CHOOSEING A '£200' LOUDSPEAKER - GOODMANS MEZZO
CELESTION 7
TDL RTL 2
REGA KYTE
PIONEER S4-UK

LINN STARTER SYSTEM
DACULA CD CONVERTOR
JOHN SHEARNE
PHASE 2 AMPLIFIER

DIY SUPPLEMENT
No. 6
banded to this issue

'GARRARD 401 CELEBRATION'
ARM FROM SME

COMPETITION - WIN
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Naim Audio, Southampton Road, Salisbury SP1 2LN, England. Tel: (0722) 332266
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GOODMANS MEZZO
PIONEER S4-UK
REGA KYTE
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CASSETTE TAPE

SONY TC-K311
Here's something to warm the cockles of your heart this winter! The latest budget cassette deck from Sony.

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MORE SEE PAGE 5
Together, they've certainly made the critics take note.

“NAD 502 CD Player, 302 amplifier and 802 loudspeakers ... For all round performance we'd have to go for the NAD System ... Best facilities ... Best for Rock ... Best value for money ... Best sound quality overall ... you'd have to try hard to beat the NAD System ... 100% rating for value ... NAD has done it again with a superbly cost-effective set-up ... Detailed, involving sound, stunning value for money.” What Hi-Fi – March 1993
Once again the supplement issue is here, which is why the price of coffee has been rocketing as our experts labour night after night to drink the entire bean production of South America and also to bring you a fact-packed FREE supplement including all the following items:

A test of a large floorstanding Manhattan kit loudspeaker from Germany.

The Single-Ended Valve Amplifier. Part I of our latest amplifier, which has been stirring up interest since we first mentioned it in the last supplement and it's finally here!

Phono Head Amp. The first part of a design for an RIAA phono head amplifier designed to work as a stand alone unit or be added to the line level pre-amplifier.

Tweeter Review. Especially for DIY enthusiasts, and as the second part of our drive unit test - the first part was the midrange test in our last supplement - we review a selection of the most popular tweeters on the market. Not to mention the rest: news, letters, the latest information from the industry, source guide, World Audio Design kits, and much more!

MUSIC

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Okay, so it's winter, but why not remind yourself of summertime by entering our competition. Win yourself a bunch of Roses, or at least their latest pre and power amp combination, and a pair of sunshine-yellow Harman Kardon loudspeakers.

FEATURES

GARRARD 401 WITH SME IV 'CELEBRATION' ARM
Pop the corks, charge your glasses, and get ready for a celebration! SME's 'Celebration' version of their revered IV arm is here, specially for your revitalised '401s.

LINN SYSTEM
Dominic Baker has been snowed in by an avalanche of Linn hi-fi recently, auditioning a full system comprised of a Kand plan CD player, Karm pre-amp and LKI00 power amps, and Kelich loudspeakers.
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</tbody>
</table>

**End of Line and Ex-Demo Bargains**

| 2   | Rotel RB980           | Power Amp  | Ex-demo  | 450     | 350     |
| 2   | Musical Fidelity MXL  | Power-amp  | Ex-demo  | 500     | 250     |
| 1   | Musical Fidelity P173 | Pre-amp    | Bargain  | 800     | 400     |
| 2   | Rotel RTC950          | Pre-Amp/Tuner | Bargain | 420     | 300     |
|     |                       |            |           |         |         |
| 1   | Nakamichi CR7E        | C/deck     | Bargain  | 1995    | 1200    |
| 2   | Nakamichi DR3         | C/Deck     | Ex-demo  | 400     | 320     |
| 1   | Marantz DD82          | DCC        | Bargain  | 650     | 500     |
| 5   | Philips DCC900        | DCC        | Bargain  | 550     | 300     |
|     |                       |            |           |         |         |
| 3   | Systemdeck llx900 (no arm) T/table | Ex-demo | 230     | 160     |
| 25  | NAD 5120              | T/table    | Bargain  | 130     | 70      |
| 2   | Aura TU50             | Tuner      | Ex-demo  | 260     | 200     |
| 4   | NAD 4225              | Tuner      | Bargain  | 170     | 125     |

*All items carry manufacturer's warranty.*

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- AudioQuest
- Audio Technica
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- Beyer Dynamic
- Bose
- Boston
- Carletalk
- Canon
- Castile
- Celestion
- Cephin
- Creek
- Cyrus
- Denon
- Dual
- Goldring
- Harman Kardon
- Hecho
- Heyrbrook
- Infinity
- Jamar
- JBL
- JPW
- JVC
- KEF
- Kenwood
- Kodak (photo-cd)
- Lexicon
- Luxman
- Marantz
- Maxell
- Michell
- MicromeGa
- Mission
- Mitsubishi
- Monitor Audio
- Monster Cable
- MonsterStrict
- NAD
- Nakamichi
- Ortofon
- Panasonic
- Philips
- Pink Triangle
- Pioneer
- Project Turntables
- Proton
- Quad
- Revolver
- Revox
- Rogers
- Roksan
- Rotel
- Ruark
- Sansui
- Scotch/3M
- Sennheiser
- Sherwood
- Shure
- SME
- Sony
- SoundStyle
- Shenon
- STAX
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If you crave musical truth, contact DPA so we can help.

DPA Digital Ltd., Unit 7, Willowbrook Tech, Units, Crickhowell Rd., St. Mellons, Cardiff CF3 0EL Tel (0222) 795621 Fax (0222) 794267
BEARD TRIM
Bill Beard’s new 50 watt per channel amplifier is now available. The BB101 is a line-level valve integrated amplifier with a separate power supply unit, costing £1600 plus VAT. The pre-amp stage uses six ECC82 valves and two ECC81s. The output stage uses twelve EL84s.

Bill Beard Ltd. 98a Oaklands Grove, London W12 0JB. Tel: 081 749 4258

KEF COMEDIANS!
Once again KEF Loudspeakers are in our News pages, as they release three new speakers employing KEF’s Uni-Q system. The £199 Q10 and the £349 Q30 are both two-way speakers, bookshelf and floorstanding models respectively, and the £499 Q50 is a three-way floor stander. I wonder if there’s a Spike Milligan ‘Q Series’ fan in their marketing department?

KEF have also negotiated a license from the BBC to market a version of the popular BBC LS3/5A mini monitor loudspeaker, price to be announced.

KEF Audio (UK) Ltd. Eccleston Road, Tovil, Maidstone, Kent ME15 6QP. Tel: 0622 750653.

SUGDEN SOCKS 'EM
Those busy Yorkshiremen at J.E. Sugden & Co. have announced their latest CD player, the Optima, which will shortly be joined by a matching line integrated amplifier, and other products, to form Sugden’s budget line of products.

The new CD player employs the same transport and laser mechanisms as their more expensive transports, and uses 16 bit 4x oversampling conversion circuitry. It is expected to retail at around £600, and will be available in November.

J. E. Sugden & Co. Ltd. Valley Works, Station Lane, Heckmondwyke, West Yorkshire, WF16 0NF. Tel: 0924 404088.
Experience just how good your LPs and CDs really can sound by listening to them through one of our hi-fi systems. From £50,000 to £500 we put together the finest hi-fi to suit every budget.

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Workshop 30, Royal Victoria Patriotic Building, Fitzhugh Grove, Wandsworth Common, London SW18 081 875 9593
SURPRISINGLY SOLID
Well known for their valve amplifiers, Audio Innovations have brought out a new 35 watt per channel amplifier called the Alto. If that news doesn’t surprise you, the fact that it’s a solid-state integrated should, and the looks of it might turn a few heads, too. The Alto retails for £299, so the price shouldn’t shock your bank manager too much.

Audio Innovations, Audio Components Ltd. Albany Court, Albany Road, Granby Industrial Estate, Weymouth, Dorset DT4 9TH. Tel: 0305 761017

TDK SELL CELLS
Tape giant TDK have launched a range of batteries under the name TDK Super Alkaline, which apparently is a play on the name of their renowned SA (Super Avilyn) tapes.

According to TDK, these batteries are 100% mercury and cadmium free and come in recyclable packaging. TDK give slightly less prominence to the fact that their batteries last 20 times longer than ‘a conventional alkaline battery’, which certainly sounds like a good thing.

TDK UK Ltd, TDK House, 5-7 Queensway, Redhill, Surrey RH1 1YB. Tel: 0737 773773

BASF’S GREEN BIAS
German company BASF have been running a line of 100% recyclable video tapes since the beginning of the year, and have now launched a similar range of chrome cassettes called Maxima, Super and Extra. In order to recycle these cassettes, they have opened a new pilot plant at Willstaedt, Germany, and anticipate that 30,000 tapes will be recycled in the coming year.

BASF have also launched a 60 minute recordable MinIDisc to complement their DCC range. It retails at around DM25, known as ‘a little over £10’ to its British friends.

BASF plc. BASF House, 151 Wembley Park Drive, Wembley, Middx HA9 8JG. Tel: 081 908 3188

ASPECT 1.1
Jordan Watts Acoustics were recently bought by cabinet-maker Roy Houlder, and their first new loudspeaker since then has just been launched. Retailing from £1695 for a basic black satin finish, the Jordan Watts Aspect 1.1 is a 100 watt, two-way 8 ohm loudspeaker, employing a 2 inch ferrofluid-cooled foil cone tweeter and a 5 inch foil bass/midrange unit.

Jordan Watts Acoustics Ltd, Cyntara Place, 201 Mare Street, London E8 3QE. Tel: 081 985 1646

SENSE OF DIRECTION
Richard Allan Audio Ltd are now marketing all their loudspeakers direct to the public rather than through retailers. The advantage of this is that they can now offer reduced prices on their products, and have a tighter rein on customer relations. As a result they are now offering free delivery, free home audition, three year warranty, and a helpline to answer your queries, as well as a ‘full refund if not highly delighted’. What more could you want?

Richard Allan Audio Ltd. Bradford Road, Gomersal, Cleckheaton, West Yorkshire BD19 4AZ. Tel: 0274 872442

DANISH WITHOUT THE SIZZLE
Despite the pair of E88CC valves tucked away inside Danish-based Copland’s new CSA14 hybrid integrated amplifier, you probably won’t get enough heat out of it to fry your Danish bacon in the mornings like you can with all-valve models. The hybrid design employs transistors not only to keep the temperature down but to deliver a ‘very conservatively rated’ 60 watts per channel.

The price of the CSA14 is a mere £999.

Absolute Sounds, 58 Durham Road, London SW20 0DE. Tel: 081 947 5047

NOTTINGHAM ANALOGUE STUDIO
Are hoping to arrange a vinyl-only hi-fi show in the Midlands, which should take place in the coming spring. They hope to run the whole gamut of vinyl products available, from ‘classic’ equipment to the latest innovations. Watch this space for details.

Nottingham Analogue Studio, 128 Cordy Lane, Underwood, Nottingham NG16 5FD. Tel: 0773 762947.
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The Uni-Q listening benefit

KEF has pioneered the coincident source drive unit, which unlike conventional speakers, places the tweeter in the middle of the woofer cone in such a way that the acoustic centres coincide. The directivity or "Q" of the woofer and tweeter is matched at the critical crossover point - hence the name 'Uni-Q' - and sound is reproduced with astonishingly accurate tonal balance throughout the room. This design gives the listener two sonic benefits; near-perfect sound wherever you sit, and the best possible sound in your listening environment.

Tel: 0622 672261

KEF and Uni-Q are registered trade marks. Uni-Q is protected under GB Patent 2 236929 - worldwide patents pending.

World Radio History
FASTER LITTLE BITS
DPA, denizens of the digital domain, have had such a good first year that they have had to install a new Dynapert SMD (surface mount devices) 'pick and place' machine. It automatically places the miniature pin-head sized components on the circuit board and is capable of constructing the main circuits for their Little Bit in under six minutes. That's faster chips than my local takeaway!

DPA Digital Ltd, Units 7&8, Willowbrook Lab. Units, Crickhowell Road, St. Mellons, Cardiff CF3 0EF. Tel: 0222 795621

TREATS FOR TINY TWEAKERS
Are you worried that the next generation of hi-fi buffs will believe that all music comes on little silver discs? Then why not show them this fully working, miniature, old-fashioned homed phonograph (bet you don't remember those!), which requires only scissors and glue for construction. It's suitable for ten year olds and upwards to build, to teach them "how vibration is turned into sound". So, for just £9.99 +p&p you can get the youngsters in your house into the groove this Christmas.

Einstein's (Mail Order), Harrington Dock, Liverpool L70 1AX. Tel: 051 700 8202

LIVE WIRE
So many people went to "Live '93" - the organisers quote 140,000 visitors - that next year it'll be at the larger Earl's Court venue, on the 20th through to the 25th September 1994. The organisers are predicting 200,000 visitors, so next year, bring your granny and it may come true.

WHARFEDALE LIVES!
As you read this, Wharfedale should be delivering their new "Modus Vivendi" ('Way of life', or do they mean 'Lifestyle?') range of speakers to a showroom near you. These 'speakers are designed for both hi-fi and home theatre usage, starting with the £60 'Cube', which is a single 'speaker unit, and moving up to the £100 'Micro', £130 'Mini' and £150 'Monitor' two-way 'speakers, and including the 'Centre' three-way for £100 and the 'Active Bass' sub-woofer at £400.

One of the more novel aspects of the range is that the tweeters, where used, are designed to be rotated to fire into the main listening area, regardless of the way the body of the 'speaker is facing. On the 'Mini' and 'Monitor' 'speakers, the midrange units are designed to do likewise.

Wharfedale Loudspeakers Ltd. Crossgates, Leeds LS15 8AL. Tel: 0532 601222.

ONKYO ON THE SHELF
After a four-year hiatus, the Onkyo name has returned to Britain, as of 1st November. Their products will be distributed by NAD Marketing Ltd, a subsidiary of NAD Electronics.

NAD Electronics, Adastra House, 401-405 Netter Street, London N3 1QG Tel: 081 343 3240

MARBLE-OUIS!
What's round, made of marble, and has a frequency response of 100Hz-22kHz? It's not a joke, it's the Audiophonics CASO loudspeaker, which uses a single 50mm aluminium driver (so there's no cross-over induced phase errors) in a 200mm (maximum) diameter marble casing, and costs £1595. The FBX150 dedicated subwoofer is also available to extend the bass to below 40Hz.

Audiophonics, 21 The Crest, Berrylands, Surbiton, Surrey KT5 8JZ Tel: 081 390 1354

REGA CORRECTION
The price given in our October issue group test of amplifiers for the Rega Elex was unfortunately incorrect; it should have read £359, instead of £475. The Lord High Executioner has been called in to investigate.
Ortofon is famed the world over for the tracking capability of its cartridges. Cartridges which will breathe new life into a cherished LP collection, divulging detail as never before.

The cartridge is always the key factor in the reproduction of music from records and Ortofon has dedicated nearly 50 years to the manufacture of the finest pick-ups possible. Enjoying constant critical acclaim along the way.

So if you want to bring more out of your records than ever imagined, an Ortofon Cartridge will have you hot on the scent.

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J.E. SUGDEN & CO LTD, VALLEY WORKS, STATION LANE,

HECKMONDWIKE, WEST YORKSHIRE WF18 0NF TEL: 0924 404088
When you invest in good quality hi-fi equipment, why skimp on the cable? Especially now that Ortofon can offer 3 types of top-quality cable for under £10.

Each cable is made up of very fine core copper strands rated at 6-Nines (that's a copper purity of 99.9999% — it doesn't come much better), is flat and flexible for easy installation and features a 'lock-rack' for panel-pin fixing.

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>SPK 100</td>
<td>Twin-core white cable, each core with 130 copper strands (total 260 strands).</td>
</tr>
<tr>
<td>SPK 200</td>
<td>Triple-core grey cable for bi-wiring with twin-core treble (260 strands) and 3-core bass (390 strands).</td>
</tr>
<tr>
<td>SPK 300</td>
<td>7-core blue cable having 13 strands per core (each strand laminated). Requires soldering.</td>
</tr>
</tbody>
</table>

You'd better hound us for the name of your nearest stockist.

Ortofon (UK) Limited, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG. Tel: 0753 889949.

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Monarchy Audio M 22 A digital to analogue convertor
From £995

"The Monarchy Model 22 thoroughly trounces the PS Audio Ultralink and the Audio Research DAC1 which cost double and triple the amount of the Monarchy".

Paul Cervantes
The Audio Observatory
November 1992

Clements Spatial Image Loudspeakers Model Si 300
From £645

"All of our panelists thought we were listening to Loudspeakers in the $1,200 to $1,500 range... so far the 300's are the best we have come across in their price range. A 'must listen for all those who take their music seriously'"

The Inner Ear Report
Summer 1992

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WOLLATON AUDIO, NOTTINGHAM TELEPHONE / FAX: (0602) 284147
Standing tall on his soap-box, Simon Cooke airs his opinions about five 'speakers costing "around £200".

What should you expect from £200 loudspeakers? An improvement over your old speakers would no doubt be a good idea, and you will, as a very general rule, find that £200 gives you good build quality and a bigger box than starter models that typically cost up to £120. Bigger boxes should mean deeper bass, but not always. They can give designers enough leeway to hang themselves, deeper bass becoming a headache-inducing boom if the sums aren't done properly.

On this same subject, deeper bass may also introduce room matching problems. Budget minis won't go down to 60Hz; a big box should. This can set off unavoidable room resonances, especially in square rooms, because 40Hz-70Hz is the region where typical living rooms commonly act as resonant chambers along their length and width.

