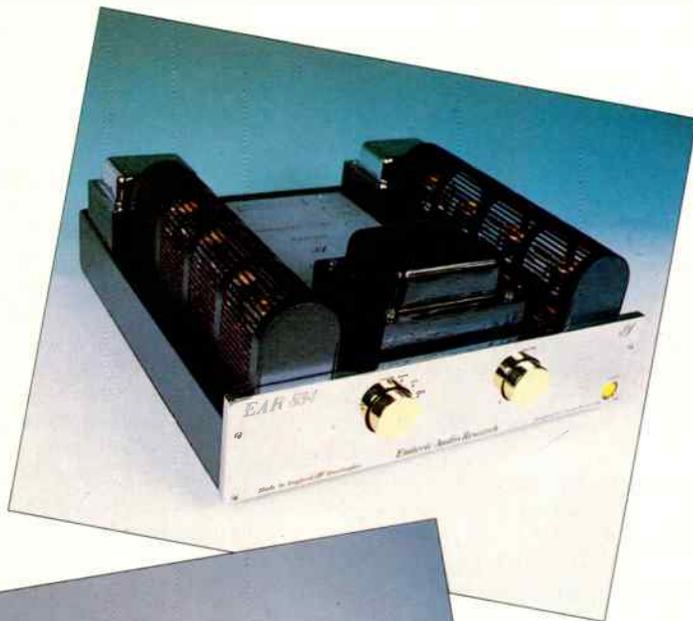
Dear Hi-Fi World,

I was interested in your comments about the accuracy of valve amps, since I am currently being told by many people (perhaps they are behind the times) that solid state amplifiers cannot be matched for accuracy and low noise, even though everybody accepts valves have a fine sound stage.

In order to reduce costs and overwarmness (I'm aware some valve amps are now not so warm) I am considering a valve pre-amp and solid state power amp, but most industry people try to revert me to solid state pre-amp and valve power amp. What do you think?

Roger Canute

Prompted by one of your numerous letters on the subject, Noel Keywood, with the help of a few others, explores the differences between valve and transistor amplifiers.



EAR's 834. It is easy to build-in "warmth" and many designers do this, believing it's what people want from valves. The EL34 output valve is known for its "warmth" and is used to provide a soft sound. The 6L6, which can be used in the 834

amplifier, and its

military derivative the 5881, are known for having a brighter, clearer sound.

It is most common to run a valve power amplifier from a solid state pre-amp. The primary reason is that valve pre-amps have traditionally lacked clarity. However, this is not the case anymore either; modern valve pre-amps, when well designed, are very clear sounding. Audio Innovations' L2 (line) and P2 (phono) are fine pre-amps, and so is the EAR834P valve phono stage. Then there's the Rose RV-23S, which is a hybrid of valves and solid state (phono). At this point you may like to know that Rose make a solid state power amplifier to go with their valve pre-amp.

Generally, a solid state power amplifier run from a valve pre-amp is for those who would like to tame solid state a little. The other way around, you get far more of the valve sound, but with a soupçon of transistor thrown in.

Many readers have asked us to explain differences between transistors and valves. As you've found, there are some peculiar misunderstandings flying around on this subject. Here are our views, as well as those of enthusiasts and retailers. I hope they will give you a helpful and informative cross section of opinion on differences in sound quality and personal preferences, as well as our own experiences, for as regular readers know, we design, build and sell a range of valve amps, from budget to esoteric. This gives us first hand knowledge of the problems, as well as the benefits. But perhaps it makes us a little - er - biased? To try and get a balance, we gave our own K5881 20watt design to an ardent Naim enthusiast (our front cover photographer) and asked him to tell us what he thought the essential differences were and why he preferred transistors.

OUR VIEW

The only objective way in which a valve amplifier can be less accurate than a transistor design is in the way varying loudspeaker impedance can upset its frequency response. But this is not a problem with the majority of valve amplifiers, which have overall feedback and a low output impedance. Otherwise, any apparent inaccuracy can only be a subjective view.

Noisy? No - not this either. An EF86 has $2\mu\text{V}$ of input noise (hiss), which is very low. It gives our budget K5881 valve

amplifier lower noise (-103dB) than most solid state amplifiers. It is, however, true that valve amplifiers hum to a greater or lesser degree, but good engineering can suppress this down to an extremely low level, one so low that the hum will not be heard at normal listening distances (6ft minimum) from any loudspeaker. Each model must be judged on its own merit here, but a generally accepted guideline in the industry is 1mV of hum output maximum. Because valve amps are expensive, expect a demo in which you can make your own assessment of hum.

Valve amps vary in their sound balance, just like solid state amps. Well designed, modern units do not necessarily sound dull or warm: two examples of bright, clear sounding amps are our own K5881 and



LUIGI (Hi-fi salesman, Hi-Fi Confidential)

What's the essence of the difference between valves and transistors?

I suppose it's the warmth and naturalness of valves that I like really. I'm more interested in midband than treble and bass; so long as they are good I can accommodate it. But I hate a midband that is unnatural or not as it should be - and that's the area where valves are best. You get a lovely openness and naturalness, with detail and information, but you don't get the kind of edge to everything that transistors have, if that's how to describe it.

How about the benefits of solid state. Do you think it generally has better bass, for example?

I suppose that's most peoples' way of looking at it, yet I use EAR 509s and I've yet to find a transistor amp that has better bass. If you have a well designed tube amp there's no reason why it can't have bass on par with transistors amps

Do you demo transistor against valve amplifiers?

Yes, we've done quite a few comparisons on that basis. Customers have gone through all the top pre/powers in the £1200 region and afterwards I've plonked an EAR834 in front of them as a closing demo, 'cos it's got the same bass, but the rest is nicer. Almost without exception everyone who's heard that, whether they want to buy valves or not, have said "Oh, that's better!"

Has anyone come in and said "No, I don't like that, I prefer the transistor sound"?

No one has said that. Some people are reluctant because they look at tubes and say "I have to change them", or they want to put the amp into a cabinet and they generate heat, or something. Most people who simply want to listen to music, rather than run a disco in the home, have not said they don't like the sound of valves as such.

I've just had a chap who came in and he listened to seven transistor amps. At the end he was unsure, so I said "OK, try this 'cos you can just about afford it compared to what you have been listening to" - and he'd been listening to things with 40-60watts of power. I put on this little 12watt Audio Innovations and he loved it. The

warmth, naturalness and flow appealed to him - and that's what he ended up with.

So people are put off by practical things: you can't guarantee tube life - most last for years but some can go in a week - but no one has ever been put off by the sound. Mostly, it's the other way around: once they've heard, they're convinced.



ERIC (Freelance hi-fi reviewer)

How would you describe the essential differences between transistor and valve amplifiers?

In the right circuits they've both got merits, but the essence of valve amplification I would term as 'air, space and depth'; it's not dynamics. A valve amp will nearly always deliver a better idea of space and air around performers - and in between them. It has taken something like thirty years for transistors to come close, and there are still very few of them.

What do you think are the benefits of transistors? You use one of the best, the Michell Alecto, so you are well versed in their best qualities.

The Michell Alecto exhibits nearly all of the best properties of solid state. It has amazingly fast dynamics, and a very, very wide dynamic range.

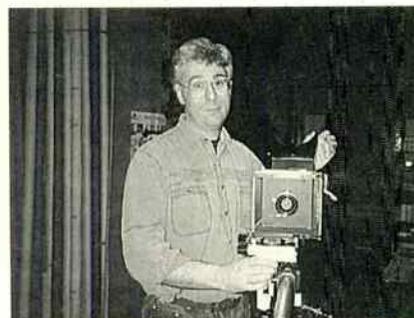
It is the speed with which transients go from a ting to a boom and beyond that a good transistor amp can handle so well. The Alectos have the most effective reproduction of breadth, depth and an almost holographic size to instrumentalists and vocalists. The latter is something valve amps do, the old Leaks being a good case in point. But the classic valve amps of the sixties never managed to gain the spread from left to right that modern solid state amps get today, although they do have amazing depth - especially the Leak amps it always seemed to me.

Do you like the bass quality of solid state?

Yes, because it drives down faster and it drives down firmer. Sometimes it is too clean and is curiously too dynamically restrained or 'tight' it often seems. Valves can stay clean and firm all the way down, Tim de Paravicini's designs among them, but they're rare.

The impact of timpani is always a problem - for both types of amp. Transistor amps produce the initial impact, but the timbral quality of the resonances are

suppressed; you get the attack but not enough of the decay, as it were. On valve amps you get the decay qualities better resolved, but less of the initial attack. Few amplifiers yet seem to offer both, but modern valve amplifiers seem to get a better balance in this respect and so do some exceptional transistor amps, so there seems to be some coming together of the two technologies these days.



PAUL (Our front cover photographer and a hi-fi enthusiast)

When I first heard an Audio Innovations I thought it was running at low speed. It had a big, walk through sound stage, but I was falling asleep. Your K588I was initially pleasant to listen to, but the more I listened to complex bass rhythms the more I realised the valve amp didn't keep up with the transistor; the Naim was quicker and more textured in the bass. There was a bigger sound stage from the valve amp as you would expect - big and lush. The Naim was smaller but better focussed. Altogether, it sounded faster, but the valve amp had better staging.

How would you generalise the differences?

Yours did not sound like a valve amp as I know it. It sounded more like a transistor amp in clarity - and a good one, but without the bass clarity of a Naim.

So you like the fast and well textured bass of a good transistor amp?

Mmm. But the vocals on the valve amp were very well textured across the midband. I played two tracks: a Michael McDonald track with Patti Labelle singing with two voices over-dubbed, plus Philip Yama and there were some complex rhythms going on there. There was a lot more bass - more deep bass - from the valve amp initially. It was big and generous sounding. But once I listened closely I found that it was not so well defined. I prefer something with a bit more snap and grip in the bass. Tonally treble was sweeter from the valve amp, without a doubt.

Generally, in my experience valve amps tend not to play the music that taxes them. Curiously, your valve amp didn't sound soft and shy and it didn't sound like "Oh dear I've got some music to play here - can I do it?" It acquitted itself well - especially for the

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money it is fantastic. There's not much to touch it.

It's a rough, early prototype with random components. A new, built sample I listened to the other day before it went off to Switzerland was much tidier and cleaner in its sound.

It plays loud too, doesn't it. I like to play at realistic levels and it did not run out of steam. That was the first surprise. Pitting it against the NAP250, which is three times the price, it didn't sound three times less expensive, which was a shock.



ROY (A vintage valve amplifier enthusiast)

How would you describe the sound of a valve amp?

They should sound open, sweet in the top and, most of all, there should be space around instruments. They should allow you to listen for a whole evening without being

pinned to the wall by a sound that is initially impressive, but fatiguing in the long term.

Would you say they are bright or bassy?

Most valve amps I have heard haven't had the tightest bass, but I quite like that - a full, round sound, but one that is open and with a big sound stage.

How would you describe a transistor amplifier?

A good transistor amp can come close in many areas, but they don't have the depth. I'm not saying they are bad. Recently I had a Mark Levinson and a pair of Leak TL12 originals. In my opinion the Leaks were every bit as good, even if they didn't have the welly.

It's price as well. You can pick up a good second-hand valve amp for £120, for example. The Leak Stereo 20 is a brilliant amp; I've never heard anything under £1500 that is made now that comes near it.

Do you think transistor amps have benefits?

Yes, definitely: bass and power. Also, valve amps seem more prone to mains problems. They seem to have sweet periods, whereas transistor amps don't seem so dependent.

Do you find valve amps more difficult to use?

Yes, but they look better without a doubt! I first realised I love valves - up until that point I'd had all the transistor amps through the eighties, like NAD, Pioneer, Marantz, Quad - when I got a Croft Series IV. We all have an idea of the perfect sound - well, I found I had exactly that sound.

Other valves amps I found had that space too, that realism. I think that's the thing valves will always have over transistors. I went to the Penta Show and some of the price tags on modern transistor amps were outrageous for what they do, in my opinion.

It's usually valve amps that are seen as more expensive though.

Well, they are if you buy the newer type, but you can still pick up a good Leak or RCA for little.

The pride of owning a valve amp is there too. They are far more interesting, but even if they sounded the same as transistors, I'd prefer them! They are alive and glowing - they're not bland, black boxes.

Would you say you'd rather have the depth of sound stage than the dynamic bass of a transistor amp then?

Yes, because the music I listen to is not heavy rock. With that you might be better off with a transistor amp, but if you listen to acoustic music, with less slam and more ambience, then valve amps are far better.

Valve Amplifiers - The Facts

Upon their introduction, transistor amps seemed to offer a wonderful escape from the domestic intrusion and difficulty of the valve. Do today's valve amps suffer the same problems as those of yesteryear?

1) Reliability

Modern electronic components are extremely reliable, but modern valves vary greatly in reliability. Consequently, fit a reliable valve into a modern valve amp and you will have an amplifier that will run for years before the valves need replacing.

Of valves currently in production, there is unanimity that Russian types are very reliable; Chinese valves are variable in quality. Of valves not now in production, U.S. and European types are generally considered best.

2) Cost

Valve amplifiers are much more expensive to produce than solid state designs, so they will always cost more. There is a move to cheapen them, but watch out: cheap output transformers give mushy bass and warm, smeared treble. Listen

before buying.

Running costs depend upon the valves. Rugged types in current production, like the Russian 5881, cost little (£8-£10 each) and will last for years. Rare obsolete types can cost £50-£1000. Low volume, high quality modern production types like the 300B cost £70-£80.

3) Behaviour

A properly designed valve amplifier should be as civilised and even more robust than a transistor amplifier. Only poorly designed valve amps are temperamental.

A good valve amplifier should remain unperturbed by being switched on and off rapidly, even when hot; it should run without difficulty with the speakers disconnected, but this could in some cases cause internal flashover, so it is not recommended. A valve amp should not squeal with the inputs disconnected and it should easily survive the outputs shorted for a short time (1 minute or so) when running flat out. There should be no significant noise at switch on or off, or significant mechanical or electrical hum. It

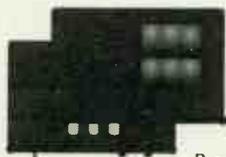
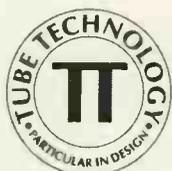
should be able to handle all loudspeaker loads, including electrostatics, without going unstable and squealing. However, specialised low feedback types may not suit certain "difficult" speakers, sounding tonally unbalanced with them. In such a case, the loudspeaker must be chosen with care.

4) Safety and convenience

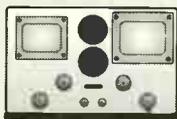
Valve amplifiers have high voltages inside, so they must be earthed. Otherwise, they differ little in fundamental safety to any piece of mains powered equipment. They need good ventilation, in order to dissipate around 250watts of power and to ensure the cathode bias resistors don't overheat.

Currently, most designs are large, but it is possible to get valves into a normal size case, albeit with difficulty (see the AMC CVT3030). However, since modern valve amplifiers are something of a visual spectacle, this is a little self-defeating.

Finally, valves run very hot and they can bum, so beware of exposing them to pets and children.



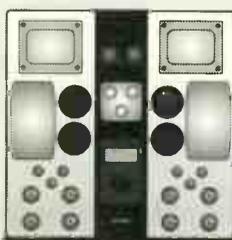
Prophet



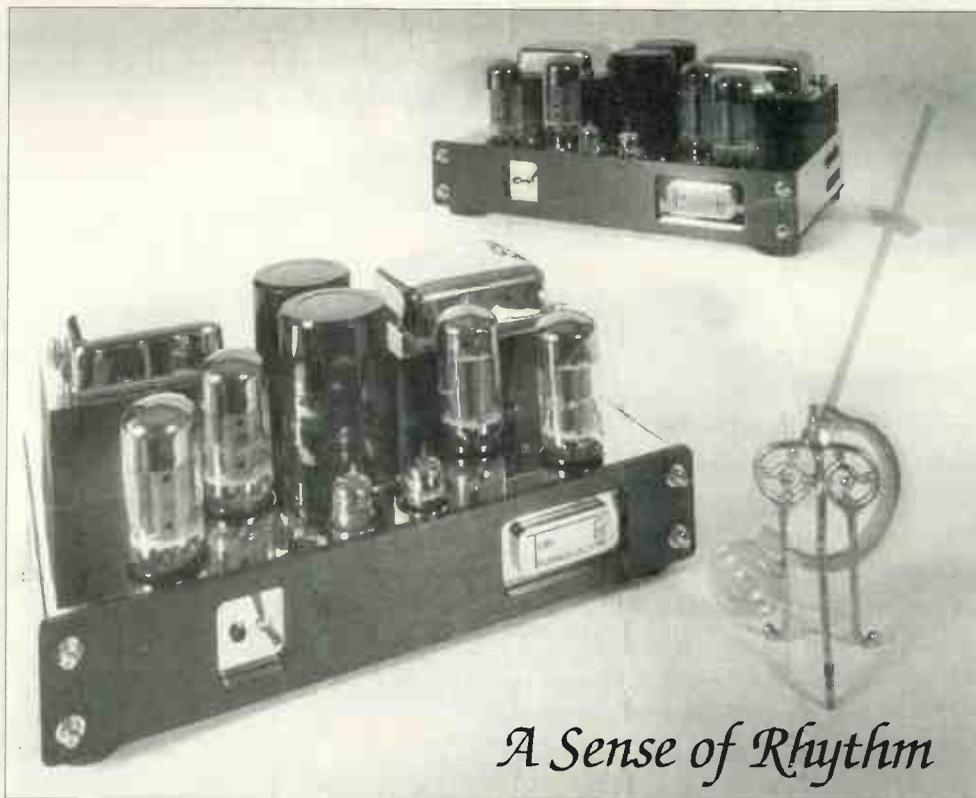
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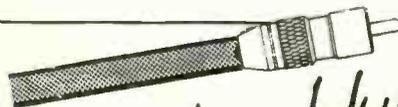
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Power in the Round

review

**Styled to match the shape of
Michell electronics, the
Gyropower QC power supply
for the Gyrodec finds a willing
advocate in Eric Braithwaite**

I fell in love with the Gyrodec's looks from the beginning, so I bought one because I wanted a sculpture for a turntable - and I couldn't afford an Oracle. It was then I discovered it was a hell of a good turntable - with two provisos. One, the better the arm, the better it sounds; and the better the cartridge in the arm, the better it sounds again.

While John Michell has been steadily making Gyrodecs in Borehamwood, year in, year out, until recently it has been left in the shadow of a certain Scottish turntable. It's gradually achieved a higher profile - to the extent that three British reviewers now use one.

With the new Gyropower QC power supply, it should achieve an even higher profile. Other companies have made much fuss about dedicated power supplies, but Michell - being a very traditional engineering company, despite having a knack for coming up with avant-garde visual designs - has stuck to just a couple of options. Until now, the choice was either a plug-in transformer (the sort that comes with an answering machine) or the Gyropower, a fairly simple, though elegantly acrylic-encased power supply.

The reasoning at Borehamwood has largely been pricing, Michell being reluctant to let the cost of the Gyrodec rise beyond a thousand pounds. Even with the release of the Gyropower QC and a special offer which throws the QC in with the turntable for just under a grand, saving fifty pounds, the magic price point has been held. And what magic it is!

Readers of the reviews of the Alecto power amplifiers will have gathered that they perform a particular kind of magic. Primarily it is a very natural, realistic sound, with broad dynamics, three-dimensional space, and a great deal of free air around and enveloping performers. It shouldn't come as a surprise, then, to hear that the Gyropower QC creates exactly this 'sound' for the turntable.

It surprised me, though. After all, all a turntable has to do is revolve at the right speed. A strobe disc on the platter proved it went round at 33 1/3 even with the bog-standard psu. So where is all the extra magic coming from?



Partly, it's a cleaned and smoothed current; partly because the power is controlled by two separate quartz crystal oscillators which provide a precise waveform for each speed, either 45 or 33. Yes, the Gyropower QC is electronically switchable. No more need to mess about moving the drive belts (two on a Gyrodec) up one step on the pulley to play Ian McNabb's *Truth and Beauty* on vinyl.

On Dave Grusin's 'Mountain Dance' on GRP, the piano suddenly increased its dimensions and took on an extra firmness and precision below Middle C that gave the impression it was deeper. The whole recording expanded, putting more depth between the players - it was that same 'walk in and around' effect that is so marked on the Alectos. The percussionist tinkles a triangle, just on the fringes of consciousness; extraordinarily, it was possible to tell he was striking all three sides in turn. QC-equipped, the Gyrodec/SME IV and Morch da Capo retrieved even that most subtle and delicate information.

Most startling of all was tangible proof that the motor was now running with utter stability, because the beat and timing became remarkably crisp. In the same Grusin piece, woodblocks tapped out an unerringly metronomic beat, one you could click your fingers to with the kind of precision that's normally the province of piano teachers. Not a trace of hesitation or irregularity.

That sort of rhythmic ability lifts this

turntable right into the upper league. And it underpins every genre of

music. Transients are sharp in attack, and very slow in decay - dying notes seem to be held forever, instead of being cut off. It makes rock faster and sharper, while focusing detail with pinpoint precision. On classical music it increases the emotional content. Ricci's violin in Tchaikovsky's *Violin Concerto* (Decca SXL) acquires an additional nuance that draws the concentration almost exclusively to his bowing, his expression, as one would be drawn into it live. While, all the time, the orchestral sections inhabit that extra dimension of space so that there is even more of an illusion of reality.

No doubts? Well, some may not like its styling - it looks like a miniature Alecto. For them, Tesseract make a power supply for the Gyro in more conventional shape, which is fifty quid more. That too, turns the Gyrodec into something extraordinary - but it has, would you believe, a different sound. Exquisitely detailed, splendidly airy, somewhat sweeter and delicate rather than speedy and muscular.

Eight years on, and the Michell Gyrodec is still with us. The new power supply turns this excellent turntable into a superb one. It doesn't need the silver tongue of a Queen's Counsel - it's its own advocate. ●

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Naming Names

Putting a name to a station is still difficult. Yamaha help solve the problem with their RDS capable TX-670RDS tuner, Robert Wilson found.

They're steadily growing more complex, these modern tuners. And describing how a new function works in English gets no easier for the Japanese instruction books authors of as a result. With Yamaha's TX-670 RDS synthesiser tuner 'You can store a station with a name of your own giving' we are told. That might not be quite how most people would put it, but so what! Yamaha have been clever all the same: the '670 is a good,

high performance tuner fitted with an enhanced Radio Data System (RDS) and priced at £239.95.

An unfortunate feature of RDS - a system for passing data from broadcast transmitter to radio receiver - is that at present only the majors use it. So a tuner like the TX-670 RDS will efficiently tell you what you probably know already - that you've just tuned into Radio 1 - whilst remaining resolutely mute as the Caribbean colour of Sunrise pours in. So just as

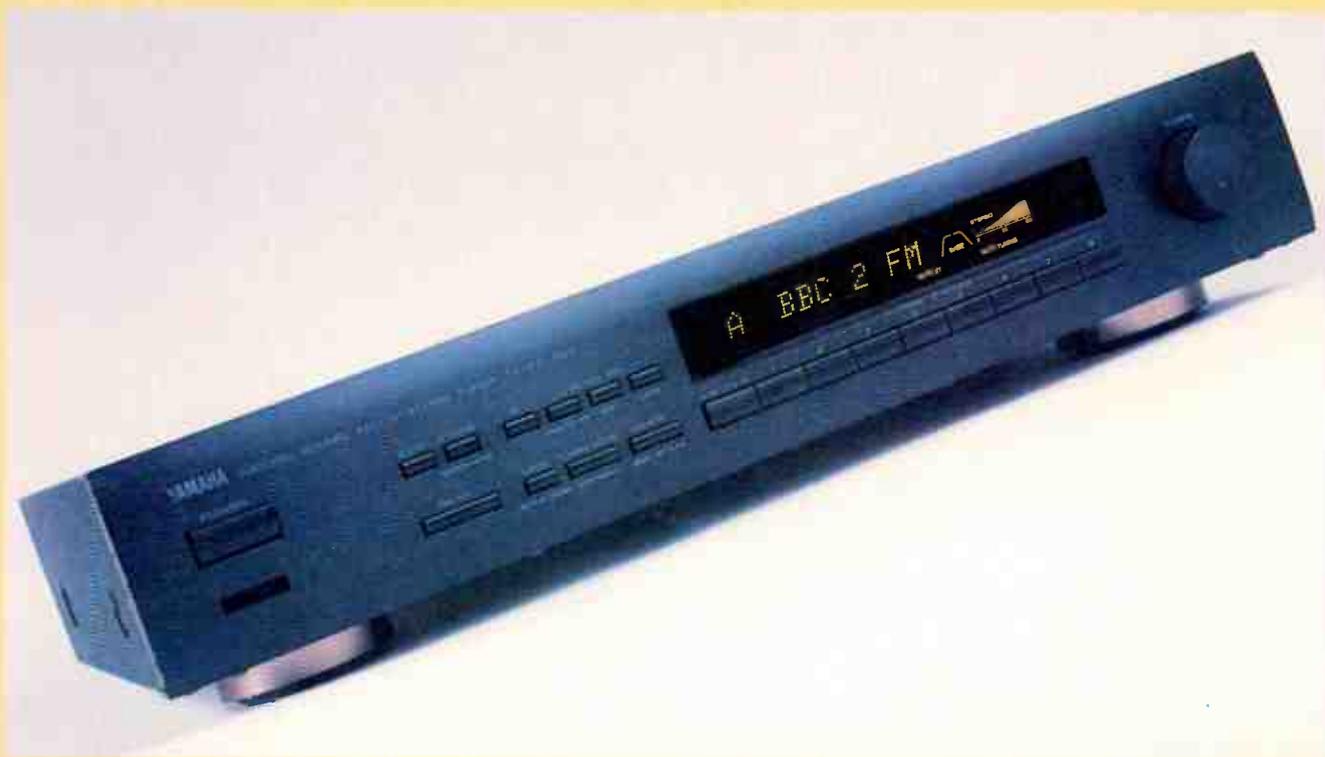
that last snatch of Dub fades out, you'll be left wondering who or what the station is.

The Yamaha can't crack this little difficulty, but it can prevent it from recurring, because the name SUNRISE can be entered into a memory so it will pop up as the station is selected. I pity the poor Japanese in having to deal with European languages though, for in addition to the standard 26-letter alphabet they've had to include no fewer than 33 special accents, from France, Germany, Scandinavia and Greece, and there are numerals as well. Up to eight characters can be displayed.

Possessing high sensitivity and excellent selectivity, our tests showed, the Yamaha is a good choice for anyone wanting to pluck as many stations as possible from our increasingly crowded airwaves. Our own high-gain aerial in Central London now provides access to around thirty stations at any one time, but the Yamaha could cope, storing no fewer than forty. That's more than most tuners and each one can be named, so here's a tuner for inveterate wave riders who are afraid they might be missing something, somewhere. In addition to VHF/FM, there's also Medium Wave (531kHz-1611kHz), but not Long Wave.

Like all modern synthesiser tuners this one tunes in fixed steps, either manually or automatically. The idea is, however, to save a station frequency into memory and then call it up by push button. With up to forty in store, the memory needs to be non-volatile and Yamaha's lasts for up to one year without power applied.

Wide or Narrow IF selectivity is provided, but in fact this tuner offers high selectivity on Wide and very high



selectivity on Narrow our tests showed. The purpose of Wide is to offer best sound quality with least compromise. 'Narrow' sacrifices some distortion and channel separation in order to yield maximum ability to pick out weak stations.

Yamaha build and finish this tuner well enough, but in this respect it differs little from the norm, being satisfactory rather than anything better.

I thought it fitting to tune in to Auntie's young person's channel to begin listening. As the legend 'BBC 1 FM' appeared in a soft orange glow on the dot matrix display panel I was greeted with a lively, detailed sound which was definitely in keeping with Simon Mayo's manic 'Zoo Radio' style of presentation. This aspect of the Yamaha's performance nicely complemented the rest of the system (Naim 82/180 and the Neat Critiques) which itself was very involving.

When the first single was played - a particularly upbeat new track by The Inspiral Carpets - the Yamaha latched on to the wonderful arrangement of jangling guitars, giving them plenty of body and solidity at the heart of the soundstage, the downside being that this confident presentation didn't extend further down the frequency range. Like a lot of modern tuners, the Yamaha lacked the ability to fill out the lower registers, thus denying the music its coherence. This fundamental flaw leaves the listener having to concentrate, albeit subconsciously, on filling in the blanks, so to speak, which does distract from the rest of the performance.

However, this is not a damning criticism of the Yamaha, but one that can be broadly aimed at modern tuners in general. That said, what bass there was did have a tight nature, being reasonably quick and communicative - and let's face it, communication is what radio is all about!

Moving on up to the mid-range brings us to this tuner's forte. Voices come over with a fair degree of authority, giving just the right amount of intonation to a newscaster's delivery, though sometimes clipping certain vowel sounds on one rather enthusiastic correspondent. But it was with music, especially live sessions, where the Yamaha came alive, providing insight into a solid, quite centralised soundstage which only tended to become diffuse towards the extreme outer edges.

Live vocals were very tangible, if just a little too sibilant, the tuner tending to over emphasise the breathy content of some female vocals - Toni Amos in particular.

With music from either Radio 3 or Classic FM the stereo depth made the orchestral image pan out nicely behind the line of the speakers, layering the instrumentation well, although it was a little more compressed than the best available.

While on the subject of compression the quiet background of the Yamaha did ruthlessly expose programme hiss, which is a general problem as more and more

signal compression is forced upon us.

The ability of this tuner to recreate the treble content of a programme with some emphasis was a little disappointing, particularly on Jazz FM and Kiss FM where it was rather splashy, and although not harsh or overly bright, the TX-670RDS did become 'tizzy' when pushed and never managed to give delicately played cymbals that glorious shimmer that sends a tingle down your spine. So here's a tuner that eschews balance in its sound for detail and insight. It's a great wave

rider, our tests proved, being unusually effective at picking weak stations out of a crowded ether. So the Yamaha has a good stock of ability, but a few weaknesses too ●

YAMAHA TX-670RDS £239.95
Yamaha Electronics UK Ltd.,
Yamaha House,
200 Rickmansworth Road,
Watford, Herts., WSD1 7JS.
Tel: 0923 233166

MEASURED PERFORMANCE

The TX-670 RDS has a frequency response tilted upward slightly toward high frequencies. This characteristic, taken in conjunction with a bass roll off, is liable to make the sound dry but detailed and bass light. Channel separation on stereo was good at 39dB or thereabouts right across the audio band; there was little deterioration at high frequencies.

Low distortion levels have been achieved, but this is not uncommon nowadays, due to refined chip technology. The '670 turned in a figure of 0.13% at 50% modulation level, on a par with other quality tuners. Where it was not on a par though, but ahead, was in hiss level. I measured a -78dB hiss floor at full quieting, which is around 5dB lower than usual and about the best the test equipment can measure. Few tuners are so quiet; -73dB or so being usual. The benefit of this isn't so great, because radio stations struggle to keep modulation levels up and silences minimal specifically to drown out hiss, because it gives them better theoretical range and audience figures (absurd!). However, ardent Radio 3 listeners can be assured that the Yamaha won't hiss annoyingly during silences or low level passages providing, as always, it is given enough signal by the aerial.

And what a surprise to find that Yamaha have actually fitted a signal strength meter capable of indicating whether this is so. It reads right up to 1.6mV, much higher than usual, so owners really can tell whether they are getting an adequately strong aerial signal. Worried, as always, that a display that doesn't show maximum might unsettle users, giving them cause to think the tuner isn't sensitive enough, Yamaha have ensured that 80% of the display lights up with just 100µV of signal - far too little for good results. In truth it is necessary to get the very highest sector to light before the tuner is truly in full quieting, giving least hiss.

Audio output was satisfactorily high at 500mV. Radio frequency sensitivity was good too, which is unusual for an RDS tuner; early models were both hissy and insensitive. The Yamaha also had excellent selectivity and - unusually - the Narrow/Wide IF facility worked well, rather than being a cosmetic addition, as is so common. This is certainly a good tuner

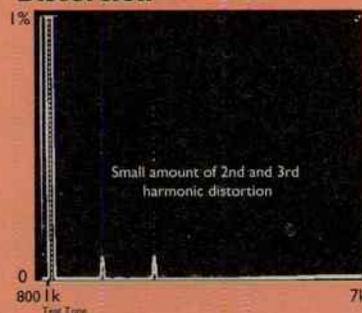
for use on crowded airwaves, where a weak station nestling close to a strong one needs to be picked up.

The Yamaha proved a good all-rounder in terms of its measured performance, but I would expect it to sound bright and possibly a little thin. **NK**

TEST RESULTS

Frequency response	44Hz-15kHz
Stereo separation	39dB
Distortion (50% mod.)	0.13%
Hiss (CCIR)	-78dB
Signal for minimum hiss	1.6mV
Selectivity (W/N)	78/90dB
Sensitivity	
mono	1.2µV
stereo	20µV
signal strength meter	0.3µV - 1.6mV

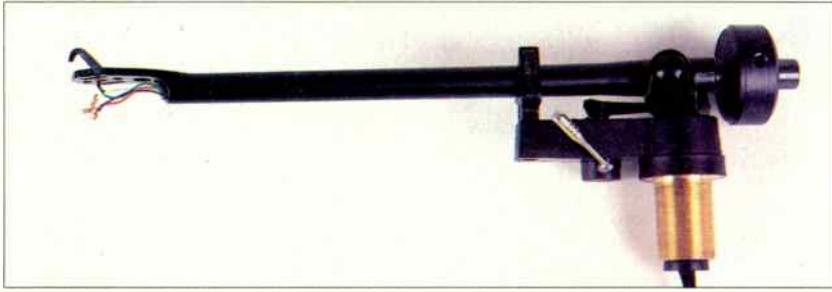
Distortion



Frequency Response



REGA REVISED



Dominic Todd tries a modified Rega RB250 from Origin Live.

With the collapse of Revolver, and turntable sales well and truly in the doldrums, the last thing you'd expect is yet another modified Rega arm. Yet Origin Live have gone against the grain of fashion and produced one. The basic Rega arm itself is a sound, rigid, design which lends itself to modification. An old trick is to replace the extremely cheap cable used to wire the RB250. Origin offer such an upgrade, but here we take a look at another of their modifications. For £75, Origin Live replaces the counterweight with a smooth, non-threaded variety. It is modified too, to allow it to simply slide up and down the tube (and be held by a hex screw) rather

than twisted along a screw thread. Even accounting for the fact that the price includes VAT and return carriage, I think £75 is a bit steep considering how simple the modification is. But if the modification is as successful as Origin suggest (they claim it can rival a Roksan Tabriz), then it's good value.

Changing from a standard RB250 arm to the modified version did show noticeable improvements. It has to be said that they weren't huge, but they were certainly in keeping with the cost of the upgrade. Overall, the sound was more articulate. The RB250 has always been something of a let-down at the frequency extremes, with a rather woolly bass and

soft treble. It was in the the latter region that the Origin-modified Rega showed the greatest improvement, with a notably crisper treble leading to better definition on instruments such as the saxophone. The bass gained a little added 'weight', but overall depth wasn't improved.

Instruments were better separated than the original, but the slightly limited stereo width of the RB250 was unchanged. Finally, the smooth and musical mid-range (the best feature of the Rega arm) fortunately hasn't suffered from the 250's new-found articulation. This is hardly something for the mass-market, but if you've already got a turntable equipped with a Rega RB250 (or RB300 for that matter), and would like vinyl replay to be spiced up a little bit, without going to great expense, then Origin's RB250 comes recommended ●

IN THE MAY ISSUE

Spring's nearly here, so with a spring in your step get down to your local newsagents for a copy of the MAY issue of Hi-Fi World packed with exciting reviews, features, letters, Q&A and much, much more. Here's a short list of what we hope to be able to bring you:

ORTOFON MC7500 ANNIVERSARY MOVING COIL CARTRIDGE

To celebrate 75 years in the business, Ortofon have something special on offer. The MC7500 uses a stylus 25% finer than that of the excellent MC3000 and MC5000 cartridges. The coils of this new model are wound with 99.999999% pure copper, promising to reveal more than any other cartridge.