You are also paying for better design and component quality, and this should lead you to expect a cleaner sound. Some manufacturers have noted wryly, but not inaccurately, that advances in loudspeaker sound quality over the years have really come about mainly because of improvements in drive unit design and technology. The boxes themselves, which affect mainly low frequency behaviour, haven't changed much.

The vital midband, so important in speech and vocal reproduction, is a function of drive performance, rather than the box. This raises an intriguing trade-off: spend money on the box and the drive unit must be cheap, raising the likelihood of poor vocal reproduction. Spend money on the drive unit and the box must be made small, restricting bass performance. As a rough guide, the bigger the bass/midrange unit is, the better will be its bass, but the poorer its midrange.

As always, you can't guarantee that any price increase will buy you a better speaker, so be prepared to shop around a little. We are constantly surprised at how poor some expensive speakers are, and how good some cheap ones prove to be. So don't view the models in this group as poor cousins to their more expensive brethren. We found a surprise amongst them.
The Pioneers are chunky, macho-looking black speakers. The chamfered front edges and push-on grille make them look suspiciously like an older model of B&W speaker, but take the grille off, and you realize that it's a case of convergent evolution rather than plagiarism.

They use two quality-looking drive units, the tweeter being a large fabric dome and the bass unit a plastic 4-inch device, reflex loaded by a gently flared port. The rear panel houses two chunky, gold-plated binding posts, which interestingly have gold-plated finger nuts rather than the more usual plastic ones, a lavish touch for a budget speaker. It is this kind of attention to detail that makes the Pioneers look good and suggests a high perceived value.

The finish of the cabinets themselves is good, although they do not feel quite as solid as some of the other speakers in this test.

SOUND QUALITY

The Pioneer loudspeakers open with an easy, reasonable sound, but listening to them for any protracted length of time shows up some peculiar foibles.

The bass was full but not forceful. This helped to fill out the soundstage, and provide a depth to the sound which some others lacked, but it did have a tendency to spill out and swamp finier detail. This makes the Pioneers rather less suitable for jazz, folk, rock or dance music, where beat takes precedence over rhythm - rather than classical where bass presence is more appropriate. The bass could be cut by the simple expedient of plugging the ports with material, but it looks unsightly and diminishes the speaker's character somewhat. The midrange was pretty good lower down, sounding full and warm, but it was a little too soft for my liking. Further up, it gets even softer and pulls back into the box, suppressing vocals and strings, leaving only a little sparkle left by the tweeter. This is not so noticeable on single instruments, but where, for instance, flute is played over a low drum line, the higher pitches have a tendency to be lost under the lower. This is a facet which should be noted by anybody who listens to choral music, such as Gregorian chant, where the higher vocals may well suffer.

The treble was clean but lacking real differentiation of character, and it had a nasty tendency to splash on transients, so rhythmic cymbals could become tiresome as they flew away from the stage without restraint. This was more a problem with the loss of tones in the upper midband than with the treble itself, and strings playing in the upper register stayed clear and nicely toned. On Alan Stivell's "Renaissance of the Celtic Harp" (Rounder CD 3067), the tones of the harp swung easily all the way to the top of the range without distorting, although without the lucidity of some speakers in this price bracket.

Lucidity did seem to be a problem of detail, as these aren't speakers which resolve information very well. Stivell's fingers never touched the harp strings, according to these speakers, and almost all the music I played suffered the same loss of detail. Staging and imagery were adequate, but not exemplary, due to the lack of detailed information. This led to a certain fluidity in the positioning of instruments.

CONCLUSION

The S4-UKs are adequate all-rounders with quite a big, soft, and easy going sound. They are worth considering by those who don't really want to be challenged by their music - or excited.

MEASURED PERFORMANCE

Compared to the standards set by current British loudspeakers, the Pioneer S4-UKs are rather lumpy in their response. A strong (-5dB) dip between 2kHz and 3kHz is almost definitely caused by inadequate crossover engineering and could easily have been avoided with simple measurement equipment. Companies such as KEF and Celestion have been engineering flatter responses for the last 20 years.

I would expect them to have a forward upper midrange and an obvious upper treble with little in-between. This will draw attention to the two separate drive units and be heard as poor integration between the two, exaggerating the difference in character between a plastic cone and a fabric dome.

Sensitivity for a nominal 1W input measured at 1m was 87dB, a respectable figure a couple of dBs above average. Overall impedance was 9.3 ohms and the impedance curve indicates a reactive load. This all adds up to an easy load for budget transistor amplifiers, such as those found in midi systems.

HI-FI WORLD DECEMBER 1993
TDL RTL2 for £249.99

The TDL RTL2 loudspeaker is a small two-way floorstanding model which employs a mini-transmission line behind the bass/midrange unit to load it at low frequencies, enhancing bass reproduction. The line vents into the room at the bottom of the cabinet, to get the benefit of radiation from a 'corner' as it were, and to act partially as a reflex port. Mini-lines like the TDL, normally described as hybrids, are little understood and often don't work too well. However, TDL have doggedly stuck with this scheme for twenty years and know best how to exploit it.

The TDLs were well built and finished, with a solid and reassuring feel to them. They are a two-way design, and the four gold-plated binding posts on the rear panel show that they have been designed to be bi-wireable, if desired.

**SOUND QUALITY**

These 'speakers really take a can-opener to the soundstage, opening it right up. After some of the other 'speakers I heard whilst auditioning for this group test, it came as a real breath of fresh air as the TDLs unfolded the ambience of the recording right across the room.

Bass frequencies, as you'd expect from a floorstanding 'speaker, go unusually low, without the 'woof and waffle' of other box loudspeakers, so the bass sounds truly tectonic, rather than just bloated. This lends a spaciousness and immense proportion to the bottom end, and the general tone was soft, mellow, and reasonably uncoloured. In the upper midrange, however, there was some forwardness that added a little spitch to vocals. Tracey Chapman displaying a rare sharpness in this respect, upon her normally smooth, deep tones. The treble frequencies seem well represented too; there was little sense of loss anywhere across the audio band in fact, except perhaps a slight loss in the lower midrange, which took a little body out of voices. The ethereally enraptured tone of Jan Garbarek on 'Chorus', or the sad, mellow intro to Hamilton's 'Chelsea Bridge' came over at the emotional level, as well as the merely auditory.

The TDLs had a respectable capacity for resolution, and although not quite as overt in their portrayal of, for instance, Alan Stivell's fingers on the harp strings as other 'speakers, they translated other nuances, such as the sound of the strings settling after being struck with a subtlety and finesse which puts many other 'speakers to shame.

Staging and imagery were probably the best of the batch, with the instruments pinned out within the spacious framework of the bass and midrange frequencies, although instruments which rely more on the upper frequencies, such as flute and harp, had a tendency to be a little more fluid in their positioning.

**CONCLUSION**

Overall, these 'speakers gave a natural-sounding rendition of music, and it is only when you hear something like this that you realize what is missing from most other loudspeakers: bass. Not the flap and woof of boxes attempting to produce frequencies lower than their construction rightly allows, but a big, vibrant solidity which reproduces the spaciousness of a large, open, hall filled with the sound of ongoing performance and audience appreciation.

**MEASURED PERFORMANCE**

Our measurement of the RTL2s shows shelf reduction of bass, but in use the floor reinforces low frequency output, introducing compensation. However, a dip around 630Hz is deep enough to be beyond complete compensation and in use it does remove some body from vocalists. Bass extends down to 50Hz, low for a small loudspeaker. Measurement suggests that these speakers will reproduce deep bass, with some possible emphasis around 60Hz.

Further up the frequency scale there is a hump, starting at 1kHz and only falling back down above 8kHz. This will give a forward and open upper mid and treble, perhaps a little too forward for some tastes. The hump peaks slightly at 2kHz and listening tests did confirm this treble emphasis in their portrayal of, for instance, Alan Stivell's fingers on the harp strings as other 'speakers, they translated other nuances, such as the sound of the strings settling after being struck with a subtlety and finesse which puts many other 'speakers to shame.

The RTL2s are quite sensitive at 87.5dB which, in conjunction with extended bass, makes them quite different from the norm at this price level. The impedance curve, although a little lumpy, is reasonably flat and averages out to an overall figure of 8. Because of this, they will be fairly easy to drive, but because of their extended bass a good 30W will make sure that grip is retained. DB

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Goodmans have become a name synonymous with British loudspeaker manufacture, and they have generally concentrated on the budget end of the market historically offering very good value speakers, well engineered but inexpensive.

Their Mezzo loudspeaker is a two-way design, with a large rear port. It is meant for stand mounting, reasonably close to a rear wall. The rear panel sports two nickel-plated binding posts which face downwards, making it easy for the plugs to slide out.

The box itself feels lightweight and a bit flimsy compared with most 'speakers, but the finish is up to the expected standard at this price. Knocking the side of the box discloses its hollow-sounding 'ringing' nature, and better internal bracing might solve a few of the sonic problems with this 'speaker.

**SOUND QUALITY**

The first impression of the Mezzos was that they had a noticeably warm, fullsome sound, with upper register notes, especially higher wood percussion, having a tendency to sound soft and never quite make it out of the box. The conga drum on Tom Watt's 'Jockey full of bourbon' (Rain Dogs IMCD 49) exhibited this trait strongly, and where the guitar is usually the most forward instrument on this track, the upper drum line was most prominent like a big speaker, unrestrained. Further up the audio band, some congestion creeps in on vocals, as well as a boxy warmth and a little wooden colouration too, but these effects weren't so bad as to be intolerable.

Unlike so many metal dome tweetered speakers, the Mezzos had an unintrusive treble quality. Where tambourine has an aggressive sting to it on the opening of Steve Earl's 'Emerald's Hollywood', it became just a tame tinkle through the Mezzo's. They pour oil onto high frequency waves, having a calming influence, whilst just avoiding any accusation of being overtly dull. But their laid back treble could play up at times. On Scott Hamilton's 'Groove Yard' (Race Point CCD-4492) the cymbals splashed in the right hand 'speaker, well away from the soft-sounding drum kit. However, later in the set they drifted back towards the drums. High end transients such as cymbals were in an unusual relation to the bass, at least against the performance offered by competitors, but the Mezzos don't sound sharp or offensive.

Resolution of detail was mediocre, as expected from the measured response. For example, Scott Hamilton's accustomed breathy tone on tenor sax disappeared, and the feel of much of his work changed. The Goodmans were 'enclosed' speakers, with the soundstage trapped inside the boxes.

**CONCLUSION**

The Goodmans didn't make a big impression on me for their insight or tactile imagery, but that's not what they're about. These speakers deliver a big, easy sound, with strong bass lines and a soft warm and boxy sound. They have the useful benefit of being sensitive, easy to drive with a lowish powered amplifier and yet powerful sounding in their presentation.

**MEASURED PERFORMANCE**

The Goodmans Mezzos look like a scaled down version of the Magnums reviewed in our September '93 issue. Unfortunately, Goodmans also appear to have scaled down the cabinet rigidity along with the external dimensions and a quick rap of the knuckles confirmed my fears; these speakers are going to sound boxy.

Their frequency response is quite even, although there is a definite downward trend above 1.6kHz which will give them a soft, even dull, balance. Bass is acceptable for their size, but the speakers will benefit from near wall placement. There is a small dip around 2.5-3kHz, probably due to the crossover, above which the treble never makes it back up to the level of the mid and bass. A slightly more sensitive tweeter appears to be needed, but the Mezzos should not display sharp or forward treble.

Sensitivity is high at 88.5dB so the Mezzos will need little power to go loud. Their overall impedance of 7.5 will give amplifiers an easy time and the impedance curve isn't too severe, so around 20watts or so from an amplifier should be plenty.
The Rega Kytes are tiny two-way 'speakers with a forward-firing corner mounted reflex port. They feel solid and well-made, although the finish looks a little tacky, which is not a bad thing if the money has been wisely spent elsewhere.

For the treble a small fabric dome tweeter has been used, which should give a smooth sound free from sharpness. The bass/mid driver is a rather unsophisticated looking small paper affair with a fixed pole piece. Judging by the size of this unit they are going to be limited in the bass, but they have been designed to be placed hard up against a rear wall, which should balance things out a little.

Around the back are a single pair of nickel plated binding posts which conveniently take large diameter bare wire as well as 4mm banana plugs. A simple foam grille is supplied which sticks to the front by means of coarse velcro-type pads, instead of the usual wood-framed fabric grille. In practice I found that this was best left in place to soften the treble slightly.

SOUND QUALITY

The Kytes are appropriately named, as the sound from them is light and soars out of the 'speakers. They open with an interesting and lively portrayal of the music, although they don't have the feel of a rockin' box that can be driven hard.

There was little bass present in the performance, unless the 'speakers are placed hard against a rear wall. This bought up the bass just enough. Place the boxes against a wall and bagpipes, for instance, lost their whistling quality and became open and woody, with a wealth of detail drawn from the mix. The bass available from these tiny boxes was enough to give a good smack on the higher drums, but big performances with lots of bass, such as heavy orchestral or driving rock tracks, aren't in the Kyte's repertoire.

In the midband, the Kytes are tonally clean and crisp. Towards the top end they could be a little shrill, but not so much as to impinge upon the music to any great degree. What was quite noticeable, however, was that, in the midrange, simple arrangements of music sounded as though they were being heard through a tube or horn of some kind. This is possibly due to cone resonance as the boxes themselves are very stiff.

The treble was good, with just a little coarseness on Jan Garbarek's saxophone break on Chorus (ECM 1288). Garbarek's lines failed to slice through the air, but the occasionally grainy sound gave notes an emotive quality lacking on other 'speakers. The Kytes gave an excellent performance, especially with saxophone and brass arrangements.

The speed of these 'speakers is quite incredible, breathless rather than breathtaking. Hyperactive, almost, but not disconcertingly so.

The Kytes resolved impressive amounts of detail from the source, but had a tendency to muddle it in the hurry with which they seemed to want to play.

Staging, especially the positioning of higher-toned instruments, was good, the Kytes nailing the strings of Alan Stivell's harp firmly across the soundstage. Lower tones, however, sank into an irrepressible wash of bass, as the 'speakers struggled to reach down to them.

CONCLUSION

The Kytes did sterling service, portraying music with such feeling that it leaves many other 'speakers standing. However, the dog-like hurry with which they cover some music can a little trying and the bass is light even against a wall. These are 'speakers for anybody wanting to balance a slow, heavy system, or who requires lightness and detail rather than big sound and ambiance.

MEASURED PERFORMANCE

The Rega Kytes use a small (4inch) paper cone bass/mid unit and, as would be expected, both power handling and bass response are compromised. When measuring sensitivity using a nominal watt of pink noise they sounded decidedly unhappy, the cones flapping precariously close to the end stops.

There are benefits of using this small driver however. It is very light, giving a highish 86.5dB sensitivity figure and a fast, detailed sound. The Kytes are easy to drive, having a high overall impedance of 10.5 which will not draw excessive current from the amplifier, so even given its wild impedance curve 20 watts should be fine.

Ignoring the lack of deep bass, which will be partly rescued by mounting them against a rear wall as the designer intended, the Kytes' frequency response was extremely good, in fact the best in the group. The majority of the response sits comfortably between +/-1dB limits, better than nearly all commercial designs, whatever the price. DB
The Sevens are the fourth up Celestion's range, retailing at £219.

They are two-way 'speakers, like all the others in this group test, ported in the rear panel and employing a light fibre bass/midrange driver and a titanium dome tweeter.

The rear panel carries the port and two gold-plated 4mm binding posts with gold-plated finger nuts, similar to the Pioneers. One interesting point about the port is that it is moulded as part of the inset panel for the binding posts and performs an unusual right angle twist so that the port tube rises vertically inside the cabinet. This apparently allows better coupling of the port with the standing waves inside the box, an area where Celestion have been indulging in some research.

SOUND QUALITY

The Celestion's are quite easy loudspeakers to listen to, having a light and easy going sound to them. Extended listening however, leaves just a little to be desired.

The bass frequencies were well represented, although they had a tendency to sound accentuated lower down, making for a heavy and bloated sound. There was obvious boxiness too. Fast drum lines caused a few problems for the Celestions, as they struggled to make sense of the rhythm occasionally.

guitar:

Treble frequencies were generally sweet and soft, although not overly so. There were two points of note here; firstly that the treble seemed, like the bass, to have difficulty in keeping up with the very fastest pieces, and, secondly, that they occasionally splashed on transients such as triangles, although this did not happen often.

Imagery was quite poor, since the Celestions had some difficulty in resolving detail, and that caused quite a few problems in both this department and with the soundstaging, which remained resolutely within the boxes, rarely stringing itself between them, and never opening out into a believable picture, even on small arrangements.

Ranked violins on orchestral works suffered compression, making them sound thin and sharp, but apart from that the tonality of the performance was quite good. The Celestions did, however, have a problem with sudden bursts of brass, where the cone had a nasty tendency to shudder and flap when the brass section cut in. This occurred even at low volume levels, and could worry those who like their orchestral arrangements loud, in which case these 'speakers should be approached with caution.

CONCLUSION

The Celestions were 'easy listening' 'speakers which were, all in all, competent. Their sound was quite unchallenging, and only the lack of real detail in the image and the presence of...
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CONCLUSION

I'm feeling bold at the moment, so I hope you don't mind if I jump straight in and get the rankings over and done with.