LUMLEY ST70 VALVE AMPLIFIER

Reputedly one of the best-built valve amplifiers around, Dominic Todd listens to this awesome 70watt power amplifier to see if the sound matches up to its build.

ROTEL RA960BX2 AMPLIFIER
Rotel's latest integrated amplifier has been aimed firmly at the audiophile. Polypropylene capacitors are just one of the high grade components used inside.

HEYBROOK INTEGRA AMPLIFIER

The first integrated amplifier from Plymouth-based Heybrook. This is the beastie that our lucky June competition winner named, and they've been promising to launch it for months.

TEAC VRDS-7 CD PLAYER

Following the success of the VRDS-10, TEAC have launched a more affordable version, the VRDS-7. We hope to bring you this as an exclusive in our MAY issue.

ORIGIN LIVE OLAV

The latest small speaker from the respected manufacturer of equipment supports and turntables.

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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MAGAZINE MARKETING

There always were ways of improving the performance of cassette that remain easy to implement, cheap and practicable, yet retain all its benefits and, perhaps most importantly, stand a chance of being accepted by music stores. Those options are rarely discussed. Sony and Philips have been too obsessed by the lure of capturing the world-wide cassette market with some dazzling new technology - DCC and MD - only to end up fighting each other to a standstill whilst consumers looked on bemused and uninterested.

I suspect that the cassette is a satisfactory medium as far as most people are concerned, at least in broad outline, if not in fine detail. By this I mean that it's satisfactorily durable, given the price of cassettes, it is robust in use - you can throw them around - it is conveniently small and it does its job adequately well. To hi-fi enthusiasts, this last point is contentious of course: it doesn't do very well at all, but it does record music and speech so that they are intelligible. There are some surprisingly simple ways of usefully improving its sound though.

The cassette overloads prematurely for music purposes, especially at high frequencies. This causes treble dullness and muddle, due to magnetic saturation. Raising the overload ceiling increases dynamic range and lessens hiss, so both hiss and treble quality would improve from raised maximum recording level. The easiest way to do this is simply to raise the tape speed. Philips set it at a low 1 7/8 ips (4.75cms/sec) back in 1963 to give plenty of time for dictation use, for that was the original role of the Compact Cassette. Raising speed to, say, 8cms/sec, would take dynamic range from around 64dB (on a Nakamichi) up to 68-70dB-and that's without noise reduction. It would give much cleaner treble too. This was the sort of result Sony's Elcassette gave way back in the Seventies - and very

impressive it sounded.

Increasing speed would also lessen the problem of holding speed steady, reducing all forms of speed variations. It would give a large improvement in sound quality too, reduced flutter and modulation noise, which increases clarity and reduces that peculiar form of flat, papery colouration that afflicts the medium. Reducing wow - especially capstan wow - gives purer tones, noticeable with sustained notes from simple instruments, like flute, in particular. Finally, lessening drift, or low-rate



Reflections from Noel Keywood kaleidoscope

speed variations, gives music that rock-steady feeling of pitch, or tight timing.

The other blight of cassette is head azimuth error, where the head is not upright, or at least is not aligned with the modulation slant on the tape. By increasing recorded wavelengths, increasing cassette speed lessens this problem as well.

So raising tape speed could, at a stroke, upgrade the performance of cassette to that of a medium much more in keeping, quality wise, to late twentieth century requirements. There are two big drawbacks though: reduced playing time and incompatibility through loss of standardisation. It's here that I have to make a few assumptions. The major one is that much of the reduced playing time could be clawed back by using thinner tape. We already have C120s which give 60 minutes a side; my suggestion would be to use the same film, or one slightly thinner, and run the cassette not at double speed, but at - say - 6cms/sec, to get better

sound quality and adequate playing time. People expect to be able to record an entire CD on one side of a tape, suggesting 45-48minutes a side.

It would be a difficult technology to introduce, demanding stronger base film from tapes and better tape handling from machines, but the idea would have to rely in any case on a two-tier system, the new updated specification being compatible with the old one so they can run side by side in the market.

Some of you may already be exclaiming that it's already been done and that there's nothing new in this idea. Quite! I believe a U.S. company produced a double-speed deck a few years ago and, doubtless, they would have received a stiff letter from Philips about it, who demand the original standard isn't broken, so that the medium retains perfect compatibility; a double speed tape won't play on a conventional deck.

But Philips broke this rule when they introduced DCC, for it isn't fully compatible with cassette

either. Compatibility could be built into upmarket high-speed recorders by making them two-speed, so they could play original-standard tapes, just as DCC plays old analogue cassettes.

The music business and the retail stores would have to be left to decide for themselves what to do about the new high-speed standard. What retailers dislike in particular is what they call 'multiple inventory', or the same piece of music on three or more carriers, typically LP, CD and cassette. A new

high-speed cassette standard that was compatible with low-speed cassette wouldn't demand new software and this may well be the best way of bringing a better system onto the market - slowly!

Retailers, as always, have been reluctant to stock DAT, then DCC and MD. Those that do have slapped a premium price of £14.99 on pre-recordeds, an action Philips claim has come about due to industry politicking. Irrespective of the merits of DCC and MD, the cost and rarity of both blank tapes and pre-recordeds is alone enough to prevent the medium gaining popularity, in my view. Faced with this degree of opposition to new formats, the only way to bring about any quality improvement in recording media is likely to be by the sort of approach I'm suggesting. One which doesn't rely so heavily upon the retailers stocking another medium, in this case high-speed cassette, at least until it has slowly gained popularity and acceptance by the buying public and obvious demand exists ●

Purists can argue until the cows come home but good neighbourliness and family life forces some of us to listen to music on headphones. For all their disadvantages of paradoxical stereo imaging - causing a miniature drummer to appear to play a miniature drum set somewhere in the region of the pituitary gland - headphones have distinct advantages. The most obvious is that it is possible to listen at realistic listening levels without inflicting one's own taste for loud music on anyone else. The second, is that they represent fantastic value.

For under fifty pounds it's possible to buy headphones which possess frequency response and distortion characteristics the equal of loudspeakers many, times their price. Why? Well, because, in a nutshell, they have to move far less air. (They also require far less electricity to do it, but I'll come to that in a minute.)

The characteristics of low harmonic distortion and linear frequency response at high listening levels lend headphones their oft-quoted virtue of clarity. I know one very respected classical recording engineer and producer who prefers to judge the nuances of different performances through headphones rather than via loudspeakers. When open-style, high-velocity headphones first appeared ten years ago, I found them a revelation. When I'm working on my own I use trusty, high-velocity Sennheisers. I've loved these 'phones ever since the type HD40; the HD320 and HD530 11 are worthy successors. They're light, comfortable and are also supplied with very long leads - other manufacturers please note! I can work for hours on end and not even know I'm wearing them - a far cry from the old closed-back type which made me feel like I was wearing a Mickey Mouse dressing-up kit.

Unfortunately, for headphone listening, a high-quality, dedicated amplifier

is indispensable too. Just such an amplifier is the subject of this month's column.

Integrated amplifiers which provide headphone output rarely have a dedicated headphone stage. Instead, they have a 'potted-down' version of the signal fed to the loudspeakers. Better are the dedicated headphone stages installed in CD players, cassette players and other separates. Yet the quality of these stages is very far from consistent and most, if not all, produce plenty of what



signals will find themselves in the amplifier's 'twilight zone'.

If single-ended, class A amplification represents the zenith of purist amplification, what better place to try it than a headphone amplifier where the power output required to drive a pair of headphones is only about 100mW and the precious low-level signals are minute indeed. Fig 1 shows my own design. I have listened to this circuit for many hundreds of hours and its recovery of low-level detail

recorded message

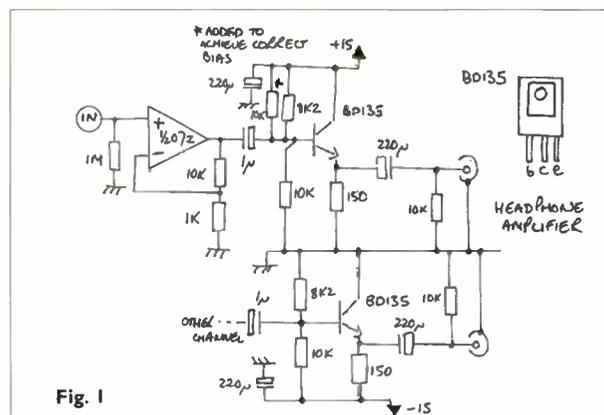
Left by Richard Brice

used to be called 'listener fatigue'. I suspect this derives from the fact that the majority of headphone amplifiers are Class B in origin. In portable equipment, like a personal stereo, such a circuit topology is obviously

that the maximum voltage swing required to produce a very loud noise from most lower impedance headphones is only about 6 volts peak to peak. The crossover region (about 1.5 volts) thus represents about 25% of the total transfer

is superb, it plays loud and fast and is very reliable and virtually noiseless.

The circuit itself is made up of a voltage amplifier stage (TL072 op-amp) and class A emitter-follower output circuits. Negative feedback is only used in the voltage amplifying stage and no overall feedback is employed. Each output device 'sits' in about 40mA of current. The power transistors run appreciably warm but do not require heatsinks. Best results are obtained if the bias is individually trimmed for each transistor (resulting from variations in β) as shown in the diagram. A cunning feature of the circuit is that either channel is strung respectively between the positive and negative supply - this ensures that low-frequency transients (which usually occur centre-image) do not cause unnecessary currents in the signal ground. The other, incidental, advantage to building the headphone amplifier described here is that you will be able to tell your hi-fi buff friends you have installed single-ended, Class A, no-feedback amplification and can still afford clothes for the children ●



imperative in order to keep current consumption to a minimum and battery life to a maximum. But the slight disadvantage of increased heat dissipation in a fixed, mains-powered separate is harder to justify.

Provided power consumption is not uppermost in the designer's mind, the choice of Class B operation for a headphone amplifier is particularly unsuitable. The reason is

characteristic of the amplifier. In other words, most musical information - except the very occasional transient - will occupy the region of the amplifier least able to produce signal without distortion. For comparison, a power amplifier designed to drive a loudspeaker will have a cross-over region which represents only perhaps 1% or 2% of its available output swing, so only very low-level

It's back! Our DIY Supplement has made a welcome return this month, bringing you hi-fi projects and information to drool over. We'll be producing one every other month throughout the coming year and the projects planned are exciting. Not only will there be more valve amplifiers, but we hope to be able to offer loudspeakers too, knowing they are also popular. There will be some simpler projects to entice the less experienced to get involved, plus some solid-state designs, we hope, and a little light but practical theory.

The DIY Supplements proved to be immensely popular last year. Strangely, even those who wouldn't actually consider building anything for themselves seemed to find them an interesting read. It seems that there is a strong desire to understand how hi-fi actually works, something that is normally kept secret or confused by long winded technical explanations.

This desire to understand how things work, but not to actually put the knowledge to any practical use, I find quite odd. The UK's hi-fi enthusiasts have been pushed steadily away from tweaking and DIY for one reason or another. They have gone from being DIY enthusiast builders-and-tweakers of the Sixties, to being passive black-box listeners of the Eighties.

In the States it has been quite different, or so I am led to believe by some of the US readers I've been talking to recently. One I spoke with recently couldn't stop telling me about the improvements he had made to his Quad electrostatics by stripping them down and completely re-wiring them with higher quality cable and components. This is no job for the faint hearted though: a few kilovolts is enough to terminate anyone's fun - so it's not a wise tweak for the

amateur.

However, should a washer in a tap need replacing, he told me he wouldn't hesitate to pick up the 'phone and ring for a repair man. His argument was that anyone can fix a tap, but there was no chance they were going to get near his pride and joy with a soldering iron - that was his territory.

The Americans trust someone to do a relatively simple task and get it right, but anything complex they would rather learn about and do themselves. We, in the UK, are completely



Dominic Baker

dB on the level

different. We are very trusting of the things we don't understand and weary of the things we do. If a builder comes round to do some work we are the first to tell him he's doing it wrong, or the other man didn't do it that way. However, the engineer in the hi-fi shop who tells us that he had to replace the output and driver transistors in the amplifier to fix it, is likely to get a blank stare.

It seems that we are prepared to take on domestic DIY to save money much more readily than tweak our hi-fis for higher performance. Whereas in the States, it is commonplace for enthusiasts to completely re-wire their amplifiers, or upgrade the components in their loudspeakers, in the UK this is rarely seen, done or talked about.

The 1994 Mintel Marketing Intelligence report on British Lifestyles shows our interest in home DIY. In fact we are becoming more and more a DIY nation and the Mintel report shows a massive £5.6bn was spent on DIY in 1993. Obviously, this includes a wide range of

DIY activities, painting, decorating and furniture taking the biggest chunk, but it shows that people are prepared to do things for themselves. And the skills needed for these DIY activities are similar to those needed for kit loudspeakers.

Further on in the Mintel report there is a break-down of the DIY tasks people feel confident about doing. One figure that I find staggering is that 19% of the population feel confident about re-wiring their own homes. Here, a knowledge of electricity, an understanding of circuit diagrams and a very practical nature are necessities; I'm amazed that so many people believe they have these skills. This indicates that there is a large proportion of people out there who are capable of, perhaps with a little help, building their own electronic hi-fi equipment as well.

Brown goods sales (that includes hi-fi) are also benefiting from a high level of product innovation (obviously our valve amplifiers!) and a growing level of multi-ownership,

says Mintel. This is good news for the hi-fi industry, and should be for the consumer too. The growing level of multi-ownership suggests that products are going to be expected to last longer and hold more of their re-sale value. This places an emphasis upon build quality - perhaps Mission had some inside information before opting for the elaborate casting used in the casework of their new amplifiers.

The Mintel report also shows that spending on the home accounts for the largest proportion of

consumer spending. This is attributed to the recession and the static housing market; people are tending to spend longer in the same house, waiting for the market to improve. It's a situation that has helped hi-fi sales. After all, if you're going to be staying in one place for some time, a good hi-fi is a necessity.

The DIY Supplements show what goes into hi-fi equipment, and they may give you a good idea of how to judge build quality and value when it comes to buying a new piece of hi-fi. This is valuable; if you can recognise quality within hi-fi products, you are less likely to end up with something that is unreliable or poor. And for those DIYers who actually build their own equipment it appears we can't talk enough about such matters.

This is all good for hi-fi. The quality of products should improve as the recession lifts and sales increase. One other nice piece of news from Mintel is that magazines will benefit from increasing sales in the coming years. Luckily we've already seen this at Hi-Fi World!

If you're like me, you've probably wondered how the majority of the public can be so naive about hi-fi separates. It's not down to a lack of demand in general - in the last year over one million hi-fi (midi, mini, micro etc.) systems were sold in the UK. You only need to walk down the local high street on a Saturday afternoon to see half a dozen or so people clutching large boxes of the latest Far Eastern 'box of air', eagerly rushing home.

The cost of hi-fi separates isn't really to blame, either. It's not uncommon for midi and micro systems to cost between £600-£1000 these days. That sort of money will quite easily buy a reasonable separates system which will outperform the midi or micro. Styling and bulk are pretty suspect objections too, as there are many single brand separate systems that offer a smart and unified design, and which are often no more imposing than a midi system. The hi-fi press is, in most cases, firmly behind separate hi-fi components as well.

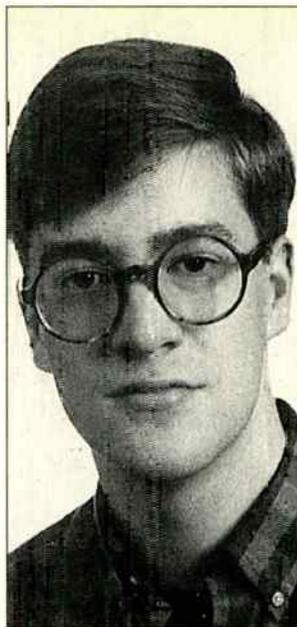
If you need any more persuading just look at all the other arguments. Separates are generally better built, easier to service, hold their value better, upgradable and not as affected by the whims of fashion as midi/minis are.

As an example of the latter point, consider this. A NAD separates system from twelve, or so, years ago will look little different to one of today's. It should still perform well, and probably last another twelve years, if looked after. In short, it hasn't dated. Yet just take a look at what's happened to the mass market in the past twelve years. We've gone from the silver tower system to the black tower. Then came the midi system, which has since been eclipsed by the mini and micro systems. These too, have not escaped the clutches of the marketer, with the 'organic' look replacing sharp lines, blacks turning to greys, and the advent of A/V with associated swivelling

speakers and the like.

Mass market hi-fi is simply cheap fashion. Every year there's a new style or 'unique feature' (read gimmick), and the public are often conned into believing that whatever the latest fad is they simply must have, such is the 'progress' being made.

Apart from specialist dealers and hi-fi magazines, until now, there's been no real effort by any particular body to really promote and raise the public's perception of 'proper' hi-fi. Yet, perhaps this is about to change with the British



may have a chance of raising the public's perception of hi-fi separates.

Ultimately, it's rather ironic that the very body that BADA seeks to represent, the specialist dealer, may be undermined by the high street stores if the scheme is successful. There are also a lot of unanswered questions. What about the specialist hi-fi stores who aren't BADA members? Will they still be able to sell hi-fi that has recently become a 'Real hi-fi' product? And will a lack of the 'Real hi-fi' status

Fair Views

- from Dominic Todd, our man in Scarborough

Association of Audio Dealers (BADA), launching a campaign for 'Real hi-fi'.

The association has designed a logo which has been printed onto posters, point of sale material, and badges, and has been sent out to all the hi-fi dealers who are BADA members. Manufacturers are also being approached. The idea is that, for a cost, manufacturers will be able to use the 'Real hi-fi' label on their products. These will first have to be approved by a body in the hi-fi industry, to ascertain whether or not they are 'Real hi-fi', i.e. separates. The approval system is there to prevent the larger manufacturers from simply buying the rights to the label and then using it for low-fi midis, minis or even personal stereos!