First prize has to go to the TDLs on all counts. They have the build quality, the finish, a more than acceptable level of sound quality, and a big, hearty, open sound that really does set them apart. These are speakers for people who want the concert in their living room, but beware, they give 'real' bass, and not the cotton-wool stuff often associated with box loudspeakers, so check the soundness of your foundations before you buy. That said, they can be delicate 'speakers when of your foundations before you buy. That said, they can be delicate 'speakers when required, and capable of portraying all the emotion in the recording. One thing's for certain, that between the bass and the emotion, these 'speakers are sure to move you!

The Rega Kytes have to come next, playing with great delicacy and musicality, but without the awe-inspiring presence of the TDLs. The Kytes are delicate critters in two senses, both in portraying the music with a deft and sure touch, and also in that they do not like to be driven hard. They overload very easily, and are not 'speakers for those who want a powerful sound. They'll happily fill a modest room though, and seem to suit jazz music best, but without the awe-inspiring presence. This is at odds with a natural tendency in hi-fi circles to judge speakers on the amount of detail they convey, a property reinforced by upper midband emphasis, which gives a bright sound.

So should loudspeakers have a flat response and be accurate? Reasonably so, but flat response is a prerequisite, not an end in itself. They certainly should not be as inaccurate as some of those measured here, whose errors were subjectively obvious and pervasive.

The TDLs were impressive. They have the sort of real deep bass so many people demand, yet which rarely exists. They were also clear and detailed. However, I was put off by their brightness, plus a lack of body to vocals. With just a little re-balancing though, there's no doubt that the TDLs really could wrap up this part of the speaker market all on their own. I vote them number one - with reservations.

Second place I award to the Goodmans Mezzos. They're no more unbalanced than many hi-fi loudspeakers, but the nature of their unbalance will not recommend them to the hi-fi community at large. If you want a big, easy sound with strong bass, but a not-too-inaccurate general presentation, the Mezzos may well suit.

Third come the Celestions. With better driver sensitivity matching and a little more damping they'd be first. I vote them number one - with reservations.

The Rega Kytes were, for me, too bright and thin, and the Pioneer loudspeakers too dull to appeal. Their job, as well and cheaper, and Goodmans just happen to make them too! The Maxims are very similar to the Mezzos in performance, and although the Mezzo has more class, the difference in price seems quite hard to justify.

Noel says -
What appeals in the sound of a loudspeaker is very personal. Whilst there should be broad agreement on how a loudspeaker sounds, whether that sound rings any bells with a listener can be quite a different matter. Musical tastes, prior experience and partnering equipment exert a big influence on any final choice. So can personal sensitivities - and it is here that my choices in this group diverge from Simons.

I get fatigued quickly by bright speakers - especially with poor CDs that serve to compound the problem. This is at odds with a natural tendency in hi-fi circles to judge speakers on the amount of detail they convey, a property manufacturers should put a little more into product measurement and assessment - but then, that applies to others in this report. All five speakers could easily, with little extra effort, have been a lot better.
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A RHAPSODY IN BLUE

Ol' man Eric Braithwaite's got 'em hi fi reviewin' blues bad, but he cheers up when John Shearne's Phase 2 amplifier starts to show its colours.

A blue marble-effect fascia and a blue LED glowing on switch-on must have had a subconscious effect. The first recording that went through John Shearne's Phase 2 line-level integrated amplifier once it was unpacked and wired up was John Lee Hooker...

Perhaps there was something subliminal in the designer's mind, too, because this £495 amplifier suited the Blues like a blue lamp belongs to a police station. Hooker's voice on 'Bad Like Jesse James' was, well, arresting. That groan he gives at the end sounded so heartfelt - and the thwack on the guitar so sharp - it was a shock to the solar plexus.

There's a good deal about the Phase 2 which has you sitting up and taking notice, in the best possible way, of course. Apart from the unusual colour, there are the chrome-domed control knobs, which look as though they might have been machined as the caps for a hip-flask. Sub-conscious working over time again, the association might have some pertinence - the Phase 2 has that degree of warm brandy-fed rosiness usually associated with valve designs, but more of that later.

Only four of these decorate the front panel. One acts as the power switch, one controls volume, the remaining two are source and record selectors. Input options are a little sparse, allowing for five sources, including 'CDV' (is this one-upmanship?). A phono-stage can be factory fitted in place of the Auxiliary input for an extra £95.00.

Round the back are two prominent pairs of heatsinks, two pairs of chunky loudspeaker terminals (which by a quirk obscure the legends which show which are right and which are left) and the gold-plated phono sockets. A tip for users, here: these are sited just below the speaker terminals to keep the Phase 2's profile elegantly low, but which makes very thick bare-wire connection a bit tricky.

Blue is normally a cold colour, but not tonally, in this case. Like its more expensive two-box predecessor, the Phase Two belongs with hot buttered crumpets and warm firesides. It invests vocals with a rounded largeness that suited Hooker perfectly and made acoustic music downright beguiling. Yet it doesn't slow things down; there's a zing and zip to the attack on guitars and snare drums that keeps the music tight and on the ball. There is an air of spaciousness, too, that made The Sixteen churchy without being namby-pamby and put depth and breadth into almost every recording, whether it was Tchaikovsky's Violin Concerto, REM or Robert Plant's 'Fate of Nations'.

Speaking of the latter, whatever you might think of Plant in mellow, not to say slushy, mood, it was tracks like 'If I were a...
Carpenter' or 'Great Spirit' rather than the more Zeppelin-ish tracks which came off best. As with Ian McNabb's 'Truth and Beauty', faced with some fairly pushy rock, the Phase 2 loses a little coherence. Put together some heavy guitar work, synths and drumming, and there's a small inking of compression as the volume is wound up. Everybody is there, playing like the devil, but it's not too easy to entirely separate who is doing what to which.

That said, there is a sense of power, force and deep strong bass that is exceptional for a five-hundred pound integrated. If it suits Peter Paul and Mary more than PJ Harvey, that's as much to do with the way recordings are made as the way the Sheame behaves. In other words, it supplies such stable imaging that the current penchant for smoky pan-potting is all too obvious, while being clear enough to keep synthetic instruments irritatingly synthetic.

That enveloping warmth, but sharp vision, adds to orchestral recordings, making the Ricci/Sargent Decca recording of Tchaikovsky's Violin Concerto a sheer pleasure. The orchestra can be clumsy, but the generous tonal colour avoids the fluffs being distracting. I found the violin had a sharper, thinner tone in the upper registers than a Guarneri should have; a little at odds with the rounder, lower string and brass textures.

All the same, for sheer liveliness and that sense of 'being there', the Sheame Phase 2 is hard to beat. Blue was the last thing I ever felt while I was listening to it. Picking up on the subconscious trail again, I put on a live recording of a country rock band called Blue Train (they've just renamed themselves 'The Nelson Brothers'), made at the Half Moon in Putney, on the Pioneer D-07 double speed 96kHz sampling DAT machine a few months ago; this tape was enlightening. 'Live' isn't the word. It had a sense of atmosphere and occasion through the Phase 2 that took me by surprise, even though I made the recording. Acoustic guitar sounded even more acoustic; the drummer's snare drums and cymbals were clearly placed behind the lead and rhythm guitarists, and the five-string bass chuntered and grumbled down at the bottom with a depth to it that is extremely difficult to reproduce. I would argue that it was somewhat enhanced, the original being rather drier, but for sheer spirit and enjoyability - if not absolute regard for the truth - I'd keep the Sheame to demonstrate it with any day.

It is hardly easy these days to design an amplifier for a niche in the market, but the Phase 2 appears to have been successful in finding an under-exploited place. If amplifiers had personalities, this John Sheame would be an optimist, and a continually cheerful one. It doesn't possess the somewhat over-cool quality of the Audiolab, but hardly lags behind in imaging and soundstaging. Nor does it go toward the other extreme - all bite, bark and up-front smash-yer-teeth-in punch. But it punches hard enough when required, even if the heaviest of heavy rock tends to have the components swamping the timing a little.

It's an excellent all-round compromise for those who enjoy the warmer tinge and spaciousness of older valve designs but want transistor speed, and tightly controlled bass as well. Just the thing to stave off the blues and shut yourself in with for the Winter now the nights have drawn in. Pass me the poker, the Oscar Peterson and even the Pink Floyd somebody. See you when it's Spring.

"Live isn't the word. It had a sense of atmosphere and occasion through the Phase 2 that took me by surprise, even though I made the recording."

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**MEASUREMENT PERFORMANCE**

The Phase 2 produces 50 watts into an eight ohm or four ohm load. Since ideally a 'constant-voltage source' amplifier should double its power as load is halved, this performance suggests the Phase 2 is a long way from such an ideal. However, it has been designed to give the smooth and unfatiguing sound of a valve amplifier and it may well be that its designer felt this was one way of contributing to reaching that goal. Generally however, power supplies that wilt when more current is drawn give soft sounding bass, but it could well be that other factors come into play and that a one-to-one relationship in this area is too simple a model.

Whatever, as always, listening tests must decide. However, the Phase 2 does not, unlike most amplifiers, give more power into low impedance speakers.

In line with the valve-sound design philosophy, the Phase 2 has treble that rolls off above 20kHz. By 32kHz it is -1dB down, this representing the upper limit. In my experience, this usually results in a warm, smooth sound. The lower limit has been set very low, down at 5Hz - enough to fully reproduce subsonics from CD.

Channel separation was satisfactory at 65dB and noise a reasonably low -87dB, this figure looking a bit worse than usual because of the amplifier's unusually high input sensitivity of 130mV. It means the volume control will have to be kept down with CD, but also that the amplifier will handle all sources, even low output tuners and cassette decks (300mV) - and Leak Troubleshoots.

The distortion pattern was fairly marked. In the mid-band, the Phase 2 produces an acceptable 0.03%. At high frequencies and low levels, classic crossover distortion exists. It measured around 0.2% at 1 watt output, less at higher outputs - a typical Class B characteristic. The distortion spectrum was extended, as the analysis shows, but it became more benign (second harmonic only) as output increased. The impact of this has to be judged from listening tests; I would expect it to be just-discriminable, one way or another.

The Phase 2 has some distinctive characteristics that will certainly decide its sound. How they'll combine and what their impact will be subjectively has to be determined from listening tests. This is, however, an unusual solid-state amplifier, one designed to provide a specific sort of sound. NK
never fully appreciated in its day, yet the quintessence of dedicated, quality engineering, the Garrard 401 is not only a beautiful machine, but it can also deliver stunning results. When I saw SME's silver Series IV arm, with its superb camber chrome finish, it struck me that the two were made to go together. Both are dedicated to the finest possible reproduction from LP and possess strong visual appeal. To me they are an obvious match, but whilst the Series IV arm is current, the 401 disappeared more than a decade ago. In acknowledgement of the 401, and the way these two items work together, looking almost as one, I thought a Garrard 401 Celebration version of the SME IV arm would be a wonderful way to bless the marriage, by harmonising the two components.

The machined silver surfaces of Garrard and SME sit together easily; precision castings have a quality about them - it's something to do with the edges and bevels I suspect - that speaks. The eye glides easily over both these units, being greeted by smooth lines and delightful detailing.

What luck that slate and marble - both heavy and inert - make the best plinth materials for the Garrard. It gave Peter Soper of Slate Audio the leeway to choose a dark, richly hued stone to contrast with the chrome: he chose a deep green marble composite with black flecks in it as a base upon which the Garrard turntable, with all its torque and energy, could be firmly bolted. This wasn't an hasty choice; Peter has been mounting 401s long before I found my own could deliver an outstanding performance when mounted properly. He's an old 401 devotee who claims to have tried every material possible, insisting that marble is as close to perfect as you're likely to get.

I have never used a turntable system like this one. It seems to get everything right. It relies on massive, yet clever and precise engineering to get the best from LP. So there's no need for continual realignment or adjustment of a suspension system, belt or whatever. It has three speeds, easily chosen by a large rotary control, and speed adjustment. The rotary levers operate with a solid "crash" that tells you they're moving metal - lots of it - beneath the die-cast chassis. And that massive motor gets the huge, machined platter up to speed quickly.

There's no sensitive suspension system, so no bounce when cueing. You don't have to approach the 401 with caution and treat it with kid-gloves; the plinth is so heavy and solid it asks to be used as a hand rest when cueing, if that's what you want. True, you do have to find a pretty big, strong table or shelf for the marble plinth, since it measures 48cms wide, 50cms deep and 13cms high and weighs a massive 18kgs. I put mine on a levelled steel platform that is spiked onto a deep bay-window sill, so vibration or floor bounce wasn't a problem.

Having a steady hand, I long ago took to hand cueing pickup arms, simply because still cue levers mounted on a bouncy suspended sub-chassis are difficult to use and a recipe for disaster. In contrast, the SME Series IV on this solid marble plinth was, literally, rock stable and a delight to use.

It's a cruel irony that such a wonderful turntable system should become available as the LP is being phased out, especially since, with an Ortofon MC2000 cartridge fitted to the arm and feeding a Deltec (now DPA) disc preamplifier, sound quality was unquestionably superior to CD. It was so much better in fact, as to be depressing! The Garrard seems free of what, in comparison, seems like sloppy timing on belt drives. It keeps a rigid control on tempo, making for a fast, controlled delivery. It almost makes music sound breathless; yet it is the type of control CD displays.

Where LP at this level surpasses CD is its sense of fullness, smoothness and dynamism. Without any hint of strain or fatigue, music blossoms out of the speakers and fills the room. It isn't hard, gritty, steelly and compressed, flat in dynamics and drained of all contrasts as CD so often is. As LPs were on the wane I bought a number of albums in both formats: the Garrard/SME/Ortofon/Slate combination teased so much out of the vinyl groove, presenting it clearly, that CD was forced to take a back seat.

Images on the stereo stage were strongly embodied: they had real substance and life. Tracey Chapman's second album, Bridges, is one recording, well engineered, that excelled on LP with this combination, even though the CD sounds respectable until you have heard better. From LP she had a lifelike centre stage presence, with none of the thinness of tone and edginess that characterises CD.
The SME 401 celebration

Much of this is attributable to the SME IV, whose arm tube is a one-piece tapered magnesium alloy casting. Its rigidity is responsible for the superbly clean but smooth midrange I heard, giving a full and vivid impression of vocalists in particular. I suspect this was the reason why the 401 and SME had me trawling through female vocalists like Grace Jones, Patti Smith and Joan Armatrading. This arm also provides 'a standard of bass reproduction that is unsurpassed, underlined by the striding, relentless rhythm of a track like 'Barry White's 'Use Me Up', where Shakespeare and Dunbar give Grace Jones such a strong background against which to work.

An arm like the SME must be located well if it is to retrieve detail from the LP groove. The idea is to provide an absolutely rigid platform for the cartridge, one that neither shakes nor resonates, since any movement in the cartridge body represents loss of signal or colouration. Bearing this in mind, you can see why mounting the arm on the same marble slab as the turntable makes so much sense. It ties them together, whilst at the same time sinking energy from both. Peter Soper insists Garrard's are best mounted on marble or stone and from my experience with this plinth I wouldn't disagree. It is fabricated from slabs of marble composite, bonded together to form a conventional box, one that is free of resonance and microphony.

I hardly wanted to be reminded about just how good LP can sound, now that most modern recordings are not released on vinyl any more. Yet we saw plenty of Garrard 401s lying around at an Audio Jumble some weekends ago, all awaiting loving owners, price - around £60 (the deck, that is, not the owners). The Slate Audio plinth costs £349 and a new SME IV Garrard 401 Celebration arm costs £847.10. Fitted with an Ortofon MC2000 cartridge at £649.95, the combination costs £1906.00 in all. In my system, it put vinyl reproduction clearly ahead of CD. It's an ideal combination for anyone looking to get years more enjoyment from a cherished record collection, as well as a celebration of the engineering needed to do so.

SME / GARRARD 401 CELEBRATION ARM

The SME Series IV Garrard 401 Celebration arm has been produced specially for Hi-Fi World by SME. We felt it was the most perfect complement for this deck, in style, in finish and in performance. The owners of the Garrard name, Gradiente of Brazil, sanctioned our proposal enthusiastically.

In much the same way that the Garrard was based on precision castings, SME'S Series IV arm relies on a highly specialised one-piece magnesium alloy casting to provide a combined arm tube and headshell of outstanding strength and rigidity. The aim is to provide as steady a platform for the cartridge as possible, since any movement in the cartridge body represents a loss of signal from its output.

Since a pickup stylus accelerates at up to 1000g in the groove, resisting vibration and spurious movement in practice turns out to be extremely difficult. That is why SME cast the headshell into a tapered tube that is internally damped. Most arms ring like a bell at around 200Hz, but not this one. Its rigidity and inertness ensure powerful and well defined bass reproduction, stable imaging and a wonderfully clear mid-band, free from the sort of artificial colouration that comes from the ringing that can characterise very stiff, undamped, symmetrical structures. The arm tube moves on super high precision ball race bearings that locate it firmly within the adjustable base assembly. A large black plinth holds the base at the right height for the 401, since its idler-driven platter is higher than those of belt drive turntables.

Cartridges weighing from 5gms - 16gms can be accommodated by the Celebration. It has a medium effective mass of around 10gms, which keeps fundamental resonance (against cartridge compliance) above the warp frequency region of LPs, meaning the arm and cartridge will ride warps, rather than read them.

The headshell comes with an optional finger lift if required. A damped cueing platform is fitted to lift and lower the arm smoothly onto records.