If the manufacturers take up the scheme, then the idea is that consumers will then be able to recognise good quality hi-fi through a simple logo on the equipment. BADA flatter themselves somewhat by comparing the 'Real hi-fi' logo to that of the successfully introduced 'Real Wool' mark. Yet they are realistic in realising that they don't have anything

like the capital of the International Wool Secretariat. What they do claim to have, though, is plenty of time. Whether or not this is sufficient is debatable. Should products bearing the 'Real hi-fi' logo only reach the specialist hi-fi dealers then the exercise is somewhat self defeating. However, you may have noticed that more and more hi-fi separates are now being sold through the high street chains. Dixons and Currys, for example, now stock well-respected products such as the Marantz CD-52II and Celestion speakers; even Tandy are turning their attention away from the hobby market, and towards stocking higher quality hi-fi such as Mission 760 speakers.

Whatever you may think of this, and there are plenty of reservations in terms of the major chains' ability to demonstrate the products and serve the customer properly, it can't be denied that it gets hi-fi separates the much needed attention of the mass market. Further more, if products with the 'Real hi-fi' logo begin to start appearing in such stores, then there's a good chance that the scheme

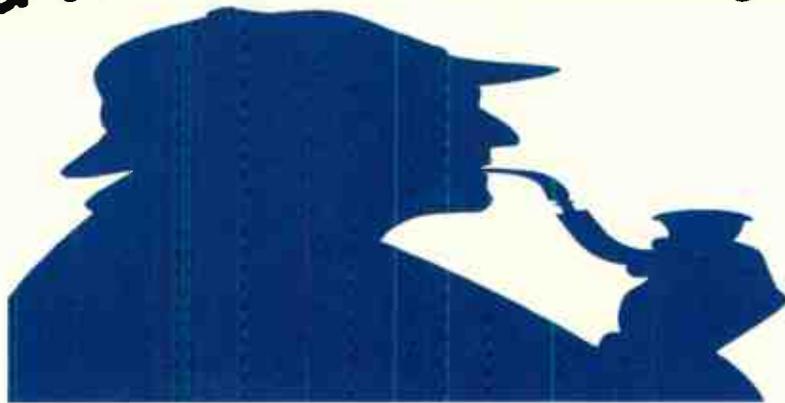
for these stores mean that somehow what they sell isn't a worthy and reputable product?

Manufacturers too, have their concerns about the scheme. Some feel uncomfortable with the 'old boys club' reputation that BADA have, and that they are being forced into the scheme because if they don't sign up then their products may be seen as inferior in the market place.

Although I admire BADA's efforts in finally attempting to tackle the problem of a totally flat hi-fi separates market, with little public awareness of the differences that exist between hi-fi and 'Real hi-fi', I hope that they manage to avoid the pitfalls that are part and parcel of such a scheme. If the scheme flops then no harm has really been done, and it will be seen as a valiant effort. Yet the real danger, from the point of view of specialist retailers, is that if it's too successful, it may play into the hands of the high street stores and undermine the specialists.

Whatever happens, though, you can be assured that it will be, as they say in the movies, a long time in the making ●

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developed their own unique design in-house, effectively challenging the laboratories of industry giants like Philips and Matsushita. The outcome is the Da Capo, widely praised for its stunning sonic qualities.

To ensure Da Capo doesn't get left behind by the relentless forward march of technology, it has plug-in digital filters, so

future upgrades can be bought and plugged in. This also allows various current options to be assessed and selected. Pink Triangle give the lucky winner this option by providing two separate, plug-in digital filters, the Yamaha YM3414 18-bit filter module and Burr-Brown DF1700 20-bit. The YM3414 Dominic Baker thought was "head and shoulders above most other DACs"; even if he personally preferred the 20-bit for its "softer, more relaxed midband". "The Lemon Trees were greeted well, with plenty of atmosphere and space around the performers and the fabulous harmonies on 'Submerge' sounded natural and free from coarseness".

The two filters possess differing sonic properties, the 18-bit sounding more intense and forthright than the 20-bit, Dominic found. But many people like the "analogue" sound of the 18-bit. Our lucky competition winner will be able to judge these matters though, being offered the opportunity to swap over filters at leisure in the comfort of home.

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Please send your entry on a POSTCARD, or the back of a SEALED ENVELOPE, and completed in block capitals, to arrive no later than Friday 8th April 1994 to:

DA CAPO Competition
Hi-Fi World Magazine,
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In the event of more than one entrant submitting all the correct answers, the winner will be picked at random. We will endeavour to publish the results in the JUNE 1994 issue. Purchase of the magazine is not a precondition to entry.

No correspondence about this competition will be entered into and the Editor's decision is final.

No employees of Audio Publishing Ltd. or any of the companies associated with production or distribution of the prizes may enter ●

COMPETITION ENTRY QUESTIONS

1) Who makes the YM3414 filter?

- | | |
|------------|---------------|
| A. Philips | B. Matsushita |
| C. Sony | D. Yamaha |

2) Which country does the phrase 'Da Capo' originate from?

- | | |
|-----------|------------|
| A. France | B. England |
| C. Italy | D. Germany |

3) Which digital filter did Dominic prefer?

- | | |
|-----------|-----------|
| A. 18-bit | B. 20-bit |
| C. 16-bit | D. 1-bit |

4) Who makes the Da Capo?

- | | |
|------------------|-----------|
| A. DPA | B. Linn |
| C. Pink Triangle | D. Roksan |

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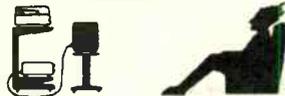
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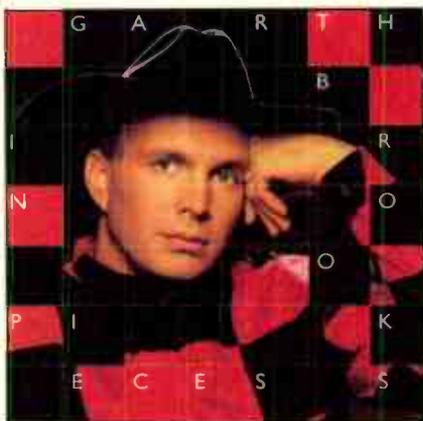
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● Garth Brooks has probably taken longer to reach British audiences than most of his contemporaries in the New Country boom of a few years ago - I refer to the likes of Lyle Lovett, that geezer who sang about guitars and cadillacs, and so on. See how quickly a fad can turn into a Trivial Pursuit question? Anyway, Garth's the one with the Big Hats, and if he may be little known by we British Bulldogs, he's sold more records in the USA recently than all your Springsteens and Dire Straits put together.

Now a lot of critics have suddenly suggested that this is 'cos Garth appeals to rednecks and good ole boys of the born again Hawk-cum-fundamentalist variety. Mind you, these rag-scribblers have also suggested that the reason he

wears huge Tom Mix-type stetsons all the time is 'cause he has a follicle problem as in Elton John, what in Newspeak we would politically correctly call follically challenged. Well, that's patent bullshit because (how many ways the wonderful world of pop writing can spell or mutate "because", eh readers?) there's a picture of Garth sans stetson on the inside, and grey he may be, but bald eagle he certainly ain't - and that's no lie.

Now to this bambino, and on the evidence of this, Garth's seventh long-player, I believe that Garth's popularity is down to three things, viz: (1) A terrific sense of style - it's surely no coincidence that the first credits on the sleeve of the record are to thank the people who provide him with his shirts, jeans, boots, dusters and any other accoutrements of the well-dressed New Country boy. Didn't Hank Williams and Gram Parsons have similar sensibilities. (2) Garth, who doesn't do a helluva lot of writing himself, has a very good ear for a catchy song. And (3) the man happens to be possessed of a strong, lissome, extremely flexible voice - no bad thing for someone who happens to sing for a living.

Not that Brooks and his writers aren't partial to a little of that comball sentimentality that Country is particularly suited to - there's a song here, 'The Night I Called The Old Man Out', which concerns itself with the inevitable 'East Of Eden' style stand-off between father and son, the one where the kid takes on

THERAPY?
Troublegum
A&M 540 196 2

● Therapy are probably the hardest most dangerous sound ever to come out of the Emerald Isle. Formed five years ago, the trio went the usual Indie/ small label route until signing to A&M a couple of years past. Their debut LP for the label, 'Nurse' marked them as a force to be reckoned with; this follow up can't fail but consolidate their reputation, as trouble boys par excellence. Therapy? are loud, bad and astonishingly powerful for a trio. They combine monstrous guitars jetpropelled rhythms with blood-soaked lyrics and tougher than tough vocal deliveries. But they can also come up with killer hooks and highly persuasive melody lines. To say they're probably the best Irish export since Guinness is hardly an exaggeration. The trio - Andy Cairns (vox. gtrs.), Fyfe Ewing (drums) and Michael McKeegan (bass) - positively revel in the aforementioned Irishness on this LP. At least from a lyrical point of view, with ample references to Jesus ("without the suffering"), his turncoat

pa] Judas, plus oodles of guilt, anxiety, sexual frustration etc. But they can also come up with a song that opens with the ahem, presumably tongue in cheek line "masturbation saved my life".



Which is to say that one of their saving graces is a good sense of humour. I mean, who else but a lapsed Catholic could come up with a phrase like "Heaven kicked you out, you wouldn't

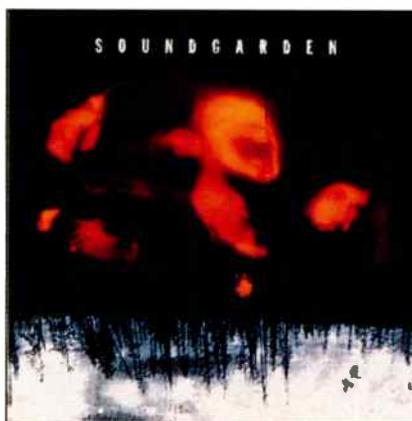
wear a tie"? And you must remember that these are the boyboys who once declared, "I'm bitter, I'm twisted/ James Joyce is f~xxing my sister"! They are - New Puritans beware - also wont to use the f-word a lot on this latest opus. But they're best when you take the lyrics and music as a whole, so try the drum-manic 'Hellbell or the brilliant vocal arrangements that make 'Lunacy Booth' such a special killer. On 'Unbeliever' the lead vocal owes more than a bit to the late Ian Curtis, so it's no surprise to find the band taking on Joy Division's classically psychotic 'Isolation' elsewhere on the disc. On a more melodic note there's the VASTLY impressive coda that graces the Bowie-inspired 'Turn' or the ultra catchy chorus that makes 'Screamager' a treat for the whole wide world.

Therapy? are a wild marriage of metal and pop as if Ministry went and read 'Portrait Of The Artist', got even better hooks, and humour by the bucket. Watch them grow...

his old man, gets the kaka beaten out of him only to realise how much he really does love his "paw". But it's superbly done, dripping in sentiment and just perfect Middle America pap-fodder (fodder dear fodder, or what?). There are tunes covered in fiddles, mandolins everything in fact except a Tex Ritter yodel. There is even a song about the wonderful life that cowboys have, 'The Cowboy Song' - what else?, this one even including a bona fide "Yippee-tie-eye-ay!". And of course, there's Brooks', US version of Ray Davies' 'Village Green Preservation Society', a paen to all things American entitled 'American Honky Tonk Bar Association'. Now it may be a



redneck hymn, but it also happens to be catchy as hell, features amusing lyrics, and is splendidly played, delivered and arranged. So what, I sez armchair cowboys everywhere wan relate to GB, I'll wager. He may not be an auteur like Lyle Lovett, and I love him less but it's easy to see why he's as big as he is. And he wears a mean mean stetson.



SOUNDGARDEN
Superunknown
A&M 540 215 2

● Soundgarden are one of the old guard Seattle bands; in fact, the legend

goes that Kurt Cobain only decided to sign his Nirvana combo to the Sub Pop label because these geezers were there already. This knowledge helps to answer all sorts of tricky questions, because although Nirvana's global success has meant they are now identified with all things Seattle, we on the outside don't really appreciate who came first. See, there are plentiful incidences on this new Soundgarden LP where one could be forgiven for thinking that they'd taken more than the odd leaf from their maturer cousins' book. Whereas the truth may be that Nirvana may owe a great deal more to Soundgarden than anyone's so far chosen to admit.

Mind you this is all petty journalistic-type quibbling because, as we all well know, what really matters is the music to hand - and the music to hand in this case just happens to be fast and furious, strongly metallic rock of the type that never avoids paying its dues to such primary sources of inspiration as early Led Zep or - vocally at least - Free's Paul Rodgers.

Because Soundgarden are the Betes Noirs of the Seattle "grunge" scene their roots lie fairly and squarely buried in the rich loam of late Seventies blues/rock of the sort that Heavy Metal could not have existed without. And to give 'em their

dues, Soundgarden have - despite a pedigree which includes releases on such benchmark indie labels as SubPop and SST - never really forsaken their metallically Britpop circa 69-71 roots. Hence on this latest disc there are echoes of Led Zep's classic 'Trampled Underfoot' mad shadows of the Sabs variatt and even a subtle hint of Robert Palmer when he was still part of Great Lost Blues-Rock Legends Vinegar Joe.

As previously, this an entertainingly noisy blend of Metal and pop; busily noisome, ripe with Heavy Metal Thunder, and with its tongue firmly in its cheek. Fun being the operative word, this really is a band it's hard not to like a whole lot. Hubba. hubba!



BLUE AEROPLANES
Life Model
BEGGARS BANQUET

● Out of Bristol a near decade ago came the Blue Aeroplanes, an intriguing combination of poetry and rock whose nearest relatives are propably Dexy's Midnight Runners at their peak. The BA's share with Dexy's a tendency to lyrical verbosity combined with strong pop sensibilities which means their songs are catchy, laden with hooks and hard to forget or pass by. REM's Michael Stipe has said they're his favourite band, but then he's always saying things like that.

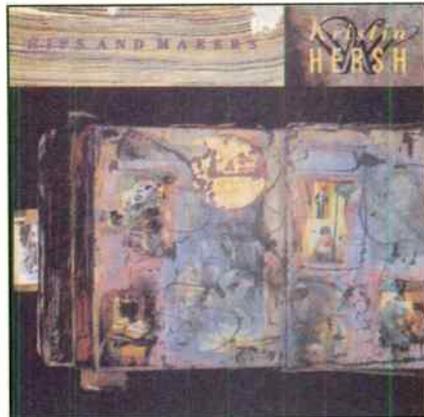
But three well-received LP's later the group are still alive and kicking so it must mean something.

The latest BA line-up features Gerard Langley (vocals), who is their lynch-pin, plus dancer Wojtek Demochowski (try saying that with a mouth full of spaghetti) as well as musos Roger Power on bass, John Wygens on guitar and Graham Russell on drums. Together they make a mixture of poetry and rock that varies from the dubiously pretentious to the highly moving and evocative. Check out 'Vade Mecum Gunslinger' and 'Ghost Nets' and decide which is which for yourself.

I'm not sure this is exactly genius, but no way is it crap either. One for the grubby anoraks - and proud of it.

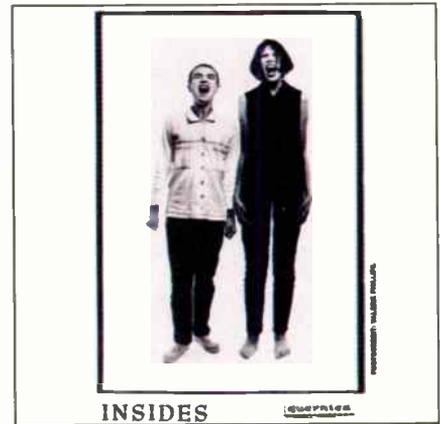
KRISTIN HERSH
Hips and Makers
4AD CAD 4002 CD

● Kristin Hersh is best known for giving her voice and lyrics to indie faves the Throwing Muses. But it doesn't really matter too much if you've never heard the band because this - her first, primarily acoustic, solo album - stands up in its own right. The lead-off single, 'Your Ghost', with backing vocals from REM's Michael Stipe has already made a considerable dent on the indie scene, and the presence of veteran writer/muso Lenny Kaye (Patti Smith Group, Suzanne



Vega etc. etc.) in the producer's chair is witness to the lady's strong, intelligent sensibilities where music is concerned. And while it's true to a certain degree that the breathy voicings and primarily acoustic backings are often very reminiscent of the aforementioned Ms Vega, Kristin can easily hold her own ground.

There is, for example, an undeniable sense of irony, when such a sweet voice delivers a putdown along the lines of the "You dipshit" declaration featured on the otherwise highly sensitive 'Teeth'. While she can be seductively reminiscent of Lennon at his most acerbic as on 'Beestung'. More predictably, Hersh can be evocatively fragile - witness only 'A Loon', which is a sliver of pure feeling, ditto the achingly delicious 'My Charms'. In fact charm really is the operative word here. This really is a very gentle sound. And one to treasure.



INSIDES
Clear Skin
GUERNICA

● The Insides duo are back, but with a difference; whereas they've previously been known for rather straight ahead, dancefloor-orientated techno the latest release from the combined talents of J. Serge Tardo and Kirsty Yates owes a lot more to a longer established tradition of electronic music. The CD-only release 'Clear Skin' is a 38 minute adventure in sound and texture which recalls everything from early Kraftwerk to the more deliberately ambient musings of Brian Eno and the entire 'new music' crew.

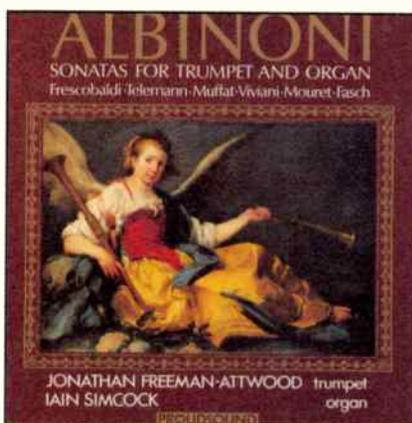
It's both engagingly arresting as well as wallpaper-subtle, a subtle blend of tone and texture that can be both arresting or subtly mood-enhancing. This may well be elevator music but it is, at the same time music that elevates you into a world that has yet to be invented. Charming in the extreme, totally engaging, it really will melt those insides of yours.

Rock + Pop

Classical

Peter Herring

More years ago than I care to remember, the Hungarian Quartet opened the door for me into Beethoven's string quartets. Will a bargain box of that same ensemble's Schubert recordings do the same for you? More recently, Kenneth Smith and Paul Rhodes on ASV have been opening the door on to some miniature masterpieces of British flute music. And, continuing, the theme of discovery, Radio 3 has revealed to me that I do like Respighi after all!



SONATAS FOR TRUMPET AND ORGAN
Works by Tomaso Albinoni; Girolamo Frescobaldi; Johann Friedrich Fasch; Georg Muffat; Giovanni Buonaventura Viviani; Georg Philipp Telemann; Jean-Joseph Mouret
Jonathan Freeman-Attwood, trumpet;
Iain Simcock, organ
PROUDSOUND PROUD CD 135 (DDD/66.59)

● Another very fine production from Paul Proudman's Proudsound label, a recording made in what proves to be the splendid acoustic of the parish church in Bromley, Kent. The organ is a three-manual and pedal mechanical action instrument by J.W. Walker and Sons of Brandon in Suffolk. The first Proudsound issue to come my way, a selection of German sacred music, was praised in these pages a couple of months back and I have since noticed that the label's CD of Ockeghem and Josquin Desprez was one of the critics' choices for 1993 on Radio 3's Record Review.

There were high expectations, therefore, for this new issue and they were not disappointed. Although the combination of trumpet and organ might seem to epitomise the brilliant sound of the Baroque, it is a comparatively recent partnership. The early valveless trumpet would have been an ill-match for the 'king of instruments' and the notion of

such a duet is largely down to contemporary trumpet virtuosos such as Maurice Andre. As a consequence, the repertoire for trumpet and organ relies heavily on transcriptions but this in no way compromises its 'authenticity', for the art of transcription was practised by virtually every composer of the seventeenth and eighteenth centuries.

Only four pieces here are bonafide trumpet works; the rest have been skilfully transcribed from canzonas, suites, sonatas and concertos by a host of the leading composers of the Baroque period. Particular attention has been paid to the organ accompaniments which have been 'realised' to give an appropriate melodic dialogue to complement the trumpet, or are reductions and reworkings from orchestral scores. The result is an expressive range of a breadth rarely encountered in recitals by this combination of instruments. The recording is also distinguished by its variety of moods: it is by no means all fireworks in the top register which, after the initial impact, quickly becomes wearisome.

There is much fine music to be savoured here, not least the splendid C minor concerto by Telemann who, to judge by the current interest in his work, finally seems to be emerging from the shadow of his contemporary, J.S. Bach. There are two canzonas by that early giant of keyboard music, Girolamo Frescobaldi, three sonatas by Tomaso Albinoni (of 'Adagio' fame, which he unfortunately didn't write!) and a dazzling D Major concerto for the clarino register by Johann Friedrich Fasch. Georg Muffat's suite in E Major, one of the works in his collection *Florilegium II* of 1698 is noteworthy for requiring two pistol shots to be fired during one of its dance movements; here, Jeremy Summerly pulls the trigger in *Les Gendarmes*. After Muffat's exuberance, Giovanni Viviani's *Sonata Prima per tromba sola*, one of two trumpet sonatas in his 'Capricci armonici da chiesa e da camera' is a touch more restrained and Jonathan Freeman-Attwood and Iain Simcock conclude

Continued On Page 79

Certain recordings garner a personal affection which transcends subsequent critical dissection. The Hungarian Quartet of the late 'fifties and 'sixties was my introduction to the string quartets of Beethoven, a revelatory and life-enhancing experience. For that, I remain eternally grateful, as I do to the Amadeus Quartet for opening the door to quartets of Mozart, and to the Fine Arts Quartet whose Bartok series on Saga performed the same role. Critical opinion now considers all these recordings surpassed; fair enough, but that does not diminish the impact, or the achievement.

The Hungarian Quartet's Beethoven series came on what we then still knew as the HMV label, a set of LPs whose only concession to graphic design was a change of background colour to each sleeve. The sober black - and - white picture of the players remained unaltered - a marked contrast with the contemporary presentation of classical music.

I continue to enjoy the Hungarians' Beethoven playing, partly I suppose because it is so heart-warmingly familiar. They are honest, unmannered, considered performances unencumbered by mystique or

mythology. The players do not seek to impose an interpretation, rather it unfolds and develops before the listener who is left to derive his own thoughts about Beethoven's intentions. Some say such performances lack 'personality'. Wrong. The personality is there; it is simply the servant of the music, not the music of it.

After so many years treasuring these Beethoven recordings, it was an exciting surprise to discover that EMI France had also recorded the Hungarian Quartet in Schubert and produced a two-CD set of, outwardly, remarkable value and, inwardly, of even greater promise.

FRANZ SCHUBERT

String Quartet in A minor D804/String Quartet in D minor D810 'Death and the Maiden'/String Quartet in G Major D887/String Quintet in C Major D956

Hungarian Quartet (Zoltan Szekely, violin; Michael Kuttner, violin (D956, D887); Alexandre Moskowsky, violin (D804, D810); Denes Koromzay, viola; Gabor Magyar, (cello); Laszlo Varga (second cello) D956

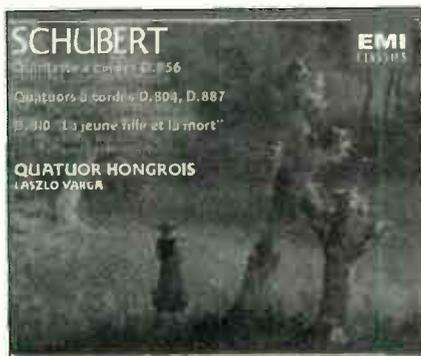
EMI CLASSICS (EMI FRANCE) CZS 7 67422 2 (ADD/156.03) (2 CD SET)

● From the above, lovers of Schubert will know that this set offers not just four of the greatest chamber compositions, but four of the finest pieces of classical music ever written. Here, Franz Schubert not only steps outside the giant shadow of Beethoven, he uses the quartet and quintet medium in a way that even Beethoven only hinted at. Where Beethoven, in his last chamber works, seems to explore certainties, Schubert's music is riven with doubts and fears. It is music's dark night of the soul, disturbing, disquieting, nakedly personal - and utterly compelling.

Perhaps more than any other, the last two quartets expose the inner torment of the composer - and brutally nail any preconception of chamber music as something played by dowdy spinsters in twee drawing rooms. The opening of the G Major quartet, for example, with its sinister tremolo effects is one of the most chilling episodes in all music - and all created from just four string instruments. As in its predecessor, the D minor D810, there is frequently a nightmarish quality to the writing, a fearful urgency. In both works, the slow movements have an aching sadness, even despair, and speak of bitter experience. It is extraordinary music to have been composed by someone in his late 'twenties. How the image of

Schubert, the fun-loving, happy-go-lucky Viennese bohemian masks what must have been his true nature.

For many, the C Major String Quintet represents the apex of Schubert's output of chamber music and, indeed, it is a work of sublime radiance. It is as if Schubert, in his last days, somehow emerged into the light, casting off the terrors that consumed him in the last two quartets. The slow



movement of the Quintet is a benediction comparable to the slow movement of Beethoven's Op.132.

The A minor (D804) and D minor (D810) quartets date from around 1824, four years before Schubert's death. Both quote from the composer's prodigious output of songs, the most conspicuous quotation being from his setting of Matthias Claudius's poem *Der Tod und das Madchen* (Death and the Maiden), the melody of which supplies the starting point for the set of variations which forms the slow movement. In the lyrical and noble A minor quartet two songs are hinted at: *Die Gotter Griechenlands* (The Gods of Greece) and the well-known Goethe setting, *Gretchen am Spinnrade* (Gretchen at the Spinning Wheel). The former, quoted at the beginning of the third movement, is a setting of Schiller in which the poet wonders where the

beautiful world has gone (*Schone Welt, wo bist du?*). We know from Schubert's letter to his friend, the painter Leopold Kupelweiser, just how much that reflected the composer's state of mind: "Imagine a man...whose brightest hopes have come to nothing, to whom the happiness of love and friendship offer nothing but pain...whose enthusiasm for beauty threatens to vanish."

Mercifully for posterity, that enthusiasm did not vanish.

But what of the Hungarian Quartet's performances of this multi-faceted, multi-layered, emotionally complex music? The playing of the A minor quartet is wonderfully refined, but with a keen appreciation of the work's essential poetry; the String Quintet receives a performance full of wisdom, maturity and insight. The Hungarians, augmented by cellist Laszlo Varga, get to the very heart of the work. The G Major blazes with intensity, the strings biting into the rhythms of the quick movements.

Only in the D minor 'Death and the Maiden' was I a little disappointed, the performance lacking some of the coherence and commitment which so characterises the other interpretations in this set. The playing, too, is not quite so assured or polished. This also happens to be the earliest recording here, dating from May 1958. The A minor quartet was taped five months later (both in stereo I hasten to add), while the G Major first appeared in 1968. The most recent of the recording - all of which were made in venues in Paris - is of the String Quintet and that was taped at the Salle Wagram in 1979. Sound quality varies but is never less than acceptable in terms of clarity and balance.

At around £14 for the two well-filled CDs, this set is a true bargain. But, more than that, you could find that the Hungarian Quartet - as it did for me in Beethoven - will supply an introduction to the music of Franz Schubert which will also be recalled with gratitude for many years to come.

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their recital with the unashamedly brilliant and grandiose Symphonies de Fanfares by Jean-Joseph Mouret, the only French composer to feature in the programme.

I confess to normally finding trumpet-and-organ feasts indigestible after a while, but the first rate playing here - and the careful choice of repertoire - won me over and this sixty-six minutes of music went down enjoyably well. The recorded sound, engineered by Paul Produman, complements the playing perfectly.



OTTORINO RESPIGHI
Aretusa*/Lauda per la
Nativita del Signore//
Tramonto*/Trittico
Botticelliano

Dame Janet Baker, mezzo-soprano*; Patricia Rosario, soprano; Louise Winter, mezzo-soprano; Lynton Atkinson, tenor; The Richard Hickox Singers; City of London Sinfonia; conductor, Richard Hickox

COLLINS CLASSICS 13492 (DDD/72.04)

● Tuning to Radio 3 one day over the Christmas period, I encountered some exquisite choral music. It had colour and charm, and was clothed with sumptuous melodies. Yet I recognised neither the work nor the style, although the language was Italian. It turned out to be Ottorino Respighi's *Lauda per la Nativita del Signore* (Hymn of Praise for the Birth of the Lord). But, wait, I thought - I don't like Respighi, a prejudice wholly based on a dislike of the three 'Roman' tone poems for which he is best known. As a result, Respighi's vocal music was entirely unknown to me until this chance encounter; it has been my loss.

Respighi was an eclectic, although not to the point of submerging his own individuality under the weight of influences. The colourful orchestral palette of one of his teachers, Rimsky Korsakov, made its mark on his style, as did the tone poems of Strauss. Respighi was also one of the prime movers in the revival of interest in 'early music'. He was adept at working devices such as Gregorian plainchant motifs into his own music. It was all unscholarly but his

contribution to the rediscovery of such music has to be applauded.

Respighi's setting of da Todi's nativity text, a joyful act of devotion, also harks back to an earlier age, that of the sixteenth century madrigal; there is even a hint of Monteverdi's early arioso style. But the work has a substance, a beauty and a heart-warming appeal that extends beyond mere parody.

The two other vocal pieces on this recording are settings - in Italian translation - of two poems by Percy Bysshe Shelley and they mark a welcome return to the recording studio for Dame Janet Baker. Her voice proves to have lost none of its richness and suppleness and she colours the vocal line with consummate skill and subtlety. These two works - *Aretusa* and *Il Tramonto* - were early flowerings of Respighi's talent and he responded more to the pictorial elements of Shelley's texts than their dramatic implications. This feeling for the pictorial again manifests itself in the final work on this well-filled disc, the orchestral triptych, *Trittico Botticelliano* (Three Botticelli Pictures). Composed in 1927, Respighi chose to illustrate in music probably the three most famous paintings of his countryman: *La Primavera* (Spring), the *Adoration of the Magi* and the *Birth of Venus*.

While this is no attempt to penetrate the characters and subtexts of the paintings as Mussorgsky so successfully achieved in his homage to his artist friend, Victor Hartmann (*Pictures at an Exhibition*), Respighi's more literal treatment is no less enjoyable for that. His feel for orchestral colour and imagery is at its finest here.

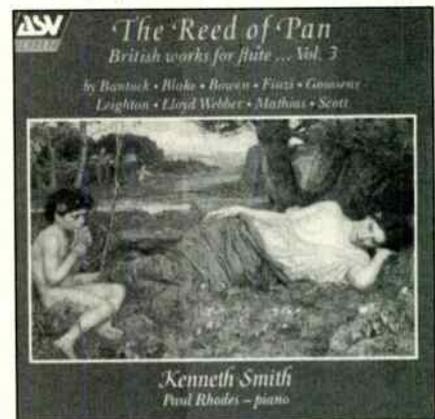
Although Dame Janet Baker's contribution inevitably dominates this excellent Abbey Road recording (a James Mallinson/Mike Steady production), praise must also go to the other vocal soloists, choir and orchestra, and to Richard Hickox for his sympathetic and wholly persuasive treatment of these delightful scores.

THE REED OF PAN
British works for flute by
Granville Bantock, Howard
Blake, Edwin York Bowen,
Gerald Finzi, Eugene
Goossens, Kenneth Leighton,
William Lloyd Webber, William
Matthias, Cyril Scott
Kenneth Smith, flute; Paul Rhodes,
piano

ASV CD DCA862 (DDD/77.24)

● This is the third of Kenneth Smith and Paul Rhodes's collaborations to appear on the ASV label and, like its predecessors, it merits unqualified praise. (I should add, perhaps, that the previous CDs were 'Summer Music on ASV CD DCA739 and 'Folk and Fantasy' on CD DCA768.) What is especially enticing about these issues, apart from the

playing of Messrs Smith and Rhodes, is the astonishingly high quality of the music which they have uncovered from what - superficially - would appear less-than fertile territory. The reedy, pastoral oboe has always been more beloved of British composers than the Arcadian sound of the flute, which is far more strongly associated with France. Yet here we have, once again, a whole host of impressive compositions, all originating from these shores and all - amazingly - world premiere recordings. Nine composers are represented and there is but one transcription among the works recorded, Kenneth Smith's own arrangement of Gerald Finzi's delightful *Five Bagatelles*, originally written for clarinet and piano.



From the pen of the Welsh composer William Matthias comes a sparkling sonatina which gives Kenneth Smith plenty of scope to display his virtuosity in its rhythmic gyrations. Equally imaginative is the three movement *Serenade* by Kenneth Leighton which develops substantial roles for both instruments as it paints an, at times, haunting and wistful musical landscape.

Cyril Scott - whose impressionistic style once earned him the soubriquet of 'the English Debussy' - is represented by *Lotus Land*, an atmospheric piano piece which Paul Rhodes has realised into a duet of considerable beauty. William Lloyd Webber's *Mulberry Cottage* is a miniature suffused with heart-easing contentment and Howard Blake demonstrates there is far more to his talent than the ever-popular *Snowman* theme by contributing an *Elegy* that offers the flute every chance to shine. The programme opens in the most arresting manner imaginable with Granville Bantock's splendid *Pagan Poem* and concludes with York Bowen's finely-crafted *Flute Sonata Op.120*. Although ostensibly a showcase for the art of Kenneth Smith and Paul Rhodes, this recital - like its predecessors - also opens a door of discovery on to what is invariably very fine and often very beautiful music. As well as the artistic standard, the technical quality of this hugely enjoyable series is maintained with this latest release.

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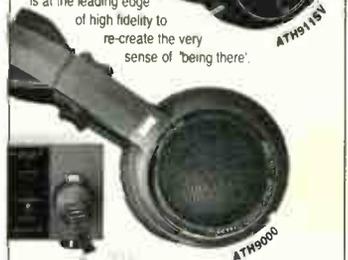


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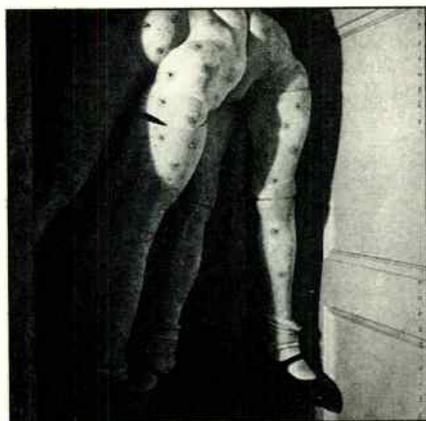
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Simon Hopkins



NAKED CITY **Absinthe** **AVANT AVAN 004**

● If there's been one term kicked around more than any other by music critics and fans over the last year, then it's probably 'ambient'. A description apocryphally invented by Brian Eno for music which could be at once background muzak and close-listening stuff, increasingly you can bet that wherever you see the word you're going to hear some kind of rhythmless (or at any rate largely non-rhythm-dominated) post-rave music, some of it excellent, much of it tedious drivel. But whatever ambient denotes, you can generally expect to hear music with not a lot going on, on the surface at any rate.

And then there's John Zorn. I've written enough about Zorn's history here before. If you haven't caught on yet: where have you been? If you are aware of his music, then you'll know that the

phrase 'not a lot going on' isn't exactly one which springs to mind. Zorn is king of maximalism. His music is definitive collage, a music celebrating the culture clash: urban life as art form.

When I first heard that Zorn was starting his own label well over eighteen months ago now, I wasn't at all surprised. Zorn's knowledge of contemporary music is legendary, as is his refusal to recognise a high-brow/low-brow divide, and anyone whose live shows are peppered with reverential name-checking to the degree of his handful of UK gigs with Naked City - of whom more in a moment - was bound to want to do more than stick to simply making his own music. He was going to want to do something with other people's, too.

What did surprise me about the original press release that went out on Avant, was that Naked City were to record an album of ambient music. Remember: ambient = minimalism, Zorn = maximalism. Go figure.

Well, it's been a long time coming, but Absinthe has been well worth the wait. First off, though, Naked City. Zorn formed the group in the late 80s, a compact quintet able to handle the grand ambitions of his genre-melding collages: guitarist Bill Frisell; keyboardist (and grand master of B-movie sleaze 'n' cheese) Wayne Horvitz; bassist Fred Frith; drummer Joey Baron; and Zorn himself on alto. Latterly they've acquired Japanese blabber-mouthing vocalist Yamatsuka Eye - of The Boredoms. But despite his essential presence on the companion piece to this record, Radio, (reviewed elsewhere this month), he's absent from this piece.