The Garrard 401 Celebration arm is available directly from Hi-Fi World, priced £720.94 + VAT (including the 401 spacer)
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Synergy was designed for the audio enthusiast who wishes to have all the sonic benefits a tube amplifier can offer to a hi-fi system, as well as other "lifestyle" features which allows the more demanding audiophile easier control over the system. Synergy offers a level of sophistication and sonic excellence never available before in a tube amplifier, and because of our purist approach to amplifier design, all "user friendly" features do not interfere or subtract from the signal.

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As the nights draw in, Simon Cooke squares up to Select System's new CD Converter, down among the gothic piles of Maida Vale.

When Select Systems said that they'd be sending Dacula over, I did have my doubts. Opening the door, I half expected to see a Russian three-masted schooner waiting for me, with the captain lashed to the wheel.

But, gentle reader, it was not to be. This is, after all, London W9, not Whitby, so Dacula arrived in a plain cardboard carton which, on inspection, contained two dark boxes, with the requisite cables, and not a black dog in sight.

The first of these boxes, and the larger of the two, constitutes the power transformer and supply for the DAC. And right, and a chrome toggle switch, marked 'standby' and 'operate'.

It is this last switch which governs the operating mode of the DAC and hence the light on the front. In standby mode, the light is red. When the machine is switched to 'operate', the light changes to orange for a few moments, before going green, meaning 'cue the music!', and quite rightly too.

Music is what you get from this little terror, right from the word go. It gives an exceptionally smooth portrayal which is eerily agreeable. Fed with a few of my favourite jazz standards, it let the players sing from start to finish. Instrument tones were beautifully portrayed, with strings and brass coming off best, but only just. Tenor and baritone saxophones had a breathy quality where required, and comet had just the right edge to the notes, not too squeaky, not too soft.

Down in the bass, Dacula really did get its teeth into the music. Bass strings and drums were strong and firm, just sneaking into forwardness occasionally, but not to any great extent. This was more than made up for by the rhythm, which was maintained with metronomic regularity at this level. This is definitely a DAC with its finger on the pulse, and you just can't throw it off.

Moving up into the midrange, Dacula remained cool, calm and collected at all times. The smoothness, however, never went too far, and Leonard Cohen, for example, had his claim to 'a golden voice' vindicated on 'The Tower of Song' (I'm Your Man CBS 460642-2). I had high hopes for Tom Waits, but that bane of the 'smooth and musical' school of hi-fi defeated this one too. His 'Raindogs' album (IMCD 49) was just a little too full-blooded for Dacula, and it mistakenly brought forward the lower-range sibilances on the recording to smother the twanging guitar accompaniment. Only when Waits stood back from the mic and...
"Music is what you get from this little terror, right from the word go. It gives an exceptionally smooth portrayal which is eerily agreeable."

MEASURED PERFORMANCE

Dacula uses the increasingly popular Crystal CS4328 convertor chip, which is now used by Quad and Meridian, to name but two. This is the least expensive stand-alone DAC that uses the CS4328 at present and interestingly it is a two box convertor, the power supply housed in an external case.

The distortion figures show that Dacula has been well engineered. At -30dB distortion remains a low 0.006%, with no harmonics visible above the noise floor. With a -60dB signal distortion rises to an average 0.75% which corresponds to a reasonable dynamic range of 104dB. At very low levels, -90dB, Dacula was a little worse than average, but with a -90dB dithered signal and noise stripped away using synchronous time averaging, only a small amount of distortion was left behind, 4% average, which will be innocuous in practice.

The frequency response plot shows a slight lift in the bass, and again in the midrange around 1kHz. These small lifts will give Dacula a punchy bass and a forward sound, neither being unpleasant characteristics.

Elsewhere Dacula falls into the 'normal' category as far as measurement goes. One thing to watch for is its low, 1.9V, output. When other outboard DACs are pushing out as much as 3V, Dacula will be unfairly overpowered in a demonstration, unless volume levels are re-set. Select Systems are planning to increase output to around 2.5V on all current DACs though, so this shouldn't be a problem. This higher output will also give passive pre-amps a little more headroom when driving insensitive power-amps. DB

TEST RESULTS

<table>
<thead>
<tr>
<th>Frequency response</th>
<th>4Hz-21.2kHz</th>
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<tbody>
<tr>
<td>Distortion (%)</td>
<td></td>
</tr>
<tr>
<td>-6dB</td>
<td>0.006</td>
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<tr>
<td>-30dB</td>
<td>0.006</td>
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<td>0.73</td>
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<tr>
<td>-90dB</td>
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<tr>
<td>-90dB dithered</td>
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<table>
<thead>
<tr>
<th>Separation (dB)</th>
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<tbody>
<tr>
<td>1kHz</td>
<td>104</td>
<td>109</td>
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<tr>
<td>20kHz</td>
<td>89</td>
<td>86</td>
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<th>Noise</th>
<th>with emphasis</th>
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</thead>
<tbody>
<tr>
<td>-89dB</td>
<td>-89dB</td>
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</table>

| Dynamic range      | 104dB         |
| Output             | 1.9V          |

I have heard Dacula with other outboard DACs of much higher price and supposed quality. Other than that, the upper ranges remained clear and concise, the DAC exercising almost hypnotic control over the sound and rarely loosening it's grip, except on occasions already mentioned. Where detail is concerned, Dacula had a chilling accuracy. The stage was literally teeming with the smallest details, without seeming overly busy or muddled in any way. Dacula did, however, achieve this with the expedience of sacrificing a certain amount of accuracy in the soundstaging. This was the main problem I had with Dacula, by which I mean the muting of treble contrasts in the output, which dampened the dynamics a little. It gave enough to get the ball rolling, but not so much that it was capable of inspiring me to boogie around the room. It performed much better than average on all counts, with good resolution, imagery, and tone, but for my taste it was a little too laid back and relaxed. I found it less involving than my accustomed DPA Little Bit, but it often demonstrates the ability to portray atmospheres with greater fidelity. Those with other tastes found Dacula a little more involving, finding the Little Bit too flat and in comparison, less personal. Preferences can affect final choice here.

Dacula scores in this entirely way in reproducing music with a sound that has a marked similarity to that groovy old black stuff and if you've decided that it's time to kick the vinyl habit and jump on the CD bandwagon, then Dacula will probably be a better bet for you than anything else at the price. It'll evaluate it's way into your listening room like Bela Lugosi, and pretty soon, you might just be batty about it!
Dominic Todd samples the 'savoir faire' of a pair of French speakers.
Nineteen ninety-two may have been a landmark for us all. Europeans, but as far as hi-fi goes nothing much has changed. It is well known that we Brits have differing musical expectations of our hi-fis to those on the continent, so just about all the hi-fi you'll find in the shops is either British or Far Eastern (often aimed at the British ear anyway), with a fair number of American goods at the higher end of the market.

The French have had limited success with exports of hi-fi to Britain, with the exception of Micromega CD players. French ‘speakers are virtually non-existent in British stores. Cabasse intend to change this. They are already big in continental Europe with their ‘speakers appearing in many commercial applications, rather like Bose here; but don’t let that put you off! As a company they have a lot to offer; superb build quality from the Prao at £480 to the MC 001 at £40,000, high power handling with high efficiency, and most impressive of all, a lifetime warranty.

This final point is backed up with strong publicity, citing a Parisian getting his twenty year old woofers replaced free of charge! With a warranty like this Cabasse must be pretty confident, but the question is, does the sound quality match that of the construction, or is it going to be unacceptable to British ears?

To answer that question, I’ve been trying out a pair of Bisquines. These were the ‘ babies until recently, when the Praos were introduced. Priced at £598, the cost of these French delights is anything but baby talk. Ruark, Linn, Mission, Epos, and Celestion, to name but five, offer strong competition and most offer floor standers or “showroom appeal”. The size of the cabinet falls uncomfortably between that of a neat and desirable miniature, and a high and desirable miniature, and a high and mighty eye-catcher. The finishing materials are also somewhat dated, but there was never the metallic sheen that can afflict metal dome tweeters.

In time, it made possible to pick out individual instruments, and follow their every move without getting lost. “The Commitments”, on vinyl, showed the Bisquines’ fast and tight bass. It came off the Bisquine’s fast and tight bass. It came across as being smooth sounding transistor amplifier, and auxiliary equipment. If you’re looking for any other type of music in which a powerful bass line doesn’t dominate they prove rewarding. The Bisquines may not immediately bowl you over, but what they offer is an unrestricted view of all types of music, and a balance that often lulls one into forgetting about the ‘speakers altogether. As a tool to simply communicate the music, few do better at this price. However there are many speakers that offer balances that may appeal more. The Bisquines main problem though is a lack of what’s known as “showroom appeal”. The size of the cabinet falls uncomfortably between that of a neat and desirable miniature, and a high and mighty impressively pricier. The finishing materials are also somewhat dated, but there is no denying the first rate build quality which could teach some British manufacturers a thing or two. The lifetime warranty is also a useful plus not usually offered on ‘speakers of this price.

At the end of the day it’s a loudspeaker which is very dependant on personal taste and auxiliary equipment. If you’re looking for a sensitive speaker to partner a valve or smooth sounding transistor amplifier, and listen to a wide range of music then I would definitely recommend an audition alongside the more usual Snells and Tannoy’s.

Cabasse Bisquine £598
Cabasse UK, P. O. Box 304, Maidstone, Kent ME16 8TS.
Tel. 0622 729 204
BACKWARD VISION
Will somebody please remove Dominic's rose-tinted glasses? I accept that the performance of some early equipment has been underestimated, but with few notable exceptions (301, 401) this is surely confined to valve amplifiers and tuners. Even then it appears to be more a matter of personal taste and/or synergy than a monumental moving of high-fidelity goalposts. Hardly justification for a wholesale return to retro gear!
I certainly enjoy many modern valve amplifiers, but they bear no resemblance to the warm, bland and inoffensive sounds I remember from those early systems. I accept valves have the greatest potential for amplification, probably due to their simplicity, but they, like any other component, will only produce their best when designed and fitted with suitable power supplies, modern cables, stands etc.- tweaked for maximum performance.
I hope your recent remarks on modern equipment do not mark a change in editorial policy for your magazine, which previously has been a breath of fresh air for enthusiasts. It is wrong to state that there has been no progress in hi-fi, or have we all been wasting our time?

For instance, Onkyo would have been inconceivable fifty years ago, obviously not because of a lack of technology, but because of a change of philosophy.
This change, and future ones, are driven by the likes of your magazine and readers, with their fidding and (sometimes) accidental improvements. This has always been the way hi-fi has evolved and to deny that is an insult to your readers.
David J. Carter
Trowbridge, Wilts.

Funny, Dominic was a died-in-the-wool modernist when he joined the magazine just over a year ago - and he still is. He wasn't at all sure about the 300B amplifier initially, but now he won't let go of the prototype!
He refused to acknowledge the wonders of vinyl right up until the Penta show when, getting stranded with the Garrard 401, Slate Audio marble plinth, SME IV arm and Ortofon moving coil cartridge he was amazed to find it did sound better than CD!
As I write this, the 401 is walking out of my lounge, aided, over to his place - yet again. It's turning into a Garrard 401 tennis match around here.
My critical remarks about modern equipment aren't symptomatic of blind nostalgia. We're getting frustrated by the plain lack of imagination being displayed at present, and the relative lack of progress too. We really are interested in the modern and do want it to improve. But there is precious little sign of this happening at present, until some imaginative new ideas appear.
We have plenty of them - simple ones that are reasonable. For example, a current obsession of ours is for lighter, stiffer loudspeaker cone materials, and better cone contours. That's modern enough. Better, loudspeaker manufacturers are unanimous in agreeing it is an obvious way forward. But what are they doing about it? Not a lot.

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WIN HI-FI WORLD SILVER PLATED COPPER INTERCONNECT CABLES
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The writer of the most interesting or funniest letter will receive a free set of Hi-Fi World's own silver plated copper interconnect cables, worth £69.95.

Many thanks for the Rogers Studio 3s (Rogers/E.A.R. competition). They sound great in my system and have set me off onto a serious investigation of valve amplification. The amps I've heard so far, mostly Audio Innovations stuff, were quite a surprise. Not the warm cuddly sound I'd remembered from the old valve radio days. More what I'd describe as open, fluid and natural, with almost tangible ambience and imaging.
Thanks for publishing my letters (and, by implication, those of others) uncensored. I wrote recently to another Hi-Fi mag with a combination of praise and criticism and saw my letter turned into an almost fawning mush of sycophancy. I won't read or write to them again, honest!, as a matter of 'Choice'.
I like most people, am dismayed at the price of CDs, which are an undeniable rip-off, especially since the killing off of vinyl has removed the choice for most people. I only bought a CD player because I couldn't get Jennifer Warnes' 'The Hunter' on vinyl. However I feel that the complaints and pressure from the record buying public may be having some, at least limited, effect. I'm writing this letter in a tent on the coast of Brittany and my forays into local record shops have revealed that French CDs are around 145-160FF (£17-18) for full price discs with repackaged back catalogue 'budget' stuff at around 95-100FF (£12). Vinyl is totally absent, even blank tapes are ludicrously expensive, eg, £4 plus for a 2-pack of TDK AD.
Of course I'm not in a position to relate this to French incomes and cost of living etc, but I like to think that the vinyl-CD debate which still rages in the U.K is helping to moderate the worst excesses of the big music publishers. And without good Hi-Fi mags there would be no real forum for the debate.

Send your letters to: Hi-Fi World Letters Page,
A year ago we had a few spare Sovereigns and, dragging the other half along, went and listened to, then bought, our first step onto the hi-fi ladder. Back then I was fairly active, got out and about on the BMW motorcycle and generally enjoyed the out-of-doors. Since then I’ve tweaked (the wife calls it ‘fiddling with’) the system every now and again, not always for the better, but never irrevocably. Each step forward has led me to rediscover our collection of CDs. Having tried some domestic lighting cable (twin core and earth) I had laying around (I’m a builder), I wasn’t overly impressed. Yes the bass was way better defined, but I’d lost a lot of the midband. By the way, 30amp cooker cable brought about the opposite in my system.

Then the other day whilst in the newsagents reading one of the other hi-fi magazines (yours is the only one I buy) I read “the new Mission 760 SEs really sing with cones under them”. Well, I thought I’d give this a try. Not being able to buy some without first having a rummage through my tool bags etc. I came across a small cavity fixing which has a pointed end and a shaft, threaded like a small bolt. With the addition of a thick washer and four holes in the top plate of my stands, I had what looked like upside-down spikes about one inch long. The 79 strand cable was disconnected and replaced with domestic twin core. Blu-Tak removed from under the speakers which were replaced onto the spikes. A CD went into the Denon DCD890, the PMA250 II was turned up and wow! “More airy” said the wife (or was it hair-y-it’s hard to tell with that deep gravelly voice of hers). It certainly is. The bass is more defined, the cymbals are back with the drums instead of up against the lead singer, and it sounds much more balanced than before.

Once again I’m rediscovering the CD collection, staying indoors sitting in front of the hi-fi listening to the music and adding some more weight to the stone I’ve put on since last year. Unhealthy? Maybe, but cheap ‘n’ interesting entertainment.

Well I’m happy, what shall we tweak next? Bi-wire the 760s? And yes, these interconnects are still the originals. Chris Canham

Sudbury, Suffolk.

P.S. Now I’m getting a buzz from my CDs I’ll have to do something for this whirligig with the lead singer, and it with the drums instead of up against the lead singer, and it with the drums instead of up against the lead singer, and it sounds much more balanced than before.

The debate concerning single-ended versus push-pull output stages, and feedback versus no feedback is quite fascinating to me. Over the decades numerous landmark amplifiers were developed, each reaching new levels of excellence. There was the 1948 Williamson, employing triode connected KT64s, then in the early 1950s the Mullard 5L10, the first to exploit the ultra-linear configuration where the output valve screen grids are tapped into the transformer primary winding. These were followed by superb designs from companies like Leak and Quad. These were all push-pull designs, where the ‘crossing point disorders’ mentioned by Peter Quortrup in your September issue simply do not exist. In push-pull class A operation, both halves of the output stage are in continuous conduction and operate over the most linear part of their transfer characteristics. Also, the danger of transformer core saturation is largely eliminated.

Now we see a 1930s valve (the 2A3) brought back from the grave and its single-ended use advocated as the last word in perfection. Apparently, the amplifier I am currently using, a lush sounding and punchy Valvemania parallel pair, ultra-linear, push-pull, heavy feedback, EL34 amplifier is suddenly a highly questionable component, and I am beginning to worry in case I soon read that the KEF 104/2s I run bi-wired from it, should be replaced by 1920s mains energised speakers using moving iron armatures.

An old 1950s valve data book I have shows the 2A3 as giving 5% THD in single-ended configuration. Perhaps someone can tell me how this figure can be reduced without feedback, or is harmonic distortion of this order now acceptable, providing that currently fashionable time domain distortion (whatever that is in practical terms) is minimal? Regarding the 2A3, it would seem to be a poor choice of valve to resurrect. It has a directly heated 2.5 volt heater and low power output. How about the PX4 or PX25 - also directly heated. They were more powerful valves, also having the very low anode impedances necessary to ease output transformer design and provide a reasonable measure of loudspeaker damping where no negative feedback is employed.