So, then, is the classic Naked City line-up renowned for its frenetic energy, chilling out? Er, not exactly, no. Zorn rescued the concept album from the clutches of post-punk scum long ago, and his work has tackled subjects as wide apart as the Holocaust (Kristalnacht), the music of Ennio Morricone (The Big

Gúndown) and Omette Coleman (Spy vs Spy), pulp fiction (Spillane) and on and on. And so, in its way, Absinthe too is a concept album, the narcotic wormwood gin much-abused by fin de siècle French intellectuals, forming the psychological landscape of the pieces that make up this album.

The result is terrifying stuff. Away from their more (in)famous jump-cut escapades, Naked City have ventured into minimal soundscapes before, notably on 'Leng Tche' (a thirty minute tapestry of guitar feedback, subsonic bass and droning synth finally erupting into howling alto sax and tortured vocals) and on the title track of last year's mind-numbingly brilliant Grand Guignol, an eerie, melodramatic evocation of the graphically violent 19th century French theatre.

But nothing so evocative as the ten pieces that make up Absinthe, ten pieces which at once recall the blasted post-industrial soundscapes of Throbbing Gristle and SPK, On Land-period Brian Eno, the fragile, attenuated work of European composers like Scelsi and Ligeti, not to mention that of fellow Americans like Morton Feldman and Ingram Marshall. (The latter a fierce Zorn detractor, but then, you can't win em all.) And, perhaps more than any of these, the sort of anti-rave, minimal ambient music being made by an increasingly large and aesthetically ambitious group of rock musicians, a music being dubbed 'isolationist' in some of the better-attuned critical circles.

The music of Lull (brainchild of erstwhile Napalm Death drummer Micky Harris - not surprisingly name-checked in the Absinthe sleeve notes), of guitar sound sculptors Main, of Final (ambient holiday home for the otherwise far noisier Godflesh guitar god Justin Broadrick), of Techno Animal (similar chill-out, no, freeze-out space for God sax-screamer K Martin and the aforementioned Broadrick) . . . All this music is a parallel world to the ambient sounds of The Orb and co., one which is taken from many of the same sources - American minimalism, Eno, psychedelic rock - but has steered well-clear of the ridiculous cosmic trimmings. The message is clear: the still calm at the centre of the soul is a bleaker place than a generation of former E-heads would have you believe.

Which is why, of course, Zorn takes the effects of absinthe, rather than those of some altogether more enjoyable psychedelic drug, as his springboard into the dark unconscious. What the unofficial Isolationist movement boys know, Zorn knows too, but to it he brings his own particular bag of psychoses and musical fetishes. The results are as far from the genre-rape of Spillane and, say, Naked City, as they are from the beautiful requiem of Kristalnacht, but this is still unmistakably Zorn; the music of the most far-reaching, intelligent, restlessly experimental and endlessly resourceful musical mind of our time.

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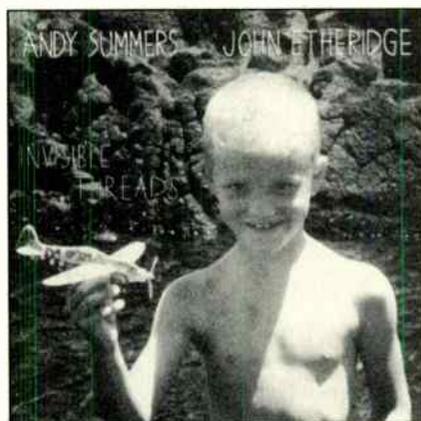
Orelle
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Simon Cooke

ANDY SUMMERS/JOHN ETHERIDGE Invisible Threads INAK 9024CD

● When any ageing rock star suddenly turns to jazz standards, or in this case throws a couple into a set to give credence to a 'jazz inspired album', I get an acute attack of cynicism. The kind of albums I have in mind generally contain rambling and self-indulgent sleeve notes about how deeply meaningful jazz has been to the perpetrators through the long, dark years spent fleecing the paying public with top-ten pop-pap and generally living the life of Riley on the proceeds. Sorry, but I tend to run with Sam Johnson on this one ('No man but a fool ever wrote, except for money').

Having got that out of my system, I'd better explain that the Mr. Summers in



question just happens to have been in The Police, so I wholeheartedly withdraw the 'pop-pap' accusation, but I'll insert a 'copycat' one instead, since Sting has been playing around with jazz since Dream of the Blue Turtles, when some of the best jazz talent suddenly coalesced into a group around him in circumstances that would make the Fortean Times blush. Sting was absolved by the fact that 'Turtles' was probably the best album of the year: arguably of the decade, since many better contemporaneous works seem to have passed into obscurity.

The Summers/Shepherd axis does not carry it off. It follows the common guitar duet path of being instantly forgettable, dismal stuff. It is executed well, excepting the finger-movements which sound loud enough to make Segovia wince, but that doesn't stop it being shopping music. The two standards covered - and they should be - are Django Reinhardt's 'Nuages' and Monk's 'Monk's Mood'. The former is passable, but uninvolved. If the latter had originally been played by Summers, people would have thought that Monk had the emotional repertoire of Postman Pat.

The original tracks in this set are bracketed, in content, between

these two standards: workmanlike, but undynamic. I'd recommend this CD to anybody who wants to dip into jazz guitar, because it's well recorded and inoffensive. Apart from that, Mr. Summers may well have paid his dues in the rock world, but that doesn't necessarily count for anything in jazz.



TOMMY SMITH/FORWARD MOTION Reminiscence AKD 024

● Another axe I have to grind about jazz today is derivation. Much of the output of younger jazz musicians sounds less like a tribute to jazz giants than a direct rip-off. This disc sounds, in part, like a direct copy of some of Jan Garbarek's work alongside my personal favourite Eberhard Weber. So much so that I was checking various phrases back with my Weber collection and finding very little to choose between them: tone and phrasing are so close as to be almost interchangeable. The differences lie in the quality and clarity of the work, where Garbarek and Weber emerge the clear masters, but they do not have bebop and modern influences in their music which the Smith-penned pieces on Reminiscence use to great dynamic effect as a foil to the delicate strains of bassist Terje Gewelt's writing. This acceptance of extra-Eurasian influences opens the music to an aggression and vibrancy quite foreign, but similar, to the music of truly European 'jazz'. A recommended disc for those who like sax players from Garbarek to Gillespie and Parker, backed by the solid recording quality of Linn.

Jazz



JOHN ZORN'S NAKED CITY Radio AVANT AVAN003

● A more traditional story from Naked City than Absinthe, but equally far-reaching, intelligent . . . well, you've just read all that.

My first exposure to Zorn was at a Naked City gig: (as a card-carrying guitar junkie I'd actually gone to check out Bill Frisell, whom I admired greatly at the time). In one evening, I genuinely had more of my musical assumptions turned on their heads than before or since. I came out of the concert almost literally reeling, with the single overwhelming memory of a cornucopia of music existing out there that I'd never even imagined. Music that I knew well and loved - Omette Coleman, 50s hard bop - wrestled with music only half knew, and barely appreciated - The Beach Boys, Morricone, Bond soundtracks - and stuff I'd barely even heard of. 'This is something I wrote for Micky Harris, drummer with Napalm Death,' I recall Zorn saying between tracks, 'fucking great band.' It was worth the price of the ticket to discover that band alone.

It's six years on, and alongside mesmerising stuff like Absinthe and Kristalnacht, Zorn's still evangelizing about the music he loves. Radio is one of two sets recorded around the same time as Absinthe - in the spring and summer of 1992 - and is a loving tribute to the sounds which have inspired him. Nineteen short songs, the longest clocking in at a fraction over six minutes, each a collage of music played in the style of a particular musician, group or composer, or perhaps inspired by a writer or film director (the final 'American Psycho' being the ultimate joyride across the radio dial: Liberace/Jan Hammer/Napalm Death/Eddie Blackwell/Charlie Haden/Mick Harris/Carole King/Red Garland/The Boredoms/Jerry Reed/SPK/Roger Williams).

You get the picture. It's a simple idea, and one, as I've said, not exactly novel to NC fans, but the music is executed with such love that you'd have to have stonecladding on your ears - or your heart - not to be won over.

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£395 ▼



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Designed for long life, low running costs and excellent sound quality, K5881 is sensitive enough to be used with a simple passive pre-amp. or our own line-drive pre-amp, and it matches modern loudspeakers well. There is a choke-regulated power supply and the channels can be paralleled to turn it into a 40W monoblock if desired.

K5881 costs just £395 as a kit of parts and £595 fully built from our own build service. The U.K./Europe version has a 240/220V transformer but 120/110V can be supplied as an alternative - see Overseas details on Order Form.

SPECIFICATION

Power	20watts/ch.
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
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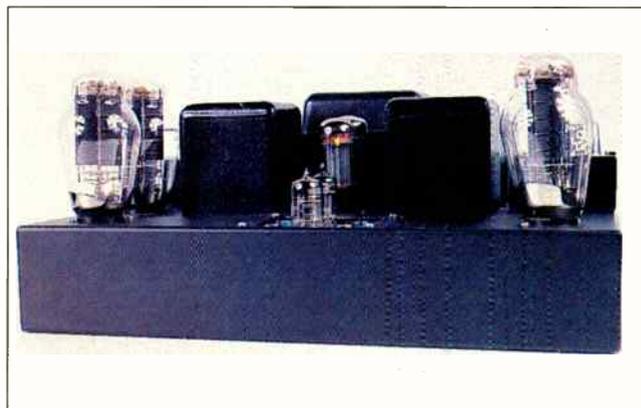
300B VALVE AMP KIT

£750



4W SINGLE-ENDED TRANSFORMERS

£190



This is a specialised amplifier based on the highly linear 300B triode valve. Tim de Paravicini designed it - including the massive transformers - for minimum distortion without overall feedback. If you want feedback (tertiary or overall), it can be applied without difficulty.

Our 300B runs in Class A, 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 4/8/16Ω are selected internally at the transformer. A small circuit board carries most of the components. 240/220V and 110/120V versions available - see Overseas details and prices on Order Form.

All parts are included in the kit, except valves since different 300B makes are available.

A fully built version from an approved build service is also available for £1050 (valves extra). Availability - end of January 1994.

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, 220V
Weight	20kgs(44lbs)

DEMONSTRATIONS!!

By the time you read this we hope to have our K588I 20W valve power amplifier and KLP-1 valve pre-amplifier on demonstration at Hi-Fi Confidential, 34 Buckingham Palace Road, Victoria, London. Phone the patient and understanding Luigi on 071-233-0774 to check availability. He's a valve aficionado, knows Tim de Paravicini and is still sane, and stocks plenty of good products - including World Audio Design. So hear us against the others - and don't you dare buy them

A set of transformers (8kgs) for our single-ended amplifier (December '93. Supplement No 6).

- 1) Mains (1 off) Secondary: 0-210V a.c. at 150mA, 6.3V centre tapped. Primary: 220/240V or 110/120V - please state which on order form. Drop through fixing.
- 2) Output (2 off) High quality transformers with grain orientated silicon steel laminations. Secondary tapped 4/8/16Ω. Drop through fixing.
- 3) Choke (1off) Compact 1.2H/150mA choke for under-chassis fixing. Frame mount.

6080 valves - double-triode power valve for the single-ended amplifier - £15.00

K588I (20W CLASS A) TRANSFORMERS £220

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) These transformers use high quality materials, laminations of thin and best quality grain orientated silicon steel. Output tapped 4Ω, 8Ω and 16Ω. 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 (28W CLASS A) TRANSFORMERS £430

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. Cores with centre-hole fixing to avoid corner flux concentrations; laminations of grain orientated silicon steel. Output tapped 4/8/16Ω. Drop through fixing.
- 3) Intervolve/phase splitter (2 off) Special Tim de Paravicini design, potted in steel for secrecy. Drop through tags.
- 4) Chokes (2 off) For smoothing of the H.T. lines, two 5H chokes that fix under the chassis. Frame mounting.

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Our high performance 3-way DIY loudspeaker featured in Supplement Nos. 3 & 4 is now available as a kit. 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. All drive units and hardware are supplied.

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.

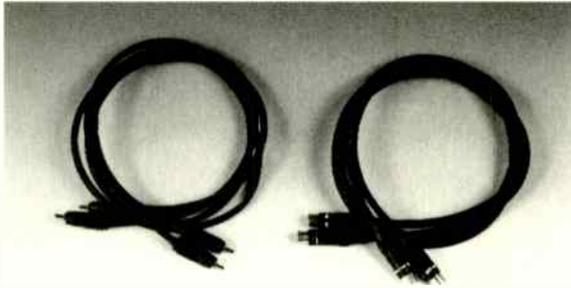
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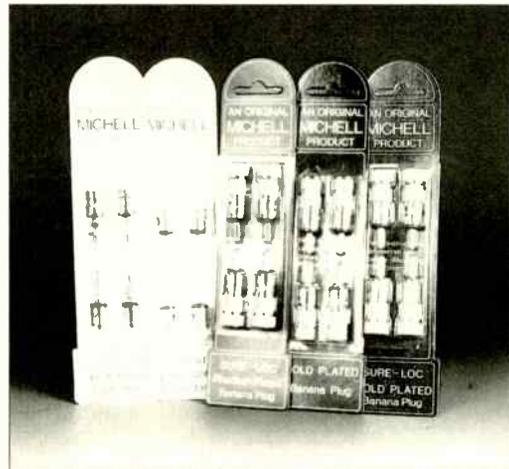
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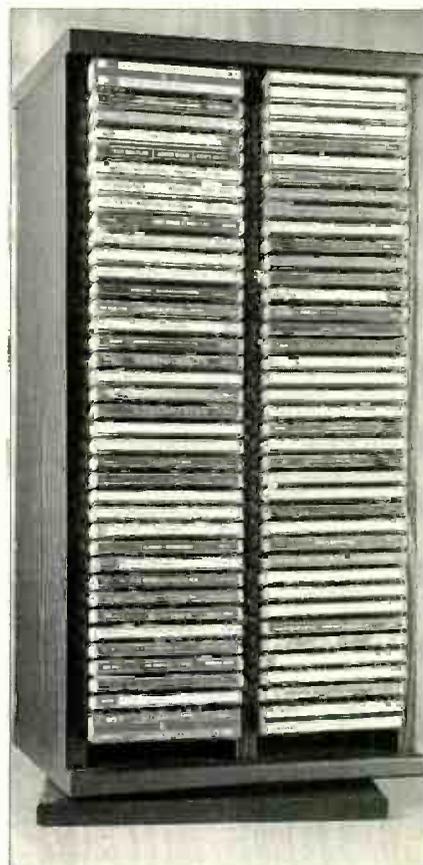
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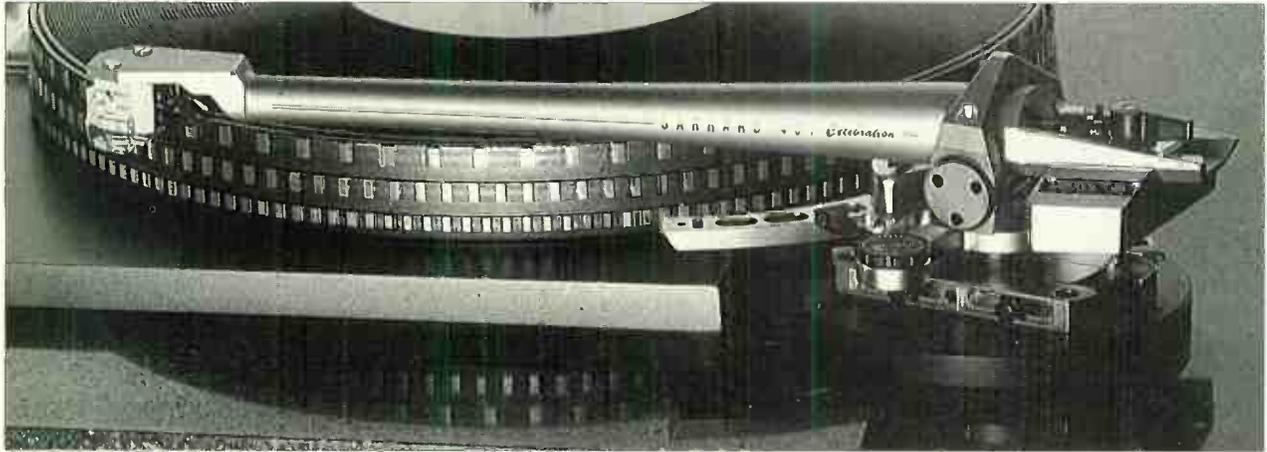
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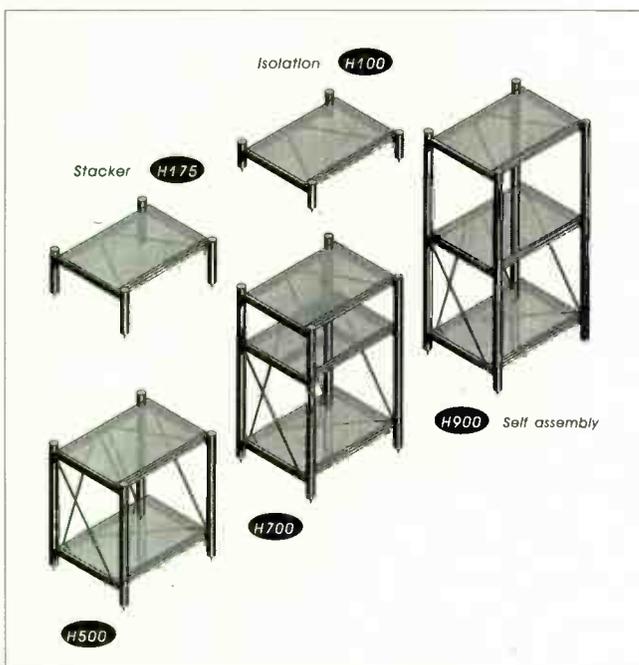
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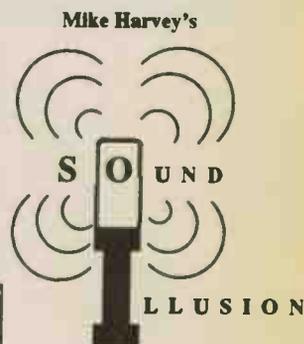
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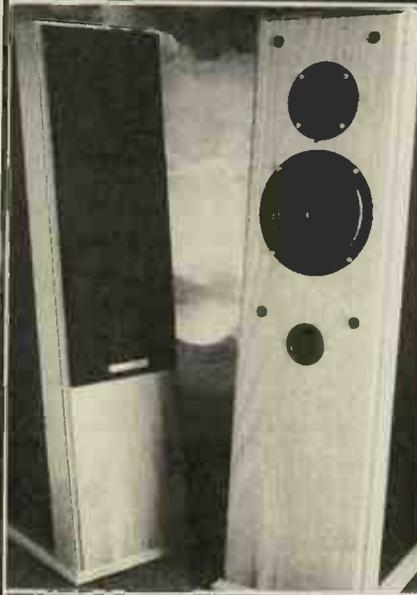
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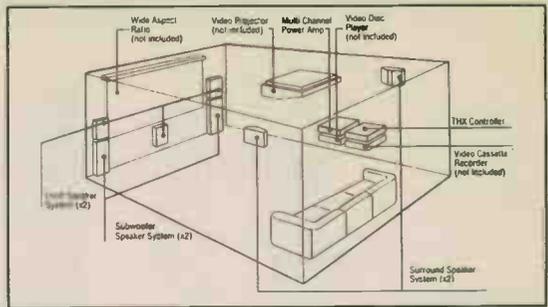
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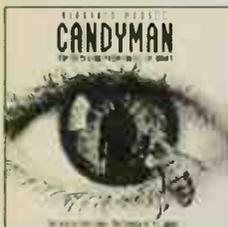
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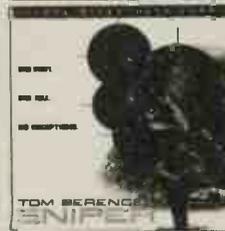
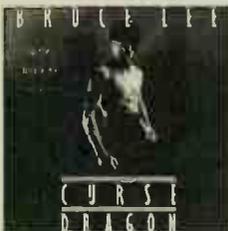
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World favourites