Another contender which comes to mind is the once famous American 807. Beam tetrodes of this kind, and pentodes, triode connected or in ultra-linear configuration, single-ended or push pull, offer wide scope for research as does, I believe, the cascade connected, double-triode in low signal applications.

Finally, thank you for the most interesting of all the Hi-Fi magazines. Could we have an ongoing debate over this wide open and exciting field of development before us, now that the potential sonic superiority of valves has been unques...
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tionably re-established? This would, I hope, serve to increase general awareness of, and demand for, the exciting new products now becoming available.

David Wyllie
West Byfleet, Surrey.

Distortion levels of 5% exist at full output only, so they'll only affect short term musical peaks. At low levels single-ended working becomes very linear and distortion free - one of its great advantages.

Hearing the enormous difference between copper and silver cables, the reasons for which I cannot easily explain, I'm not surprised that thermionic amplification should differ from solid state amplification. And MOSFET's - which behave like valves - sure don't sound like them; they sound like transistors.

The PX4 and 25 are being resurrected! But the real excitement is in an all-new valve for the Nineties - secret at the moment, but in development I believe.

Bear in mind also that modern valve amplifiers can benefit from superior transformers, and expensive, high grade components like polypropylene power supply capacitors, metal film/bulk foil resistors, silver wire, etc. Also, they have fewer amplifying devices, less feedback and fewer components that solid state amplifiers, so there's a lot to be said in their favour. Then there's the sound... NK

ERIC IN FLIGHT

Right, that's it! Will someone please chuck that flat-earther Braithwaite person off the nearest large building, before he请 chuck that flat-earther nearest large building, before heRefreshed, of Thame, with great interest. Whilst I would agree that your suggestions to Mr. Foster would have some effect, the benefits would be limited only to those appliances suppressed, and inserting extra reactive components into a circuit not designed for them could ultimately degrade performance, in spite of theoretical considerations that suggest otherwise.

Apart from interference from uninvited radio transmissions and pops and crackles from household appliances, radio frequency (RF) pollution in a system can manifest itself in many other ways; for example, it can raise the noise floor. How the pollution affects the sound can depend on the nature of the pollution, the system, and where in the system the garbage is getting in.

Apart from my background in electronics, some supposition and personal experience, I have little else to go on. I haven't done any scientific testing, so anybody please feel free to challenge the following hypotheses.

All interconnects, power and speaker cables appear as far more complex impedances at RF than in the audio spectrum, but this is perhaps not a problem so long as they are correctly terminated. Any dry joints or oxidation can degrade this termination at RF, appearing as both reactive influences and many small p-n junctions, causing the RF to appear as a larger voltage than it would otherwise.

The RF pollutes the system either via the signal path or signal earth. I have found that scrupulous attention to the quality of soldered joints and the cleanliness of mechanical ones everywhere not only improves the sound but reduces the susceptibility to external interference. It also appears to lower the noise floor, giving a wider-perceived dynamic range.

This seems to hold true even for line level sources, but shows at RF that is sufficient to terminate the earth loops it should be in one place only. In record playing systems this is usually somewhere inside the record player, but in a Lingo'd LP12 the mains never makes it to the record player. It may be that the Lingo's earth and the LP12's earth are connected, but there is no guarantee that at RF that is sufficient to terminate the system's signal earth. (Maybe someone from Linn reading this may like to challenge this supposition.)

Since most modern devices only use live and neutral (some may have an earth but this probably only goes to the case anyway) in Mr. Foster's system the signal earth probably isn't earth at all, at least as far as any marauding RF is concerned. Running a separate earth wire from the amplifier's grounding stud to a reliable earth like a cold water pipe (smearing Vaseline where the wire clamps to the pipe, of course) will ensure the system's signals have a good reference earth. Again, a dedicated spur is the best overall solution.

This is not to suggest that Lingoing an LP12 makes the system susceptible to interference. On the contrary, I have one myself, continue to be delighted by it, and would recommend the upgrade to any Linn user. However, some systems in some environments need that extra bit of effort to get them working at their best, and ideally a Linn dealer would iron out any wrinkles on installation; but symptoms like problems.

I have found that this happy state of affairs is extended timewise by rendering power and speaker cable terminations, including the wiring joints and fuses inside plugs, airtight by smearing with Vaseline after cleaning (this does not interfere with the signal as one might expect, as Vaseline deforms and migrates away from those places where there is metal-to-metal contact, but prevents the electrolytic action that leads to corrosion in those places where there is even a microscopic gap.) There is of course no need to do this with gold connections, as gold doesn't oxidize.

Other connections worthy of attention, but only if one is really confident of electrical installations, is ensuring all wiring inside other sockets on the same ring is tightly screwed in. A dedicated spur is the best solution.

Finally there is the question of where the signal earth and mains earth become one. To avoid earth loops it should be in one place only. In record playing systems this is usually somewhere inside the record player, but in a Lingo'd LP12 the mains never makes it to the record player. It may be that the Lingo's earth and the LP12's earth are connected, but there is no guarantee that at RF that is sufficient to terminate the system's signal earth. (Maybe someone from Linn reading this may like to challenge this supposition.)

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This is not to suggest that Lingoing an LP12 makes the system susceptible to interference. On the contrary, I have one myself, continue to be delighted by it, and would recommend the upgrade to any Linn user. However, some systems in some environments need that extra bit of effort to get them working at their best, and ideally a Linn dealer would iron out any wrinkles on installation; but symptoms like these may not show immediately the upgrade is installed, especially if it is part of a full system installation and all the cables and connectors are shiny and new.

I would suggest anyone

Continued on page 45...
When you purchase from Bill Hutchinson you’re buying the best names in Hi-Fi from the best name for Hi-Fi. Our product guarantee and pricing policy ensure you obtain an excellent deal, my staff and I look forward to being of service to you.

HEAR KENWOODS AWARD WINNING AV AMPLIFIER

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ALL WITH 2 YEAR GUARANTEE  BEST PRICES GUARANTEED
The new SU-A600 from Technics is the bottom of the range of four 'A Series' amplifiers. They are marketed as "a step forward that brings us closer than ever before to the true audio ideal". A few years back I would have dismissed this as Japanese sales hype, but since both Pioneer and Denon have been producing some very respectable sounding amplifiers over the last few years I was prepared to give the Technics the benefit of my doubt.

The SU-A600 has several features that suggest it might provide a quality sound, even though it is slightly more tackily finished than other Japanese products aimed at the audiophile market. The features include a "Class AA MOSFET" output stage which, on closer inspection, turns out to be a bipolar output stage with a MOSFET driver stage. In much the same way the "special Class AA bridge connection circuit" turns out to be four resistors.

Technics' marketing department have certainly been working overtime, since no less than four information booklets came with the review amplifier. They were from Japan, attempting with cartoon pictures (very Japanese) to convince that the SU-A600 turned out to be a bipolar output stage which, on closer inspection, would have dismissed this as Japanese sales hype, but since both Pioneer and Denon have been producing some very respectable sounding amplifiers over the last few years I was prepared to give the Technics the benefit of my doubt.

The SU-A600 does a good job of relaying power supply and "R-Core" transformer, which are said to have been developed to reduce noise and hum to an absolute minimum. However, we measured more than twice the equivalent input noise compared to our kit valve amp. There is little point in having a quiet power supply if the components used in the amplifier are noisy themselves.

What I was expecting from the SU-A600 was a similarly smooth and detailed sound to that of Pioneer's and Denon's latest offerings. What I got was quite different. Whereas both these manufacturers use U.K. engineers to tweak and modify, with great effect, Japanese equipment to better suit the taste and demands of the U.K. market, Technics have chosen to ignore this approach. The result is an amplifier that sounds little different to those they have produced in the past.

When I first plugged in the SU-A600 it sounded flat, thin and sterile, devoid of depth or emotion. This came as a bit of a shock after reading the comprehensive literature which explained in no uncertain terms that this was going to be one of the best amplifiers I had heard, especially at a touch under £200. Looking through the instruction manual I came across a page devoted to troubleshooting. One of the faults was described as a "thin bass, tinny sound. "A-ha!" I thought "Perhaps something is wrong". The diagnosis suggested that I had the loudspeakers connected out-of-phase. As I had plugged the Technics in in a bit of a hurry, I decided to check. Unfortunately the connections were O.K.

The 'A600 does a good job of relaying the basic components of a piece of music. Bass guitar was quite tight, although not especially powerful, vocals were reasonably clear and cymbals were there, if not all that sharply focused. But where was the atmosphere? The sound of the 'A600 was so damped that any atmosphere or fine detail appeared excluded from its presentation. You really do get the impression that what is left is only survived being squeezed through masses of cheap components because it was of higher level. Anything faint or delicate had been lost. It was like listening to three tracks of a twenty-four track recording. I asked myself the question: "Did anyone listen to this amp before it was put on the market?"

With a recording such as John Lee Hooker's album 'Boom Boom' his close miked voice sounded as if it was coming from behind a layer of felt underlay, the atmosphere and character of his voice being so absorbed. Given something simple, say electronic pop music, the Technics could sound quite reasonable. It has a light bass end, but because of this it does get the impression that what is left is only survived being squeezed through masses of cheap components because it was of higher level. Anything faint or delicate had been lost. It was like listening to three tracks of a twenty-four track recording. I asked myself the question: "Did anyone listen to this amp before it was put on the market?"

For around £200 or so, both the new Denon PMA-3501 and the Pioneer A300X offer excellent sound quality, a chunky feeling construction and a chance to enjoy music. In my view the SU-A600 offers none of these.
MEASURED PERFORMANCE

Although heavily vented, heat sinksed and be-fanned, the SU-A600 turns out 66 watts of power, much the same as its rivals. This is enough to go loud with modern loudspeakers, especially those with 86 dB+ sensitivities, of which there are an increasing number. The Technics will drive low impedance four ohm speakers without hesitation too - unlike some British MOSFET amplifiers - delivering 100 watts maximum into them. So, like most Japanese amplifiers, this one delivers a lot of power for the pound.

Frequency response through the CD input (and tuner/aux/tape) measured flat between 8 Hz - 32 kHz, sensible figures for CD in particular, where bass extension can be justified, but not treble extension, since CD produces only unwanted rubbish above 21 kHz. This input was very sensitive too, meaning low output cassette decks and tuners (300 mV or so) can be accommodated. Low noise and good stereo channel separation were achieved.

The disc stage caters only for moving magnet cartridges, but with a measured -80 dB hiss level it was very quiet. Technics have not included a low frequency warp filter, response reaching down to 11 Hz. Consequently, cone flap is likely from LP if this amplifier is paired with reflex loudspeakers. Otherwise, the disc stage measured well.

Distortion was very low through CD and LP inputs (around .005%), but this is to be expected with a well designed MOSFET amplifier, since lots of feedback can be used. The SU-A600 measures well in all areas and delivers plenty of power, but it differs little from rivals. It is well engineered in a standard idiom. NK

<table>
<thead>
<tr>
<th>Power</th>
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<tbody>
<tr>
<td>CD/tuner/aux</td>
<td></td>
</tr>
<tr>
<td>Frequency response</td>
<td>8 Hz - 32 kHz</td>
</tr>
<tr>
<td>Separation</td>
<td>70 dB</td>
</tr>
<tr>
<td>Noise</td>
<td>-95 dB</td>
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</table>
volume control. This means that the signal from the input selector is fed directly into a low noise, high gain pre-amplification circuit before the volume control. This input circuit has a -10dB switch which improves the overload margin for high level sources such as CD. For lower output tuners and tape decks the switch can be turned off to provide similar gain to that of any other integrated amplifier.

The components used are of a high grade. They include a sealed, multi-wiper volume control, all gold-plated phono input sockets and self-cleaning input selectors that prevent signal degrading oxidation. This amplifier feels the business too, the ‘1200 having plenty of weight behind it, even though it is only rated at 25 watts output and the plain front panel hints at the philosophy of simplicity hidden inside.

When I last reviewed a Harman Kardon amplifier I praised the way its controls fitted neatly and precisely into front panel recesses. It’s strange then that on a subsequent model with far fewer controls, this area seems to have been neglected. Both the Source and Tape Monitor controls rested off-centre, angled in towards each other in a rather haphazard manner; it made a bad impression. One other gripe about the new ’1200 is the continuing use of loudspeaker terminals that are designed to fool you into believing that they will easily accept 4mm banana plugs. They do, but you have to force them in from the side, and if you use metal bananas they short against the casework and trigger the protection circuit. If Harman are really serious about using quality components, they might like to make some effort here.

The sound of the new HK1200 wasn’t quite what I had been expecting. It was unusually bright, too bright in fact to sound balanced. I quickly changed over from the Heybrook Sextets I was using to Quad ESL-63s which I hoped would reveal more of what was going on. After a few tracks from various albums things still weren’t sounding too good. Not only was it bright, but the treble was splashy and vague, rather than well focused and clean, as I have come to expect from Harman amplifiers - and especially this one, to which so much attention has been paid to keep signal paths to a minimum and preserve the original signal.

I tried several other ‘speakers with the HK1200, but each time the same characteristics remained. Looking once again through the information provided I noticed something which has changed. Harman amplifiers had a bandwidth that reached up to 150kHz, but the new circuit design and layout has extended the HK1200’s bandwidth even further - up to 300kHz. Perhaps this new amplifier is now amplifying unwanted out-of-band signals from CD, which is producing the splashy treble. It strikes me that the amplifier is now covering double the bandwidth of earlier HK amps and it is having to work harder because of it.

An analogy could be drawn between this and bi-wiring a loudspeaker. By using two sets of cables to a ‘speaker, the bandwidth carried by each cable is reduced, they work more efficiently and sound quality is improved. Harman Kardon appear to have gone in the opposite direction with their new amplifier, increasing its workload.

Moving down the spectrum towards the midrange, performance improved considerably. The midband was clear and open, displaying a light and airy character which particularly suited female vocals and acoustic pieces. With Suzanne Vega, a combination of both, the HK1200 really breathed life into the music. With material like this it really showed what it was capable of achieving - a delicately detailed and smooth performance.

Tracks possessing more bass were also coped with admirably. Although only rated at 25 watts, the ’1200 had plenty of speed and slam in the bass. It wasn’t quite as rich as that of the 6150 or as dry as the 6550, striking a nice balance somewhere in between. With a live recording of Simple Minds, the bass was clean and articulate, but not as sterile as it can be on some amps. On tracks with a fuller, richer bass quality, such as Annie Lennox’s ‘Diva’ album the ’1200 was full and rhythmic, but steered clear of becoming bloated or losing control.

Basically the ’1200 has some nice qualities that are worth hearing, but its treble really needs to be sorted out. I used electrostats and box loudspeakers with fabric dome tweeters and found the amplifier too bright - and I like a slightly bright presentation. I hate to think what it would sound like with a cheap metal dome tweeter. It’s such a shame that after so much apparent effort has been put into this new design, which could be a real winner with the British audiophile, it is compromised by one small, but significant, weakness.

Perhaps I am being too harsh on the HK1200, after all it’s a £280 amplifier. Partnered with care, it could offer much needed insight in, for example, a system with speakers having a dull balance, like the Goodmans. Mezzos in our group test this month. That’s where the new HK1200 will score.

---

**MEASURED PERFORMANCE**

Output from this new model measured 36 watts into eight ohms and 36w into four. That’s enough to go loud, if not headbangingly loud. Ideally, an amp like this will be paired with reasonably sensitive loudspeakers (86dB SPL, for 1 watt, or more) in a small-to-medium sized room.

As usual, Harman have engineered a wide bandwidth of 4Hz to greater than 150kHz (our measurement limit), in line with their stated philosophy on this topic. A surprise with the 1200 is use of a buffered input, where signals run straight into an input stage, rather than the volume control. Quad once used this theoretically attractive approach, even if it does raise the spectre of input overload. The HK1200 overloaded at 2.5V, around the maximum output of a CD player. Aware of this, Harman have provided an input attenuator (-10dB) which, ideally, should be engaged with CD.

What are the benefits of a buffered input? They offer a defined and unchanging input load to external sources, meaning that in theory at least, better source matching is achieved. These days, there’s rarely a problem with matching though, so the benefits may be more illusive than real.

In all other respects the 1200 measured well, possessing low distortion right across the audio band, with second harmonic predominant, which is a good sign, since this type of distortion doesn’t sound nasty.

The HK1200 has to carry forward the good reputation of Harman’s earlier budget models. Its measured performance is good enough not to thwart this, but the buffered input could well have some impact upon sound quality. I’m afraid to say that, to date, every amplifier that has used a buffered input has, in the end, reverted back to the standard arrangement. I can think of no example where this arrangement has been judged successful and been retained. NIK

| **Power** | 36watts |
| **CD/tuner/aux.** | 36watts |
| **Frequency response** | 4Hz- >150kHz |
| **Separation** | 74dB |
| **Noise** | -100dB |
| **Distortion** | 0.018% |
| **Sensitivity** | 160mV |
| **dc offset** | 34/11mV |

**Distortion**

A little second harmonic distortion of 0.018%
**DUTCH MASTERS**

New from the Netherlands comes the Duson PASO integrated amplifier. Simon Cooke finds out what kind of picture it paints.

Duson are a Netherlands-based company whose products are distributed in the UK by May Audio of Yorkshire. The PASO is their bottom-of-the-range integrated amplifier, priced at £650. The styling approaches high-end minimalism, the PASO having just four delicate-looking rotary knobs, for volume, balance and listen/source selectors. The only other control on the front is a small black power button. All of these controls are marked with pale blue print on a mid-grey fascia, which struck me as not being the most user-friendly choice of colour scheme.

Tape, aux, CD, tuner, pre-out (this amp can be used as a pre-amp if required) and phono gold-plated input sockets can be found on the rear panel, as well as a binding post for earth, nickel-plated 'speaker posts, and a fuse cover above the hard-wired mains cable.

In use the Duson's sound starts out firmly, leading the music with a strong, steady beat. All notes are played in this appealing, decisive manner. The bass is where the groundwork for this approach is laid. The Duson goes down deep without becoming vague; it was only slightly muffled. Drum lines are played metronomically, except on a few occasions where the Duson seemed to lose its sense of rhythm on the very fastest bass lines.

The midband seemed just a little full and forward, and slightly gritty, but not overly so. This was a presentation which served jazz and rock very well, and although there are smoother sounding amplifiers at the price, I found myself warming to its approach.

The treble is where the faults lie, sounding somewhat shrill and coarse. Decay of notes, which had been good in the lower register, fell off sharply here, leaving harp strings and alto vocals occasionally bereft of their emotive quality. On continuous chords, however, where notes are not given time to decay, the treble was adequate, and had a good deal of vivacity. Eiji Kitamura's clarinet break on the Scott Hamilton Quintet 'In Concert' CD (CCD-4233), for example, was full of detail and breath, with a speed and attack which was quite exhilarating, keeping me on the edge of my seat as he and Hamilton tossed phrases back and forth.

Detail, as I have just mentioned, was good, the whole range of instruments being filled with the smallest nuances of atmosphere and texture. It was a pity that the Duson was not capable of more solid soundstaging, since this level of detail lends a three-dimensional quality to the image, if the instruments are properly separated in the first place. It was this failure to pin the players out in space which allowed the stage to fall into a simple wash of sound occasionally, as some of the instruments wandered inside the image.

To conclude, the Duson is a good amplifier within its own limits, but not one which stands out as unassailable. The sound is punchy and vibrant, but the sharpness of the very top notes and the mobility of the instruments within the overall stage prevent it from being a commendable product for all types of music. If you like rock or jazz, however, it has qualities which make it worth seeking out for an audition.

**MEASURED PERFORMANCE**

The Duson produces a healthy power output of 55 watts into a normal eight ohm load and 90 watts into a low four ohm load. This is enough to get good volume in most rooms with most loudspeakers.

I measured nearly 0.5% distortion when close to full output at high frequencies. It is likely that some treble roughness may be heard.

Frequency response via CD/tuner/tape measured 4Hz-30kHz, which is just about right for CD, which needs extended bass to reproduce the subsonics but curtailed treble to prevent aliasing products coming through. Noise was low and channel separation high.

Although quiescent d.c. offset was minimal at around 1mV, I noticed that twiddling the volume control fast produced d.c. bounce on the output, suggesting extended subsonic response and slow d.c. servo circuits. This can be problematical.

The Duson obviously differs from the norm, but this can be good or bad. In most areas it looks like a well worked out design, yet in some I have doubts. NK

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<th>Result</th>
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<td>CD/tuner/aux.</td>
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<tr>
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<tr>
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<tr>
<td>dc offset</td>
<td>2/1mV</td>
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</table>

**Distortion**

![Distortion Graph](image-url)

Extended distortion harmonics 0.03%
suffering from interference tries these things first, as I have found they have benefits beyond interference suppression - no periodic sound deterioration meaning a need for regular plug cleaning rituals is one. If they don't solve the problem, only then should Mr. Foster consider putting unwanted components into his system or suppressing all his household appliances. All this begs the question as to why this susceptibility is more suffering from interference tries cleaning rituals is one. If they meaning a need for regular plug interference suppression - no to do with either. Maybe another reader knows? Scarborough, David P. Sallitt North Yorks. RF noise is a white noise appear within the audio band. If noise intermodulates with the level of musical signal. It is intermodulation products that noise pumps up and down with the effects of RF noise. As and there seems to be no limit to this form of distortion; very significantly audible. This form of distortion; very very much I look forward to reading Hi-Fi World. Your article (Reflection Vol 3 No. 5) hit the nail on the head as regards boring, lack-lustre products from the powers that be. I had problems a few months ago with a tune-up-grade from the solemn looking black boxes that adored my equipment support. After living with these items for a year, I decided enough was enough. No more 2001 Space Odyssey black monoliths for this man. Time for a fresh look at life, and so started my journey through the hi-fi jungle. Dealer after Dealer, demo after demo, still nothing could quite grab my attention in sound or looks. I was beginning to despair, I even had nightmares of owning some bizarre looking Bang & Olufsen products. HELP! I'm not a rich man, I can't afford Yoshino Amps or seductive looking Accuphase CD players, Those are just for pools winners. No. It had to be more down to earth products, something that looked and sounded great, but wasn't black. Then I had an idea, (pretty rare for me) why not dig out all my back issues of magazines, scour every page, there must be something. Lo and behold it came down to two systems. System 1 Aura CD50 used as a transport E.M.F. Audio Crystal DAC Aura VA100 evolution amplifier Aura TU50 tuner. All finished in mouth watering chrome, or System 2 TEAC P.500 transport TEAC D.500 DAC Pioneer CT5610G cassette deck. The champagne finish of the TEAC is similar to that of the Pioneer and for good measure, to make up your valve mono blocks and line level pre-amp using white marble as the chassis. I opted for system 2. The TECAs and Pioneer are now encased in white Italian marble, which not only looks great, but stops unwanted vibrations also. I will have to save up for the amps, but it won't cost me for the marble at least. It helps when your brother is a stonemason. All I need now is a speaker manufacturer with enough balls to design a speaker that sounds good, but turns its back on conventional looks. And there endeth the letter. Keep up the good work, I'm off to play with my marbles now. Mick Golden Chadderton, Lancs. Thank you Lord Egin! There are quite a lot of esoteric-looking loudspeakers around, but they can compromise acoustics for visual aesthetics, but esoterica needn't be expensive. A friend of mine, some time ago, wanted mid-system 'speakers in tartan. She, knowing of my occasional forays with the brush, commandeered my services, and after much careful and considered artistry (Ahem!), a dozen layers of Dulux, and replacement of the black grille cloth with tartan, we powered them up. Sonic disaster! Bad 'speakers were made even worse, but I did earn the eternal gratitude of my friend, at least until tartan went out of fashion. The reason for this nostalgia? Well, if you've a light touch with the brush or, preferably, an airbrush, you might consider unpainted kit loudspeakers and finish them yourself. There are many books on trompe l'oeil painting techniques around, and if you have the confidence and a little dexterity to try, why not take DIY to its conclusion? Me! I stick with the Arthur C Clarke school of 'speakers, despite having seen and heard successful examples of 'speaker decoration since my attempt. SC EXPENSIVE FURNITURE From some magazine reviewers and letters pages it would seem that hi-fi is nothing more than expensive furniture to collect at whatever price, add every conceivable accessory, tweak etc. and let the world know. Despite all the equipment and the vast LP collection (always LPs), the music is never listened to as this bit and that is adjusted to an imaginary perfection. I work in the photographic retail trade and there is an analogy that compares those that purchase the expensive hard- ware to hang around their necks as expensive jewellery without thought for the photographs they will/will not produce. The other snob value that erks is that the old is always better than the new i.e. LP to CD. Although at the most expensive levels this may be true, at more modest levels they are no more than different. There must be a point where the vast majority of us can't hear an improvement between systems, only a difference. Sadly, here in Guernsey it is even harder to find out as the few dealers understandably stock mainly Japanese mass market equipment. Although one dealer does stock Arcam, it is behind the front door, so is possibly deemed to be of little worth. We used to be able to buy Mission, but supplier and dealer have fallen out. There is of course Quad and a recent listen to a system confirms what Noel writes about the ESL63. Sadly this is priced way beyond my means. Perhaps you could run a Quad competition every six months or so, and please, please may I win! Thank you once again for the July issue and I look forward to all the other issues, keep up the good work. Dave Nash St. Peter Port, Guernsey. It's only natural that when people think they can hear a difference, they rate one option as better than another, or at least more desirable, and it's also true that the more desirable option is often the one you don't possess (the grass is always greener...). Given that, the gentle ministrations of salesmen, and pressure from the giants of the industry to sell more, people buy both goods and accessories, and continue to do so until they can no longer justify the improvement. Here at Hi-Fi World we try and ensure that, at whatever price, our readers are aware that newer options are not always better in terms of sound or economy than the equipment they supersede, hence the valvetop/vintage articles. We also do to cover the current marketplace to show that there are alternatives. Hence the DIY articles and suchlike. We try to convey to people that good hi-fi doesn't always cost the earth (or vice versa) but if people want to pay the money for the goods, that's up to them! SC...
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Thinking "wouldn't it be nice if SME were to produce a Celebration arm for the 401" is just one of those little things that comes to you. I was surprised, and of course pleased, that SME should think it a good idea too and agree to produce a special version for us. Doesn't it look completely gorgeous on the Slate Audio marble plinth? - and a perfect match too, for the plinth and the turntable. They were made for each other, and they sound superb as well. As I've said elsewhere in this issue, Dominic resisted the lure of the wholesale catalogue and of course he's prised, and of course we have to have it back since!

We have had to get involved in manufacture to be able to bring you new valves amplifier designs within the Supplement. The output transformers of a valve amplifier are crucial components. Unfortunately, some off-the-shelf items we have tested were not very impressive, so we got ours designed by Tim de Paravicini.

You might be interested in how they are produced. Tim first winds his own prototypes, to verify the design. He then sends winding instructions to our transformer manufacturer. They promptly phone us and say something to the effect "He's mad - we can't wind this!". We're unsympathetic; if Tim can do it, so can you, I tell them.

After some shouting and arm waving - by Tim of course - the supplier rapidly comes to believe it's in his own interest to do precisely as Tim says and not to ask silly questions! So we get the same results as our own. And we can't send winding instructions to your local manufacturer in Woolgoolga! The surf's fabulous down there, I know, but the winding techniques are secret and in any case we're not at all certain your local winder would have much luck with these things after refrigeration units. On the same note, thanks to all you guys in the East who'd like to place volume orders for our transformers; they're unlikely to arrive the Saturday before, but as you may now have gathered, we're not meant for sale as OEM items for use in other amplifiers.

The next prototypes are the single-ended valve amplifier design, until we found out more about it. "Oh yes", said P.M. Components, "we know the DA100. How many have you got for sale?". "No", I said, "we want to buy them". "You can't do that", I was told, "because there aren't any anywhere".

"DA100?" said Martin Billington, of Billington Import, who also supply transformers. "We can't get hold of them. But you don't want to put those in your magazine, because you won't have any readers left. They were transmitting and P.A./cinema-sound valve that could dissipate 250W on the anode, but they needed a 1500V H.T. supply. Sure enough, 'An approach to audio frequency amplifier design', published by GEC, depicts this monster triode in a 270W amplifier, driven by KT66s, running from an H.T. line of 1.25kV. Never mind, it was a nice idea.

There were other delights at the jumble. We saw plenty of Garrard 301s and 401s, many in superb condition, commonly priced at around £60. There were innumerable Leak amplifiers and Troughline tuners, all at bargain prices, and some fascinating 'Goodsell of Brighton' Williamson 0.1 as the next candidate for a single-ended valve amplifier design, until we found out more about it. "Oh yes", said P.M. Components, "we know the DA100. How many have you got for sale?". "No", I said, "we want to buy them". "You can't do that", I was told, "because there aren't any anywhere".

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Reflections from Noel Keywood

kaleidoscope

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Linn's Karik, Kairn, and Keilidh are well known products. Dominik - sorry, Dominic - Baker finds out how well they perform together.
Linn have an aura of speciality about them that is fascinating. Their success is based upon the design, manufacture and marketing of one turntable - the LPI. The marketing always loomed large; 'persuasion' is how it might have been called. In retrospect, the way this turntable developed a cult following seems incredible. It was followed up by a range of advanced pickup arms and some stunning moving coil cartridges.

After the LPI came the powerful Isobarik loudspeaker that continued their success. It was a little less mystical though, offering an enormously powerful sound for anyone sufficiently well oiled to be able to afford both the speaker and the 'six-pack' of Naim amplifiers needed to drive it to its best abilities.

Nowadays, Linn produce a wide range of amplifiers, tuners and other loudspeakers, but their specialist image has evaporated with the ever increasing product range, as commercialites takes over from apparent religion. Partly because Hi-Fi World has had very little Linn produce to review in the past, and partly because of the increasing numbers of readers writing in with queries who own a pair of Linn Keilidhs. loudspeakers, we have decided to audition a whole Linn CD system. This consists of a one box CD player, the Karik at £1,149, the Kair line level pre-amplifier at £995, a pair of LD100 stereo power amplifiers at £495 each and, of course, a pair of Keilidhs at £579. This brings the total system price to around £4,060. This represents the base level Linn CD system, although one of the power amplifiers could be disregarded to save £495 on the total system price.

Starting with the source, the Karik is a one box CD player representing the entry level into a Linn CD system. It has all of the functions that you would expect from a modern CD player, including electrical and optical digital outputs, enabling it to be used as a transport. These are accompanied by an electrical 'CD Sync' input, so when the Karik is used as a transport with Linn's Numerik CD converter, sync-locking can be used to reduce the effects of jitter and improve sound quality. Other than this, the Karik is pretty straight forward, with all functions available on the remote control.

The fascia of the Karik is very clean with straight, simple lines; only the Play, Open and Power buttons are visible. The disc drawer has a fast and smooth action, which inspires confidence in the engineering. This player looks plain and easy to understand, and it is.

A small plastic panel beneath the display opens with a lovely smooth, damped feel to it, activating the display to awaken it from standby mode as it does so. Behind the panel lie basic track skip, search, time, pause, repeat and stop controls, so if the remote disappears down the back of a settee, the player can still be used.

These same controls are echoed on the remote control handset which has defined areas for CD, tuner, pre-amp and matrix for multi room applications. The only oddity of the remote hand set in this context is the fact that its numeric keypad has no control over the CD player, so repeated track skipping has to be used instead to access tracks.

Moving on to the Kair pre-amplifier, there's little change in form or style. It too has a flip down panel, which this time hides volume, source, record, mono and balance controls. The Kair has four line-level inputs and two tape monitors, plus three pairs of outputs. These make the wiring of a Linn tri-amp system simper where multiple power amplifiers are used. This pre-amplifier also has some useful program functions that can be set in when you first power it up. The setting I found most useful was one where the system would automatically select CD, press play and set the volume level to 50 - making even the remote control redundant.

I was supplied with two Linn LD100 power amplifiers for the purpose of this review. It allowed me to use the system in bi-amp mode, i.e. one stereo amplifier for each loudspeaker, with one channel driving the treble and one driving the bass/midrange. This is basically a step up from bi-wiring, but one below going for a fully active system.

The LD100s have one set of phono inputs, but also a line output. This enables both power amplifiers to be connected together and fed from a single pair of outputs from the pre-amplifier. They also have no less than eight pairs of loudspeaker terminals, four per channel, so bi, tri or even quad-amping is easily implemented. They are all flush mounting 4mm banana sockets, to prevent the bunched connectors shorting and damaging the amplifier.

The LD100s are rated at 50 watts output, which is plenty for all but the most power hungry 'speakers. Two sorts of protection circuit are provided: one senses excessive current and the other heat. However, I used the LD100s stacked on top of each other and neither ran particularly hot which is convenient for those with limited space.

Interestingly, Linn have chosen to use a Mu-metal screening to around each power transformer. Mu-metal is an expensive alternative to steel, but much more effective at screening out hum. It allows the power amplifiers to be placed directly beneath the pre-amplifier and CD player if desired.

The Keilidhs loudspeakers supplied are small, infinite baffle floorstanders. They use two small finch bass/mid drivers connected in parallel and placed symmetrically above and below a ceramic dome tweeter. The bass/mid drivers both fire into one large chamber which is heavily braced through its whole height, to create a heavy and rigid cabinet. As standard, these speakers come with a set of bottom spikes, but, as the Linn representatives told me, most pairs of Keilidhs are sold with the optional smooth granite composite base which has a wider footprint giving better stability and rigidity.

The whole system was initially set up by two gentlmen who represent Linn in the London area. Interconnects and 'speaker cable were provided by Linn and the system was auditioned by both of them and 'speakers re-positioned until both were happy. As a reviewer and enthusiast I felt more than capable of doing this myself, but it was interesting to observe the procedure and as most Linn systems are installed in a similar way by the dealer who sold them, I didn't complain.

The 'speakers were placed around a foot from the rear and three feet from the side walls and toed in slightly towards the listener. In this position I found they still had the best bass extension, being both solid and deep, but a rather more coloured midband than I was used to. However, I decided to give myself a few days to become accustomed to the system's very different presentation, after living with valve amps and electrostats.

Over the period that I had the Linn system, several friends popped round to audition it. All of them appreciated the much neater and more domestically acceptable appearance compared to the jungle of wires connecting Quads, subwoofers, numerous power amplifiers etc that normally grace the far wall of my listening room. However, a couple of the keen listeners amongst them commented on the harder, more forced presentation of the Keilidhs. However, both guessed that they retailed at around
a thousand pounds, which is a complement considering that they are half this price.