COMPACT DISC PLAYERS

NAD 501	£180	A break from the MASH tradition, the Philips powered 501 gives excellent results.	Apr'94
DENON DCD 890	£270	Exciting and forceful sounding player, but slightly characterful	Nov'92
ROTEL RCD965 DIS	£350	A smooth and easy sound make this one of the best value players around.	Jan'94
QUAD 67	£790	A new breed of Quad. Lacking nothing in verve or excitement.	May'93
SUGDEN SDT 1	£850	Airy and spacious with a rare quality of ambience.	Mar'93
NAIM CDI	£1598	Single box, 16 bit player. Close to the two box CDS, has vital 'tingle factor'.	Apr'92

COMPACT DISC TRANSPORTS

DPA DIGITAL T-1	£795	Superbly detailed sounding transport when sync-locked to DPA's converters.	Jan'93
ORELLE CD10-T	£799	Very involving, unforced and natural when used with Orelle's DA-180 DAC.	Feb'94
M'MEGA DUO CD.2	£1850	Seriously priced, serious CD using Philips' CDM-9 PRO mechanism. Exemplary.	Apr'93

DIGITAL TO ANALOGUE CONVERTERS

QED DIGIT/OPTO	£139/169	Excellent value, with no rough edges. Now with optical input (Opto).	May'92
DACULA	£376	This little devil from Select Systems really gets its fangs into the music.	Dec'93
DPA DACS	£450-2K	The current masters of DAC-7, their DACs offer superb performance at a range of prices.	
ORELLE DA-180	£599	'Analogue' sounding converter, best with matching transport.	Feb'94
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
P. T. DA CAPO	£1450+	Pink Triangle's own one bit DAC reaches new standards in digital. One of the very best. Even better with DC supply and new filter options.	Mar'94

TURNTABLES

PRO-JECT 6	£350	Great involvement and rhythm. Comes with Ortofon MC15 for £399	Dec'93
MICHELL MYCRO	£397	In between the Syncro/Gyrodec, the Mycro has superb midband clarity and poise.	Apr'92
TOWNSHEND ROCK III	£799	The MkIII has a fabulously stable, solid image and terrific bass.	Feb'94
P. T. ANNIVERSARY	£1200	Very neutral turntable. Excellent imagery and detail.	May'92
SME MODEL 20	£2495	The last great turntable, bettered only by the £11,000 Model 30.	Oct'92

TO NEARMS

REGA RB 300	£139	Simple and superb; dynamic with solid bass.	
SME 309	£568	Based on IV and V: Aluminium armtube and detachable headshell.	Jan'93
SME IV	£850	Looses little to the fabulous V, possibly the best value for money SME.	Dec'93
SME SERIES V	£1232	A masterpiece of precision engineering, with a cohesive sound.	May'92

CARTRIDGES

GOLDRING 1012 GX	£60	Rounded bass, slightly forward midband, clean transients. A bargain.	Jul'93
GOLDRING 1022GX	£80	Extra degree of dynamic range and speed over the 1012GX	Jul'93
SUMIKO BLUE POINT	£100	The Blue Point casts a romantic charm over all types of music. Robust too.	Oct'92
ORTOFON MC15	£100	Moving coil cartridge at a moving magnet price. Has a tight grip on rhythm.	Jun'92
GOLDRING 1042	£100	A reference to all other MMs regardless of price	May'92
GOLDRING ELITE	£200	British made moving coil. Good value, smooth and detailed.	Apr'92
ORTOFON MC2000	£650	We came across this one by accident; used on a Garrard 401 with an SMEIV it gave one of the best results we've ever heard.	Dec'93

CASSETTE RECORDERS

SONY TC-K611S	£330	A Dolby S bargain. All the gadgets necessary to produce great recordings.	Feb'94
NAKAMICHI DR2	£500	Worth every penny, pushes recordings to the limit and remains unflustered.	Feb'94
NAKAMICHI DR1	£780	Nakamichi sound quality, and manual head azimuth adjustment.	Jun'93
NAKAMICHI CR-7	£1500	No Dolby 'S', but auto tape tuning and motorised head. The Best!	Aug'92

TUNERS

NAD 402	£160	Stunning budget tuner, with a warm and open sound. Can compete with the best.	Jan'94
AURA TU-50	£230	Superb FM-only tuner. Produces a delightful, three-dimensional sound. A cracker.	May'92
YAMAHA TX-950	£260	Fine all-rounder, with good AM section.	Jul'92
MISSION CYRUS FM7	£299	Clear and lucid sound. One of the best, regardless of price.	Apr'94

World favourites

H/K TU9400	£300	Fairly basic facilities, but sound which beats most at the price.	Jul'93
QUAD 66FM	£490	Among the very best in terms of tonal colour and imagery. Remote controllable.	Nov'92
NAIM NAT 03	£500	Warm and easy sound with a good sense of atmosphere. Good value.	Sep'93
NAIM NAT 01	£1377	The best solid state tuner currently available. For better radio, live in the studio!	Mar'92

INTEGRATED AMPLIFIERS

H/K HK6150	£159	Good sounding starter amplifier. Great dynamic range, excellent bass.	Jun 92
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
AUDIOLAB 8000A	£430	Very neutral and superbly built. Good bass, great imagery, but can be sterile.	Apr'92
J.SHEARNE. Phase2	£495	Gorgeous looks, even better sound. Tight, quick bass and valve-like mid and treble	Dec'93
MISSION CYRUS III	£499	Superb engineering, a solid cast chassis and a clear and spacious sound.	Apr'94
SUGDEN A21a	£639	Class A transistor amp. Sharp, crisp, deep, tight, and it images well too.	Feb'94
AUDIONOTE OTO	£1250	12w Valve amplifier. More in tune with music than hi-fi. Superb dynamic range.	Jun'92
EAR 834	£1295	Valve integrated amplifier with a sweet, open and detailed sound.	Feb'93

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EAR.834P	£290	MM/MC phono stage. Uses valves to create a rich sound with tremendous depth.	Jan'94
A. Innovations. L1	£299	Valve line level preamplifier. Outstanding results with vdH carbon interconnect.	Feb'94
A. SYNTH. PASSION	£475	Or £275 for the kit version. Unrivalled transparency from a passive pre-amp.	Aug 93
ROSE RV23-S	£495	Valve/Transistor hybrid. Smooth and clean, rich and spacious.	Nov'93
DPA DSP 200S	£495	Not quite the 50S, but there's still nothing to match it at the price.	Jun'93
MICHELL ISO HR	£850	Impossible not to recommend. What more does your vinyl want?	May'93
NAIM NAC82	£2000	Remote control preamp. The NAC82 thrusts detail forwards in true Naim fashion.	Apr'94

POWER AMPLIFIERS

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QUAD 606	£675	140W powerhouse. Smooth and civilized, with the legendary Quad back-up.	Aug'93
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MICHELL ALECTO (S)	£1300	Valve like transparency, big warm easy going sound.	Sep'93.
MICHELL ALECTOS	£1800	The Alectos have a lucidity and three dimensional realism that is rarely attained.	Dec'92
NAIM NAPI80	£898	Partner to NAC82. Has real drive and grip on loudspeakers.	Apr'94
CHORD SPM 1200	£2995	Massively powerful, dynamic and detailed sound. Among the best of solid state.	Mar'93
E.A.R. YOSHINO	£25,000	Single-ended valve design. Noel is still suffering withdrawal from this product.	Jul'93

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GLL MAXIM	£120	Replacing the Maxim 3; not as tight in the bass but still one of the best at the price.	Aug'93
MISSION 760ISE	£150	One of the best miniatures around, very musically involving.	Jan'94
HARMAN LS 0300	£200	Glass fibre woofer gives a forward and open mid with good bass kick	Nov'93
TDL RTL 2	£250	Bass on a budget. Solid, vibrant and spacious sound.	Dec'93
SYSTEMDEK 93 I	£300	Poor man's LS3/5a? Coherent and involving, these little gems really sing.	Mar'94
HARBETH HL-P3	£400	There probably isn't a more neutral sounding design anywhere near the price.	Feb'93
ROGERS LS8a/2	£449	Big, enjoyable, room filling sound from this 2-way floorstander.	Feb'94
REL STRATA	£499	REL's Strata offers excellent bass depth and power.	Mar'94
H'BROOK QUARTET	£555	Sensitive enough to work with low power valve amps. Fast and detailed sound.	Jul'93
JPW RUBY I	£500	Metal driver 'speaker with an exciting and lively presentation.	Aug'93
TANNOY D100	£650	Believable 3D images produced by this small dual concentric speaker.	Jan'94
PROAC Studio 100	£699	Excellent monitors with detailed, natural sound and plenty of atmosphere	Feb'94
SPENDOR SP2/3	£769	Smooth sounding speaker with a superb mid-range. Very easy to listen to.	Feb'94
PROAC RES I S	£918	Small box design. Can convey the spirit, drive, and passion of music.	Jul'92
TANNOY D700s	£1970	Dynamic and powerful. Needs a good clean power amplifier for best results.	Sep'93
TANNOY GRFM	£3500	Giant loudspeakers. Capable of awesome sound. Need good valve amplification.	Jul'92

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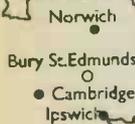
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Roy Gregory, Hi-Fi Choice.

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Alan Sircom, Hi-Fi World

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readers'

queries

WARMING UP

At present my system comprises a Rotel RCD-965 BX, Linn Intek MK2, Epos ES1 Is (on Epos stands), AKG K 240, Linn interconnect, Audioquest F-14 and Naim NAC-A5 (single wired).

I am quite pleased with my system but sometimes I think that the upper treble (such as hi-hats etc.) sounds too metal-like and 'un-warm' - this is more evident on some CDs than on others. This bright-sounding reproduction makes it more difficult to follow the vocals and contributes to making the whole system disintegrated. To cure this problem I changed cables to Naim NAC-A5 but to my despair no luck! In your article 'Mini Monitors For The Home' (Jan 1992) I noticed that you also encountered this problem: 'Its flaws . . . such as some tailoring to remove the 'spit' from the metal dome'. So what can I do about this problem?

I also think that my system needs a touch more bass. I'd like to add more weight and scale as well. Unfortunately I can't have too large loudspeakers since my room is very small (five metres by three-and-a-half metres) and since my small apartment (I like to refer to it as my small penthouse) is an old house with springy floorboards, and

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the bass has a tendency to become overblown.

I also want my system to be a bit more involving and exciting as I think it is a bit too sophisticated. I mainly listen to music created by Depeche Mode, Pet Shop Boys, New Order, Simple Minds, U2 etc. and I like a very detailed sound.

I am also on the look-out for a tuner like the Arcam Alpha 3, NAD 402 or the new Denon RDS tuner. What do you recommend? I need a turntable to play my 12" singles as well. I have only about 100 12" singles and I play them only occasionally as I prefer CD as a medium, therefore I want a turntable that is not too expensive. Sound quality is the only thing that is important to me. Will a

Rega Planar 2 suffice or will a Linn Basik significantly improve sound quality? Unfortunately a Systemdek IIX is out of the question since it costs about £500 in Sweden with a RB250 arm. Could you please recommend a tuner and a turntable?

As for my other problem, I have some suggestions that I'd like you to comment on.

Would a change in cables to Linn K400 remove the 'spit' that I don't like and improve the bass? I've placed my speakers one foot from the back wall; do I need to re-position them? I'd really like an article about positioning 'speakers by the way! What is my next logical upgrade? Should I:

Upgrade my front end for an overall sound quality improvement with a Micromega MicroDac for example, or would an Arcam Alpha be a wiser move? Or should I aim higher with a Teac VRDS-10?

Change 'speakers to a floor standing model like the Linn Keilidh for improved bass?

Add a power amplifier to the Intek. Is the Intek good enough? Is it possible (or wise) to connect a Linn LK100 or NAD 2100 instead of the obvious Linn Powertek to the Intek? I am wondering as the Pretek/Powertek really hasn't

got the best reviews.

Thank you very much for the best hi-fi magazine currently available mainly because, in my opinion, you don't change favourites every other week like other magazines do!

Paul Bjernklo Sweden.

First things first. Find a dealer who'll let you have a careful listen to equipment before you buy it and, better still, allow you to change something after a week or so if it's not right.

As far as the 'metal-like' sound quality is concerned, I suspect it has something to do with the rather analytical nature of the Epos ES1 Is' metal dome tweeter. This can be minimized by using a smooth, high quality, solid core cable. Try using Audioquest Indigo or DNM speaker cable throughout. An interconnect from the same companies will also help out. Using the Indigo will also give you a deeper and more detailed bass.

The lack of involvement is probably down to choice of amplifier and CD player. A NAD 2100 and 1000S combination will certainly show up the Intek in terms of 'the boogy factor'.

Continued on page 117....

.... Continued from page 115

For a decent tuner look no further than the Jan '94 issue review of the NAD 402. This is an excellent tuner, possessing much of the warmth and depth of soundstage of more expensive tuners. The Rega Planar 2 is fine for playing the occasional record, as is the Pro-ject 2, which possibly offers better value now because of the deal you get on an Ortofon Moving Coil cartridge.

The positioning of the speakers sounds fine, although they may benefit from being pulled out into the room a little and the speakers themselves are quite capable of handling a higher quality amp and source.

Arcam's Alpha 5 would be something of a sidestep from the Rotel. A two-box machine such as the Orelle DA-180 and CD-10T, or the integrated Marantz CD-10 would both present suitable upgrades. However an outboard DAC will be the best value upgrade. Try either DPA's Little Bit II or Perfect Pitch's Dacula. **DT**

POWER PROBLEM

As there is no one in Mauritius I can seek advice from regarding a decision I want to make in respect of a change of power-amplifier, I would be most grateful for your contribution on the matter, together with your views as to whether such a change would really be beneficial. High-end audio equipment is not available in Mauritius for auditioning and my system has been built over the years exclusively from information obtained from test reports, readers advice columns and general comments from audio magazines, including your own publication since March 1991.

I have a large dedicated listening room with good acoustic performance. The

sound quality seems excellent, but since I have no means of comparison, I was wondering whether my thirteen-years-old Yamaha B2 power amp (partnered with the matching C2 pre-amp) might be letting the system down when compared with the latest high-end British equipment. I am seriously considering updating the power amplification side of my system, and I have in mind the following:

Meridian 605 monoblocks,
Michell's Alecto monoblocks,
Chord SPM 1200.

My system comprises only a CD player source. I use IMF MK IV Reference transmission line speakers (even older than the B2, but still going strong). I also have a Passion control unit from Audio Synthesis, which, when used in the place of the C2, is no better, or no worse than the latter.

Alain G Lefebure
Port Louis,
Mauritius.

Of the three amplifiers you mention the Alecto is possibly the most musically involving, but it doesn't enjoy inefficient or low impedance loudspeakers like the IMFs, so possibly is the least suited of the three to your needs. The Chord SPM 1200 is the complete opposite. It has absolutely masses of power, but is also quite analytical in nature. Having said this, it is very detailed and smooth in its delivery and of the three is the one I'd recommend.

There are a few others that are also worth considering though; Sugden's AU41P has plenty of power and a rich and inviting sound that should suit your system well. Over here it is £500 or so, £2500 less than the Chord, so may be a bargain upgrade, even allowing for the export price. Quad's new 606 also has plenty of power and a gentle, musical sound and should not be ruled out.

DB

BASS POWER

Having lived in Germany for 2 1/2 years, I am now returning to the UK, and hope to address the failings of my current hi-fi set-up. My equipment consists of the following:

Linn Axis/Akito
Ortofon MC 3000
Audio Note AN-S6 step-up transformer
Audiolab 8000 C/P
Audio Concept Type I
(Snell type K derivatives from Denmark).

The cabling from pre to power amp is Chord, and the speakers are bi-wired with Audioquest type 4 and Linn K20.

The sound is sadly lacking in low end performance, generating an incoherent mush. This is modified depending on which way I bi-wire the speakers.

Using the Audioquest to the tweeters provides a more incisive, tangible (and to me) more exciting sound. However swapping wires over and using the K20 for the high end, and the Audioquest for the woofers gives a more convincing, involving, but fundamentally laid-back sound. Either way something is missing.

How to remedy this? Is the Axis/Akito too poor to resolve the low frequencies accurately or is it mis-matched with the MC3000 and the AN-S6?

I have to listen at low volume (9 o'clock on the dial), but feel that 4 or 5K's worth of kit should do better, even at relatively low volumes.

I used to listen primarily to hard rock, but have now moved to a lighter acoustic, female vocal (RLJ, Michelle Shocked etc.) repertoire as the equipment appears better suited to this genre. It is irritating (good as these artists are) to have my taste in music dictated by the equipment; hi-fi should disappear!

What I have at the moment is incapable of

handling powerful guitars and solid bass lines. It has no punch or conviction. It can however often deliver Martin Stephenson and Paco de Lucia with great clarity.

I am prepared to pay up to £1000 for a new front-end if required. What would you suggest? Or is this the wrong area to address? Could I get some speaker cable to clear up matters instead, and save my money?

Mark Evans
Bad Solen,
Germany.

Firstly, from your description, the Audioquest gives best results on the treble, and then when you swap it over to the bass you get a more involving and convincing sound. From this I would draw the conclusion that the Audioquest is better on the bass/mid and the treble than the K20 in this particular system. You should get rid of the K20 altogether and replace it with Audioquest for both runs.

We had a lot of discussion over your problem in the office and decided, from collective experience, that you are facing two major problems. The Snell Type K (we don't know the Audio Concept Type I but assume it is a good Snell copy) is light in the bass and sensitive too, so it does not need the power available from the Audiolab. We suspect that they are the source of your bass problems, since none of the other components are weak in this area. If you like the fine midrange of the Type K but want better bass, then perhaps you should audition an Audionote Type E, which is another Snell derivative, but a bigger one with stronger bass.

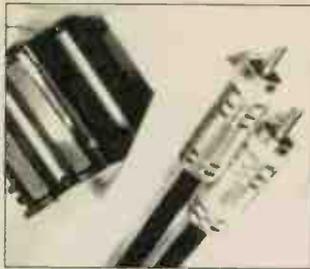
Howls of anguish arose at the thought of an Ortofon MC3000 being used with an Axis and Akito, for it demands a much better arm.

Continued on page 119....



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Echoes from the past

There are so many new brand names in the hi-fi world these days it's reassuring to find some old favourites re-appearing in the British market. One of these is SUGDEN, who have been doing well in export markets for many years but are now getting back into the U.K. market. These hand built units are superb to look at, particularly the '51' pre-power units, and produce some of the sweetest sounds around. Also worth an audition is their SDT-1 CD player.

Then there is ELECTRO COMPANET amplifiers which many of you may remember from the late 70's when their 25 watt amplifiers won rave reviews and a wide following. Their new range from this Norwegian company include phono stages to 250 watt dual mono balanced power amps plus a 20th anniversary limited edition pre-power combination with rare blue stone facia at £4,972; only 400 available world wide, so don't delay!

Another old favourite of our's was the American Dahlquist loudspeakers, which are now available here in an improved build standard as the ALON range produced by Carl Marchisotto-chief design engineer at Dahlquist for 15 years-of Acarian systems. The range starts at the ALON 1 for £1,300 and are now in stock with the ALON 2 at about £1,900 due shortly. Their top model, the Phalanx, costs a mere £25K, so we haven't got that yet!

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The minimum would be a Rega RB300, which is a poor man's SME. Ideally though, you should be using an SME Series IV, possibly on a Pink Triangle Export or similar.

Finally, we don't understand why you are using a step-up transformer with an Audiolab 8000C

Not willing to spend the earth on hardware, but wishing to get the most out of the upgrade, I am undecided whether to upgrade my preamp or my amp. Your review of the DPA 200S pre and Michell stereo Alecto come to mind. I listen mainly to classical and jazz and started in the early sixties with a Leak Stereo 30 (wanted the

price, and the option of monoblocking is easily implemented in the future if you wish. The 200S pre/power will bring about a much higher level of detail and a clearer and more sharply focused sound.

If you do upgrade the pre-amplifier you will need a phono head amp to play your record deck, but as a

temporary solution I'd use the Quad 34's phono input to feed the line input of the 200S pre. EAR's 834P is an excellent head amp for only around £300 that can be added at a later date.

I personally have not come across the TechniSat STD 5000 DSR. I presume that the TechniSat

and Shure M75EJ Type 2 cartridge which had been in his loft for seventeen years. After dusting it down I found it all to be in immaculate condition. I played it to start with through my older Arcam Delta 90 amp and a pair of cheapie single driver speakers and was impressed by the noises it made.

One day, with an hour or two to spare, I set the ERA up in front of my main system; the result was quite astounding: it is the nearest I have heard to a live concert performance and beats the Linn front end (now costing £1700) by a great margin. It lifts a lot more information from the magical black discs and is miles more musical, plus a real solid bass extension always lacking in the Linn. Now the LPI2 has now been relegated to a bedroom system (any offers?). Could anyone out there advise on any suitable modern cartridges (MM) to replace and improve on the Shure.

D. J. Martin
Wellingborough,
Northants.

I wish I'd placed a bet a few weeks ago when I was idly wondering what old turntable discovery would come next. I thought an ERA might turn up sooner or later. It was one of the classics of its time, but one that sidled off into the shadows. If you want to stick with the SME choices, alas, are very limited. In the ERA's and SME's heyday, cartridge manufacturers vied with each other to see whose would be the first to track at as near as dammit no grams at all. I remember them diminishing rapidly from 2g down to about 0.5g in at least one case. Now, we're on the way up again, and I expect to be faced with one that tracks at 4g, just like the Fifties, any day now. For the SME it has to be another Shure: the VST-V. Its little damping brush and

Continued on page 121....



DPA Digital's 200S, confident amplification.

preamp, since this has a good MC input stage. **NK**

NEW AMPS FOR OLD

I have been buying your excellent magazine for about a year now and thought it was about time I put the proverbial pen to paper.

I would like to upgrade my old system with your help. It consists of Quad 34 pre and 303 amp, front end being a Meridian 206 CD and Technics SL 110 DD turntable with Ortofon MC10 Super.

My speakers are Spondor SPIs. I added a Digital CD-Radio recently to my system, the quality being superb. I am surprised you haven't reviewed or recommended the TechniSat STD 5000 DSR to your readers. The live concerts transmitted via satellite have caused my current dissatisfaction. Something's missing from the sound.

Quad valve pre and power but couldn't afford them) and Garrard 401 whose rumble drove me nuts so I swapped it for a TD124.

The Technics SL110 armboard I have damped with Sorbothane sheets but it could be improved. SME used to supply an armboard but no longer do. Have you any ideas of who supplies/makes an armboard cut for an SME arm? **K. George**
Welwyn,
Herts.

The SPIs are very clean across the midband so you should look for an amplifier that is smooth and neutral for best results. When I reviewed the new SP2/3s recently I got superb results from DPA Digital's 200S pre/power amplifiers, which you suggest and together cost less than the Alecto alone. These are very well built, sound excellent for the

system uses a satellite dish to receive digital radio signals in similar fashion to satellite television - we'll investigate this and may do an article in the future.

As for the armboard, I'd try Technical & General on 0892 654534. They specialise in making spares for Garrard turntables, but should be able to make you up a blank SME armboard for your Technics. **DB**

VINTAGE VINYL

Until recently I have been listening to my main system, Linn LPI2/Ittok 2/K18/AMC CVT 3030 valve amp/Heybrook HB2Rs on stands via Linn K20 Cables. This setup has been giving my mainly classical collection a reasonable airing until a friend recently gave me a seventeen-year-old (plus) ERA French belt-drive turntable fitted with an SME3009 Improved arm

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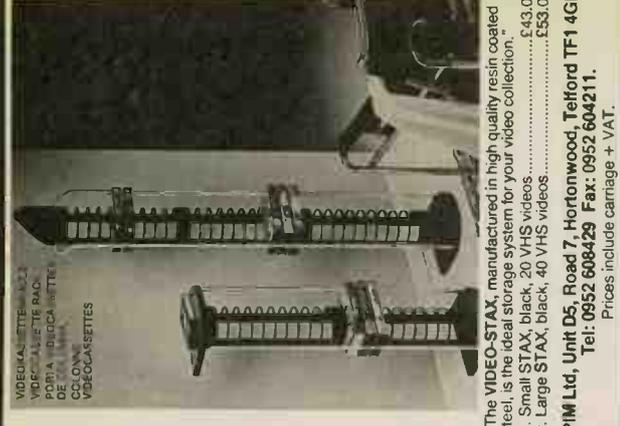
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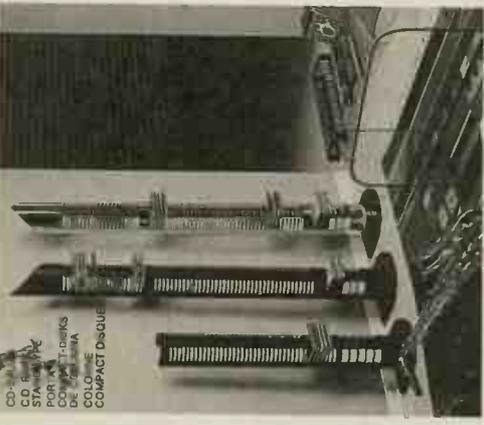
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.... Continued from page 119

recommended tracking force of 1-1.25g make it about the only real match for the arm there is left. Fortunately, it's also a very good cartridge. **EB**

The consensus here is that the K18 cartridge is most likely the source of your dissatisfaction. The ERA/SME combination is certainly a good one, but as Eric notes, the 3009 is best suited to super compliant cartridges. These days cartridges commonly track at 1.8gms and put more energy into the arm, under which circumstance you should find the Ittok performs well. The Linn may well need re-adjustment too, plus a service, then it should give excellent results with, say, a Sumiko Blue Point, or better. **NK**

HOOKED! AND LOOKING TO UPGRADE

Until about two years ago, I was quite happily listening to my Denon music system. It was a fateful day when I took my loudspeakers for repair to a 'proper' hi-fi shop and heard a pair of ESI 1s. I then started down the slippery slope; that is, an interest in hi-fi equipment.

After several improvements I now own a Meridian 200 transport (latest spec), Pink Triangle Ordinal DAC, an Arcam Delta 290 amplifier and Epos ESI 1s. Cables are Sonic Link Green, Audioquest Quartz and Ortofon bi-wire.

I now wish to upgrade to a pre/power combination for around £1500. This, hopefully will improve the positioning and separation of instruments and also improve the bass which I sometimes feel is a little indistinct, as though the notes are blurring into one.

As a future move, how

about an improvement in loudspeakers to the value of around £1000? Is a worthwhile improvement to be had over my Epos, perhaps improving bass, but retaining what I consider to be an excellent mid range and treble?

My music tastes are Sting, Clapton, Fleetwood Mac, Donald Fagen etc. I hope you can give me some advice, perhaps re-allocating the budget or even delving into the second hand market.

**T Cowdill
Birmingham.**

After looking at the various options available to you,

purchase. The NAPI80 retails for around £900 leaving £600 or so of your initial budget for a pre-amplifier.

As you only appear to use CD as a source, a line level pre-amplifier is all you need, in which case I'd recommend the Audio Synthesis Passion. This is an ultra high quality passive pre-amplifier so it has no gain, but fortunately the Ordinal DAC you are using has a higher than normal output level of 2.75 volts, giving plenty of headroom for driving the power amp. This passive pre-amplifier uses very high quality components

amplifier to match your Epos loudspeakers, the last thing you want to do is change them. As you enjoy the mid and treble of the Epos, I suggest you capitalise on this. Try pulling them a foot or so further out into the room. This will result in an even clearer, better-focused midband at the expense of bass weight. But don't worry because REL make a subwoofer that sounds superb, goes as low as 20Hz with plenty of kick behind it, doesn't cost an arm and a leg and is less intrusive than a large pair of floorstanders (few of which this side of £1000 can reproduce

anything like the quality of bass that the Strata does). The Strata costs £500 and is relatively simple to implement. It does take some time to carefully match the subwoofer to the main loudspeakers, but the effort is definitely worth it. **DB**

The Epos ESI 1 is known to be peculiarly room dependent and although the reviewing community, by and large, love them, and so do most owners it would seem, we do notice a residue of dissatisfaction with their bass quality in particular. It is often described as fat or bloated. As Dominic advises, pull them out into the room, use rigid open stands and make sure they are wired with good multi-strand cable. If this improves matters to your satisfaction, then go for the Naim upgrade.

If the bass remains unacceptable (and perhaps you already have them positioned properly) a Naim amplifier will improve the bass no end, but no amplifier could totally change the speaker's innate characteristics, so just in case the improvement is insufficient I would suggest you try and get a home demo first. **NK**



The much loved Epos ESI 1s.

including re-allocating your budget as you suggest, this is what I would consider to be the best option for you to follow. Naim amplifiers go extremely well with Epos loudspeakers and the new 60watt NAPI80 is superbly revealing with real punch behind it. So this I would recommend as your first

and should provide the cleanest signal path from the DAC to the power amp. The Passion is available built up for £495 or as a kit version for £275, so if you're a dab hand with a soldering iron you could save yourself a few pennies.

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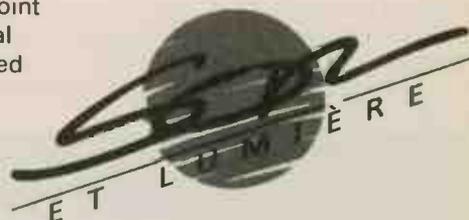
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MUSICAL FIDELITY A100 amplifier £240; NAD 4225 tuner £80 (£170); Pioneer PD8700 CD player (stable platter) £180 (£300); All in v.g.c. Tel: 0555 665051 (Lanark)

MUSICAL FIDELITY MC-2 MKII Speakers. Includes Heybrook HBS1 Stands. £150.00. Tel: 081 552 6616 (eves)

NAIM 135S £750 each. Linn Isobariks black with Linn Stands £650. Tel: 0269 591 333 evenings.

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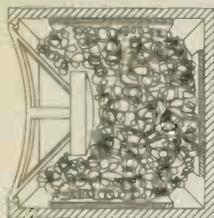
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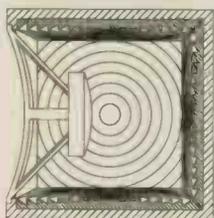
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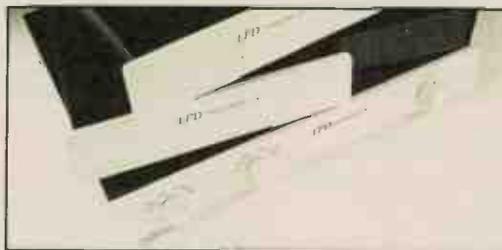
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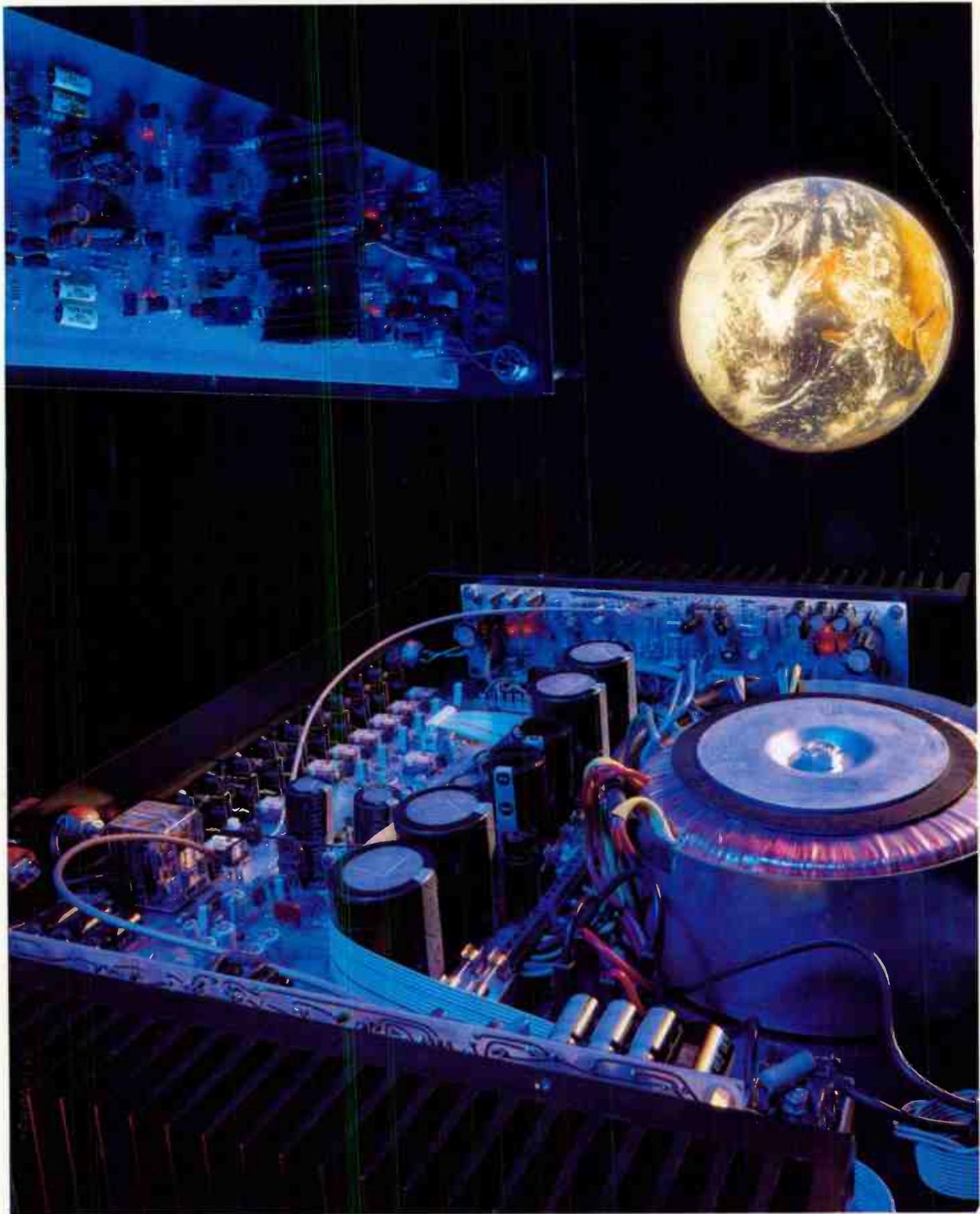
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