The sound of this Linn system I'd describe as 'very hi-fi', in the nicest sense of the word. It finds detail in a recording and then forces it forwards for appreciation. In this respect it is extremely impressive and can captivate an inquisitive listener. It thrives on good recordings, the Keilidh's have good, deep bass extension for their size and a slightly emphasised, sparkly treble, both of which are aurally quite pleasant. And both frequency extremes beg to be exploited to allow them to show off. With recordings of average quality the system could become cold, hard and uninvolving where other less impressive sounding set-ups would continue to flow and breathe, making the music enjoyable, even if the recording was technically deficient.

It was at this point that I started experimenting with the positioning of the loudspeakers. I was worried about the quality of the system's midband in particular, since on chesty male vocals, such as John Lee Hooker's, the sound was a little more chesty than it should be, and even with female vocals the midband had a boxy coloration to it.

I started by moving the Keilidhs further away from the rear walls. This reduced bass extension a little, but gave the mid far greater clarity and reduced the throaty, boxy effect by a degree that more than outweighed the compromise in bass output. If you already own a pair of Keilidh's, and have noticed a similar coloration in the midrange, I strongly recommend moving them into the room coming from, it makes the whole sound that much more believable for me. The Linn system was O.K. in this respect, but certainly not up with the best.

The overall character of the system was dry, controlled and punchy. This character suits a wide range of music, but none more so than live rock. The Keilidhs handle high volume levels very well and the pair of LK100s do a very good job of controlling them. The system was capable of producing a large and powerful sound that would impress or annoy neighbours, depending on their nature.

With simpler, more delicate and intricate music, it lacked the emotion and insight of alternatives - and ultimately it was short of musicality. Sadly, I never really had time to experiment with the individual components of the system by plugging them into different systems, but then Linn equipment really does sound best in a Linn system. The only exception I would make here would be the speakers. I can imagine the Keilidhs working very well in other systems, away from the grip of the Linn front end where they would breathe a little more easily if desired, I believe.

As a system, I found this one extremely competent. I'm not sure that the Keilidh's really need the second power amplifier, so money could be saved in this area without too much compromise. It is a very simple and friendly system to use, and had I inherited a large country manor house it would certainly find its way into one of the rooms.

Linn Products Ltd.,
Floors Rd,
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Glasgow. G76 0EP
Tel: 041 644 5111
The mid-price turntable has had its day, or so many in the hi-fi industry think, although vinyl is making something of a comeback at the moment. The past year or so has seen sales of turntables concentrate mainly in the low budget region ("something that will play my old records") and in enthusiast high-end markets.

The budget-mid price audiophile turntable market (£200-£400) has taken something of a nose dive as punters stick to CD or go for a higher quality (and inevitably more expensive) turntable. It therefore came as a surprise when Ortofon recently introduced the Project brand into this country, especially as pricing for these turntables falls into the dwindling budget-mid price bracket.

However, Ortofon were pretty confident of success and it's not hard to see why when one looks at the range. To succeed, these turntables need to be special in some way to catch the market's attention - and they are.

These Czech-built turntables offer superb value for money and real credibility to the enthusiast, thanks to the machines being eminently 'tweakable'. What's more, all the decks are available with an Ortofon cartridge at a subsidised price, making them even better value.

Being the enthusiasts that we are, we went for the top of the range Project 6 with enough adjustables to embarrass decks costing three times as much. The Project 6 signs in at £349.99 without a cartridge, or £399.99 complete with Ortofon MC 15 Super II, as tested here. When one considers that the MC 15 is a pretty good cartridge in its own right at £100, you don't need to be a mathematician to work out that the whole package is a good deal.
plinth and sub-chassis, which taps into a silicon-fluid filled trough. What this means is that the turntable's sensitivity to vibration can be adjusted to suit differing supports and floors. The high quality ground belt (a spare is included) fits around a plastic sub-platter, which bears a heavy, dynamically balanced platter. On top of this sits either a glass or thick felt mat, or both. Even a screw-down record clamp is included, although I'd rather have an English instruction manual than the German one I was supplied with. To someone who has never taken a-0-level German it made the operation of setting the thing up more difficult than it should have been (I hope this was a one off, Ortofon!).

On to the arm. This features a thick arm tube with a fixed headshell. As well as the usual tracking weight and anti-skate adjustment, the '6 features adjustable tension bearings and azimuth adjustment to allow for cartridges with uneven top plates to be accommodated. If all this sounds a bit daunting, don't panic! Even with the German instructions I found it quick and easy to set up, and the time spent tuning (not a difficult task) was well worth it. The build quality is above average with only a few black marks (such as the cheap and exposed mains cable grip) preventing the deck scoring as highly as the British competition. Once set up, the Pro-ject 6 does have a certain charm, managing to avoid the 'lump of wood' look of many competitors, although it hasn't got the head-turning ability of something like the Michell Syncro.

The '6 ousted my usual Manticore with modified Rega arm and OC7 cartridge from its Sound Organisation Z022 table with Ruark Sound Barrior; to be plugged into a modified Meridian phono amp, with Silver Sounds and Omega cables, as well as the one supplied, and Celestion SL600 speakers via a rather flimsy SME arm. Quite simply, the sound quality of the Pro-jec-t 6 would give anyone who's just bought a £400-£500 CD player a nasty shock. There will probably be a few raised eyebrows amongst British turntable manufacturers too. Dire Straits' 'My parties' was the first track I listened to, and the sound was so involving that I ended up listening to the whole album! A critical ear would notice a slightly loose bass and occasional veiling of the saxophone, although removing the record clamp did improve this, but in the context of class competitors the technical presentation still rated very highly. Surface noise rarely became obtrusive and the sound stage was first rate, with plenty of information at the extremes of the stage.

Vocals were natural and had little trouble projecting themselves from the speakers. The higher frequencies were handled just as deftly. The combination of the 6 and MC15 provided a detailed and lively top end, whilst avoiding sounding uncouth in an effort to retrieve too much information. However, in some systems, the treble could be a little 'cutting' although it would be unusual to find refinement lacking in such a cartridge.

The best part of the sound, though, was that it always seemed to be in sympathy with the music being played. The Dire Straits album had real drive and foot-tapping rhythm, which made the music involving - as it should be. Changing to Steely Dan's 'Pretzel Logic' caused the apparent character of the turntable to alter.

The bass was lean and fast and the vocals showed superb articulation that even gave my turntable, worth twice that of the Pro-ject, a run for its money. With Copland's 'Fanfare for the Common Man' and 'Appalachian Spring', there was a sense of easy and uncompressed dynamics. The music always remained vivid and colourful, in the best sense of the word, and strings were well separated from brass, although they could occasionally sound a touch grainy. The broad soundstage and sheer scale of the '6 suited large orchestral pieces, just as it had suited rock performances.

To test if the upbeat and slightly forward presentation could become appealing to enthusiasts with endless tweaking capability. At the same time it's easy to set up and use. It looks good and is reasonably well built, although there is room for improvement here.

All this would be totally academic if the '6 didn't sound good. Yet here again it passes with flying colours, and for once I can actually recommend a product which favours no particular type of music and is at home with albums ranging from Bush to Brahms and Beethoven to The Brand New Heavies.

Whatever the music, you can be assured that the Pro-ject will give its best, which may not always be perfect - its slight forwardness and occasionally tuneless bass see to that - but involvement and rhythm are always high priorities. For those looking to build up, or explore existing, varied record collections, the Pro-ject 6 makes an excellent choice and comes highly recommended.

---

**Pro-Ject 6 Turntable** with Ortofon MC15 Super II

**Price:** £349.99

**Cartridge:** £399.99

Ortofon UK Ltd.
Chiltern Hill
Chalfont St Peter
Bucks SL9 9UG
Tel. 0753 889949
Enough is enough; sixteen bits is more than enough! I'm tired of hearing how CD needs more 'bits'. In reality, the performance of 16 bit audio is more often limited by effects like sampling clock jitter than by an inherent lack of resolution.

Several years ago I opted for DAT mastering in my home recording studio. Originally this was because DAT was more convenient than quarter inch, but the addition of a high quality outboard DAC has meant that my beloved Leak valve monitoring amplifiers have finally had to be retired as they proved to have small, but intolerable levels of hum and hiss and inadequate headroom. Similarly, all discrete class A mixer electronics have had to be built and commissioned in order to keep the signal path as clean as possible.

In my experience, 16 bit digital audio when it's working properly, pushes analogue circuit performance to the limit, not the other way around!

In order to illustrate how good 16 bit audio is in a domestic situation, I have drawn Figure 1. The lower curve indicates the room noise in dBA SPL, in relation to frequency for an average room.

This is typical of my living room which is in suburban London and faces a busy road. Notice that the noise level is predominantly low-frequency, a sign that the majority of the noise is mechanical in origin. The nearly parallel line above this indicates the masking threshold. Essentially this illustrates the intensity, in dBA SPL, to which a tone of the indicated frequency would have to be raised in order to become audible. On the right hand side of the graph I have indicated the amplifier power necessary to achieve a given sound intensity assuming loudspeakers sensitive enough to produce 85dB SPL at the listening position for 1 electrical Watt input, which is an average value. In the middle of the graph I have indicated 1kHz tones at various intensities relative to the maximum signal output from digital source (so-called 0dB FS for 0 decibels full scale, all smaller outputs being a 'minus' signal level below this reference).

I have made an assumption that the listener will listen at levels which peak at 110dB SPL. I do not believe most people listen at this level, and there may be good reasons for not so doing: permanent hearing damage caused by exposure to loud sounds is related to total sound energy over time. An exposure to a sound level of 90dB SPL for eight hours is considered by the EEC to be just within safety limits, 93dB SPL is permissible for four hours, 90dB SPL for one hour and so on. Exposure to sound levels of 110dB SPL causes permanent hearing loss within two minutes, so 110dB SPL peak levels should be occasional crescendos.

Figure 1 reveals some interesting facts. For instance it shows that the minimum amplifier output power in my domestic situation is 300watts! It also demonstrates the level of acceptable distortion I require from my amplifier. To ascertain this I have assumed that distortion produced at, and below, full output should always remain below the room-noise masking threshold. In practice distortion levels much higher than this can be tolerated due to the original sound 'masking' the distortion. (I have drawn the change in masking level in the presence of an 85dB SPL tone on Figure 1 in order to demonstrate this).

Nonetheless, the purist argument that the ear can detect minute forms of distortion in the presence of a music signal is, perhaps, foolish to ignore. Figure 1 suggests that second and third harmonic distortion products must be at least 80dB below the level of the original tone (i.e. 0.001%). Higher harmonics up to about the thirteenth should be below 90dB (i.e. 0.003%).

In the middle of Figure 1, I have drawn the axis for 1kHz tones produced relative to the maximum output from CD. Look at the -90dB tone which is the quietest 'sound' a CD can produce - usually with about 30% distortion. This signal is well below the masking threshold for the room and is, therefore, distorted or not completely inaudible! It illustrates too, that the 90dB FS signal is amplified enough so as to become audible peak levels would theoretically need to reach 120dB SPL which would require an amplifier of about 3000w. Such a system would be capable of causing permanent hearing damage within 7 seconds!

Couple my dynamic range example with other knowledge about a first class digital audio source (flat frequency response and virtually no wow and flutter for a start) and it adds up to prove that digital audio places stringent demands on the audio system. In my case amplifiers with at least 1.5kW/channel power output, distortion below 0.003% at all levels below overload, a signal to noise ratio of better than 110dB so as to be below room-noise and loudspeakers with a level frequency response from 10Hz to 20kHz yet capable of producing 120dB SPL peak levels. Do you still believe it's digital audio which has to get better?

Left by Richard Brice
The hi-fi industry is in a bit of a mess right now. Nobody seems to know what to do next to bring us out of recession. Many have pinned their hopes on AV; not a week goes by without a press release arriving concerning some new shielded magnet loudspeaker, or multiple channel amplifier with more lights and controls on it than a small space station.

Some are looking towards the car industry; Goodmans produce a vast number of drive units for in-car audio and KEF have just re-worked their top flight in-car 'speaker system.

But who is innovating? Who is doing something new or exciting that will appeal to simple hi-fi buyers? There are very few manufacturers who are actually doing any innovative work it seems to me; the majority are rehashing old models.

Sadly, because of the recession, AV has been seen by many manufacturers as a route out of the rut they've got into with hi-fi. Rather than solve the problem of low sales by introducing a new high-tech, unique and appealing loudspeaker that people will more want to buy than lacklustre rival products, manufacturers have chosen what they see as the easy route out. Shield the magnets of a few of the better 'speakers in their existing range and badge them 'AV ready', 'AV' 'speakers are no more suitable than any other miniature, apart from being able to be used right next to a TV, rather than a couple of inches away.

Of course, this has happened before. When CD first arrived it was top of everybody's shopping list and was certainly more important than a new amplifier or speakers. This created a potential problem for amplifier and speaker manufacturers. However, the situation took a turn for the better with amplifier manufacturers when people started to buy new amplifiers merely because they had CD inputs marked on them (a CD input is no different from a tape or tuner input!). However, the wily salesmen of the speaker industry soon found a solution to the problem - it wasn't long before 'speakers started appearing with 'CD ready' tags. In most cases only minor changes had been made, but consumers took the bait. None of this, however, is the sort of true innovation that I believe we need.

There are some innovative manufacturers out there, but they are few and far between. The three that spring to mind are all innovative in the digital domain of hi-fi: DPA Digital, Pink Triangle and Micromega should all be complimented for the significant advances that they have made in CD over the last few years.

With loudspeakers. It is really quite sad that box after box arrives from large and reputable manufacturers with little, if any, improvement detectable. Yet in loudspeaker drive units there is plenty of innovation going on. Morel produce a range of special hi-fi units that have Damped Polymer Cones (DPC) and Neodymium magnet systems, Audax have just revealed several new bass units using a special High Definition Aerogel (HDA) cone which is extremely light and rigid.

Many manufacturers will find them just too expensive. Others will put them in a wooden box with a crossover network. This might seem like the only thing to do, but think for a moment. Over the years, drive unit technology has advanced, but two simple constraints still exist: the box and the crossover. Has anyone seriously tried to solve the problems of an open baffle loudspeaker, or researched motional feedback?

One company that has shown innovation with loudspeakers is Quad. Look at the results they get, the ESL-63 is still selling now in 1993. What is there to rival them, even now after 10 years on the market?

Tannoy are making an effort with hexagonal cabinets and special ICW capacitors for the treble in their affordable range, and Dual-Concentric drivers in their new Definition series.

KEF have their Uni-Q driver, but you'd expect a little more from our most reputable loudspeaker manufacturer over the last decade than one reasonably interesting drive unit.

Celestion really stormed the market five years ago or so with the SL600 using an Aerolam cabinet and high tech drive units, plus a dipole subwoofer to match. Where are they now?

Dominic Baker

dB on the level

There is a lack of fresh ideas and innovation in the industry at the moment. Maybe with the decline of interest in hi-fi and the loss of the young hobbyist/enthusiast due to their exclusion by the industry, manufacturers no longer feel the need to produce interesting and exciting products. Instead they think they can use clever marketing and competitive pricing to sell to the consumer. I doubt it.

Harman's new LS 0300 loudspeakers are, at $200, really something. They use a high tech glass fibre bass cone and a smooth fabric dome tweeter. Yet Celestion's latest rival model, the 7, uses a cheap-looking 'felted-fibre' (paper) bass unit and a metal dome tweeter. When Noel measured it he found that the crossover wasn't even properly engineered. I suspect that Harman's reps will have a considerably easier time selling the LS 0300 than Celestion's will with the 7s.

The recession will never lift, and sales will never increase for these manufacturers lacking innovative and appealing products. Moving into AV and car stereos will not save the U.K's loudspeaker manufacturers; they'll merely find themselves in a different and more cut-throat market where high efficiency mass-production and robustness of product reign. But perhaps these superficially attractive volume markets are already subverting their outlook - and that's why we are not seeing good, new innovative loudspeakers any more. Models that would end the recession tomorrow.
Noel Keywood auditions the smooth-looking Sony TC-K311 budget cassette which offers auto-tape tuning on a shoestring.

Perhaps with DCC and MD hovering uncertainly on the horizon of popularity, now is not the time to be sinking money into the old technology both seek to oust. On the other hand, if you have to buy a new tape recorder, then cassette in the form reviewed here offers the cheapest of the three options. Sony’s new TC-K311 cassette deck is smart looking, functionally simple and inexpensive at £149.99.

From a distance this deck looks as if it might carry a healthy price tag, its lines and finish are so smooth and well balanced, but that’s Sony. They have always managed to avoid the visual clutter of rival machines, whose legends and awkwardly visual arrangements sometimes make them look like fugitives from an amusement arcade. The 311 is so discreet it’s hard to spot that it has automatic tape tuning - rare in a deck of the price. Tests showed it performed reasonably well too, even with metal tape. Tape tune systems have their own drawbacks, and Sony’s is no exception, but for the hands-off user it takes the bother out of manual tuning and does, I found, give a reasonably balanced sound from recordings, irrespective of the tape used. But some minor limitations have to be accepted. Manual tape tuning, using a bias adjuster, might be fiddly, but it leaves a user free to choose any preferred tonal balance. Auto-tuning removes options and on this recorder I found it tended to give a consistently bright sound, especially with metal tapes. The only way of fooling it was to put in a ‘bright’ tape (e.g. TDK MA-XG), causing bias to be increased greatly, then pop in an ordinary tape, like TDK-MA. The high bias setting would then give a warmer sound from MA. It is only realistic not to expect too much from what has to be a simple tape tuning system, especially on a two-head deck where the tape must be recorded and replayed in separate passes during the calibration procedure before bias can be set. This limits its resolution. Only with ferric tapes like TDK AR did a softer sound emerge, but since the recorder exploited ferrics better than metals, this wasn’t inappropriate.

Like many budget recorders, the 311 has a single head, and it had limitations. Recording onto metal tape, strong distortion sets in above 0.5VU, a low level. Even though the record level indicator suggests this machine can hit +8 with metals, I measured 10% distortion at this level and found the sound became messy and both splashy and compressed on transients in use, so it’s wildly optimistic. Pulling record level down to 0.5VU maximum on musical peaks cured this, but then hiss became commensurately more obvious. It’s best to be a realist with budget decks; they commonly work best with ferrics and chrome, and the TC-K311 is no exception.

Metal tapes maintained treble clarity, within the closely miked guitar strings on Matt Johnson’s Dusk album, for example, which sounded sharp and vibrant. There was some coarseness in the sound though, probably due to flutter and saturation distortion acting in conjunction, and I was aware of a degree of hard brightness. Low-ish record levels demanded the use of Dolby B for Rock and C for classical. TDK AR ferric tape often gives the best results on decks with mediocre heads, since it demands so little bias signal. The TC-K311 blossomed in the bass and across the mid-ranges with this tape, but as is so often the case, except with the better Nakamichis, treble sounded muted and smudged. This tuned violins into a warm mush behind Ashkenazy playing Rachmaninov’s Piano Concerto No2, but the piano sounded stable enough. Hiss became obvious in the more restrained parts of his performance too, demanding the use of Dolby C.

Pre-recorded tapes came across well enough. That treble was being suppressed with Dolby switched in was obvious, but although the deck then sounded warm and...
rounded in its treble, it did not sound overtly muffled. However, the deck sounded clearer generally, if hissier, with overtly muffled. However, the deck to not set exactly right.

The replay equalisation and head azimuth are Dolby B out, as is so often the case when rounded in its treble, it did not sound

**MEASUR ED PERFORMANCE**

With recordings onto metal, chrome or ferric tapes, frequency response after tuning looked much like that for metal tape, shown in our analysis. The tuning system in most instances gave treble lift, which results in a bright sound.

Although the head has a flat frequency response, tests showed it was unable to get high record levels onto metal tape. This deck works best with ferrics and chomes.

Treble loss in the replay amplifier produced a replay frequency response characterised by a slow treble fall above 6kHz. This results in a dull sound with prerecorded tapes, especially with Dolby B engaged. The replay and record amplifiers were quiet though; hiss and hum measured low.

Sony have used a respectable single-capstan transport, one with little drift or wow (low rate speed variations). The spectrum analysis shows some flutter peaks, but they are limited in amplitude and won't coarsen the sound too greatly.

The TC-K311 measures well, but it is not exceptional. It will make bright recordings, but sounds a little dull with pre-recorded tapes, like so many budget decks lacking careful final adjustment. It doesn't utilise the properties of metal tape well, but it does give reasonably good results with ferrics and chomes. NK

**REPLAY (pre-recorded tapes)**

<table>
<thead>
<tr>
<th>Frequency response</th>
<th>(-2dB) 30Hz-2kHz</th>
<th>(+0.5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed accuracy</td>
<td>-59dB</td>
<td></td>
</tr>
<tr>
<td>HisS (70uS, Dolby out)</td>
<td>-59dB</td>
<td></td>
</tr>
</tbody>
</table>

**RECORDING (blank tapes)**

<table>
<thead>
<tr>
<th>Frequency response</th>
<th>(-IEC Primary Refs.) 30Hz-2kHz</th>
<th>(+IEC Refs.) 2kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed stability</td>
<td>-55dB</td>
<td>-4dB</td>
</tr>
<tr>
<td>Distortion</td>
<td>3.5%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Hiss (70uS, Dolby out)</td>
<td>-48dB</td>
<td>-48dB</td>
</tr>
<tr>
<td>Speed variations (DIN total)</td>
<td>0.08%</td>
<td>0.08%</td>
</tr>
<tr>
<td>Flutter energy (3-3.1kHz)</td>
<td>-22dB</td>
<td>-22dB</td>
</tr>
</tbody>
</table>

**MOL/SAT (IEC Refs)**

| IEC I (ferric) | 2.5dB/5dB |
| IEC II (chrome) | 1.5dB/4dB |
| IEC IV (metal) | 0dB/1dB   |

Yes, it's time to deck the halls with hunks of holy, and your favourite magazine will come filled with festive gift ideas and reviews, the latest new releases, the occasional snowman, accessories, World Audio Designs, and much, much more. It's all here; an entire stockingfull of things to read about and hear; including a few real crackers, such as:

**GROUP TEST OF STARTER SYSTEMS**

Everything you need to know about pushing the innocent young things of your household down the slippery slope to 'upgrade-itis' with their first serious system. We take a look at what's on offer 'upgrade-itis' with their first serious household down the slippery slope to pushing the innocent young things of your

**TANNOY D100**

Exclusively to the pages of this illustrious (or, at least, illustrated) journal come Tannoy's latest addition to their "Definition" range of loudspeakers, the dual-concentric D100s.

**DENON TU-S80RD**

The latest tuner from Denon comes fully equipped with RDS to give you something to read whilst you listen. We put it through its paces.

Not only that, but all the usual advice, opinions, news from the industry, the competition, Rudolph the Reindeer's review of headphones, and a whole lot more. Possibly more than any other magazine, but, we promise you, no Christmas turkeys!

**IT IS THE CHRISTMAS ISSUE!**

Tannoy's latest addition to their "Definition" range of loudspeakers, the dual-concentric D100s.

**Hi-Fi World**

Please reserve/deliver Hi-Fi World on a regular basis, commencing with the next issue, until further notice.

**Address:**

**Name:**

**Signed:**

**Date:**

* Delete as appropriate

Distributed to the news trade by COMAG MAGAZINE MARKETING
Like many of the UK’s hi-fi producers, Orelle seem to hover at the edges of mainstream acceptability, attempting to produce that elusive world-beating formula which will set them apart, conferring Linn/Naim status. In the meantime, they are producing solid, workmanlike products. If the CD160 is going to thrust them into the spotlight, it has its work cut out. Retailing at £749 (although, on special offer, £200 less at the moment), it is pitched against firm favourites such as the Quad CD67, so the competition is pretty fierce.

Removing the CD160 from its packaging, it looks, at first, as though it is already a little old to offer much in the way of competition. I felt the styling of the player is dated. It has a large metal fascia scrolled round at the top and stepped back at the bottom, reminiscent of many early ’80s designer products. The drawer bears the legend ‘CD160’ in gloss grey against the matt black finish, and once opened, it reveals a plastic disc tray hidden behind the solid metal front plate. Control buttons are positioned on the fascia at differing angles, some horizontal, some at a slant, but the display panel is large and easy to read. In a nutshell, I felt it looked a little haphazard in its styling.

"Drums and strings were hammered out with good force and rhythm, and kept going through even very complex passages, tight and in tempo at all times."

The sound of the machine is similar in tone to the visual aspect. My first impression was of a capable enough machine, with solid, controlled bass very much in evidence, and an adequate, but...
this is such an inoffensive sounding player. The Orelle shied away from attacking the notes, presenting them gently but firmly, and it was this shyness which drew the teeth of the performance. It allowed the music to gravitate towards a soporific, rather than relaxing, presentation.

In detail and starting with the bass, drums and strings were hammered out with good force and rhythm, and kept going through even very complex passages, seeming tight and in tempo at all times. The player gave good bass extension to my system, which is generally slightly lacking in this department. Where required, the CD 160 produced a vibrant, throbbing line to support the music, although it was also capable of surprising subtlety, enabling the bassists in several recordings to stand alone and play separately from the drums rather than be swamped by them, as is usual.

The midrange was clean and clear in general, although it had a slightly gritty feel to it in certain circumstances, such as with exceptionally clean pipes and synth passages, these being less smooth and supple than usual. Generally, though, it carried the midband acceptably well, with presence and rhythmic stability very much in evidence. The treble was where this player had a tendency to fall down. The notes were lacking in attack, being delivered without the punch and vibrancy expected of a player in this price range. From large orchestral works down to single female vocals, the treble remained dull and lacklustre, seemingly never breaking into song. Triangles in the larger works also sounded dull and on vocals, such as the Tallis Scholars' Allegri Miserere', the notes failed to decay with their usual organic grace.

Imagery and soundstaging were average for a single-box player. But the CD 160 failed to impress when outboard converters are taken into account as competition. Some that have recently graced my system have presented the music with more spaciousness - I'm thinking of Select Systems Dacula and DPA Little Bit II - seeming to push the stage out beyond the physical confines of the room. The Orelle, on the other hand, held the image on a tight rein, squeezing whole orchestrinas into the space between the 'speakers, and the positioning of instruments was consequently unconvincing and muddled, interwoven and veiled, rather than being portrayed openly with space to breathe.

Overall, the Orelle came across as a capable enough machine, with the ability to reproduce music without aggression or sharpness. Whilst the reproduction of the music was in all ways solid and workmanlike, the Orelle seemed to be one of those players which simply translated information, rather than allowing music to play. It lacks the panache required to lift it out of the herd, and at this price, where there are so many good players and DACs, this ordinariness weighs heavily against it.

### Frequency Response

![Frequency Response Graph](image)

- **Falling upper treble**

### Distortion

![Distortion Graph](image)

- **Extended distortion harmonics**

---

**Table: Test Results**

<table>
<thead>
<tr>
<th>Frequency (kHz)</th>
<th>Distortion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08</td>
<td>0.011</td>
</tr>
<tr>
<td>0.10</td>
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<tr>
<td>0.31</td>
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<tr>
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<td>0.014</td>
</tr>
<tr>
<td>1.00</td>
<td>0.014</td>
</tr>
<tr>
<td>2.00</td>
<td>0.014</td>
</tr>
</tbody>
</table>

**Dynamic Range:** 97 dB

**Nominal Signal Level:** 1.6V
Moorgate Acoustics bring home theatre to Sheffield

Home entertainment is changing. With the introduction of Dolby Pro-Logic it is now possible to turn your front room into the Odeon Leicester Square

At the end of September, Moorgate Acoustics will open Sheffield's first ever Home Cinema demonstration facility in its recently extended Fitzwilliam Street showroom.

The area will feature three main demonstration areas, offering permanent systems set up to show what can be achieved in the home from the humble video recorder or satellite broadcast. Each area will be decorated to simulate a normal lounge where people can relax and hear for themselves the future of home entertainment.

At Live '93, almost 200,000 people were treated to the latest in multi-media technology. The show's organizers say that the greatest interest was in the Home Cinema related products.

Moorgate Acoustics 13 years of experience in supplying the best audio systems gives them a wealth of experience to draw on when putting together and installing Home Cinema systems in customers' homes. This experience can eliminate the pitfalls involved with complex audio video equipment.

The showroom will feature a wide range of equipment, from complete systems to components which can simply be added to customers existing audio systems with little fuss.

Most significantly, the visitors to Home cinema showroom will discover that watching their favourite movie or a concert video will never be the same again.

For more information or to receive a preview demonstration contact; Paul Hobson on (0742) 756048
W

With Hi-Fi World having a room as well as a stand at Penta this year it was all hands on deck; I was one of the hands. Penta was a completely new experience for me. The nearest I'd got to a hi-fi show before was a dealer-run event at Bolton - and even then I was just an ordinary punter. This time I was on the firing line, with all my knowledge of hi-fi about to be ravaged by those who'd been in the industry longer than I'd been born, and enthusiasts who could lose me with "tech talk" within seconds. As you can see I was rather apprehensive about the whole thing, even though I meet the public every day in a hi-fi dealer's.

Wednesday is when it all begins for the magazines and trade, with the setting up of equipment in the hotel rooms. My colleague and I hadn't made the best of starts by heading off in completely the opposite direction to the offices, from Maida Vale tube station. By complete chance, Dominic Baker drove by and stopped us before we'd strayed half way across London!

For most manufacturers, the Wednesday before the show is to be spent setting up and fine tuning the equipment - but not at Hi-Fi World. Come Wednesday morning and we were still waiting for the KLS-l loudspeaker cabinets to arrive from the sprayshop - unbuilt! Noel was at the early stages of constructing a K5881 valve amplifier and somewhere there lurked a very special Garrard 401 that had to have its celebration Garrard SME IV arm fitted - when we collected it from the SME room at the hotel.

Great relief when the rushed prototype cabinets finally arrived at about 2pm. They weren't quite the piano gloss black we'd had in mind; more of a blackboard matt, but it was too late to argue; they'd just have to do, and with clever lighting they didn't look too bad at all (even though the lack of Blue Tak and masking tape on the mid-range proved a disappointment to many).

We hastily drove off vaguely in the direction of Heathrow and to our surprise found the Ramada hotel quite easily. As we threw everything into the room we looked on with envy at those who were already up and running. Mind you some had been there from about seven in the morning!

It wasn't long before we had a system up and running, and the room looking something like reasonable. Unfortunately, "a system" was based around some well travelled Heybrook Quartets sitting on CD racks as speaker stands. There was no getting out of it, the KLS-1s had to be built, and built fast! It was about 4.30 p.m. and we realised that only one cabinet had carpet felt in it. If there's any one out there with a carpet warehouse looking to expand, then Heathrow's your place! We drove for miles trying to find elusive carpet felt. We got nowhere and, in the end, ended up using a similar alternative from a packaging specialist.

Eight hours later (1 a.m. for those counting) we finally had a decent CD based system (well we've always said what a user-friendly kit the KLS-1s were!). The sound wasn't especially good to begin with, the bass began sounding as about articulate as Paul Keating, but with a little running in and repositioning we started to get somewhere. By the time we left, even the most asbestos-lined kidneyed rep and trademan had vacated the bar and were tucked up in bed.

"Thursday was the first trade day, and most exhibitors that I've spoken to since thought it to be the best. By the afternoon we had the Garrard up and running, with thanks to Otrofin for loaning a MC2000 cartridge. This drew much attention, as much for the special SME arm as for the marble based plinth.

Whilst the Garrard drew the punters attention, I was drawn by the sheer diversity of nationalities and types of punter. The "anoraks" sporting thickly rimed glasses and handfuls of literature were expected. What I hadn't expected were the hordes of Japanese clutching their mammoth Canons, taking pictures of everything that moved - including us, to our bewilderment. There were Germans, French, Americans, Italians, Scandinavians. Portuguese and probably a whole host of others I didn't get to meet. Physical proportions went from every extreme one could imagine, as did dress sense which ranged from "Major grey" suits to the most bizarre multicoloured outfits with hairstyles to match.

It was nice to see that all ages were truly represented. I defy anyone who says that young people simply aren't interested in hi-fi any more because of computer games. Whilst computers have diverted many away from hi-fi during the eighties, there is still strong enthusiasm amongst many who have been born into the computer age.

Whilst all this was going on I was scuttling down to the car park to move the car every three hours to avoid the fee! It worked on Thursday, but I couldn't get away with it on Friday when an over-zealous attendant put a stop to my antics. In the end I had to pay £6 and be shuttled towards the hotel.

Still, at least I didn't find myself too out of my depth when speaking to "the trade", banished any ideas of taking arm loads home with me. Undoubtedly, the star of the show for me proved to be the Cabassas Atlantis MC speakers. The word is often misused, but it would not be exaggerating to describe the MCs as truly awesome. The only way of describing these speakers is like a pair of massive (eight foot high) white triangles with football sized eyeballs. The dynamics were so realistic that they almost seemed an exaggeration of the real thing.

In the afternoon we opened the door and the room was literally full within minutes. The High Definition speakers made an excellent partner for the K5881 amp, and the smallish room suited the system better than it had the larger three-wayers. Once again the time just flew by until it was time to go home. We said our goodbyes and set off "up North". I was needed at the small hi-fi shop I work at in North Yorkshire so I couldn't stay for the public days. Needless to say, returning to work brought me back to reality with a thump. Yet I was glad to have experienced a hi-fi show from the other side of the fence, and look forward to future events with rather less apprehension ●

Dominic Todd

My first Penta. Doing the Ramada

In fact, for the most part I found I actually enjoyed the day.

Friday morning found the Hi-Fi World room to be closed. One look inside and it was easy to see why! Dominic had picked up the KLS2 loudspeakers the night before, and wine, wool, drive units and assorted tools lay sprawled across the floor. There was no getting out of it, the K5881 valve amplifier which Noel had completed the previous evening. Cold heartedly I left Dominic to it (although we did help with some bits at the end) and went to have a look around the rest of the show.

It was pleasing to see valves and vinyl in such prominence, even though the price tickets of some soon
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3) The Harman Kardon LS 0300 loudspeakers use what brand of tweeter?
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4) The Harman Kardon loudspeakers were compared favourably with what other loudspeaker in our test?
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Our prize this month is the Rose pre and power amplifier combination, along with the Harman Kardon LS 0300 loudspeakers which graced the cover of our November 1993 issue. Although the Rose RV-23S pre-amplifier has been around for some time now, five years to be precise, Rose have only just launched the matching power-amp to complete the combination. The pre-amp is a valve/transistor hybrid with a facility for bi-amping, switchable Moving Magnet/Moving Coil phonos, and four line-level inputs as well.

The RP-190 power amplifier on the other hand, is a pure transistor device which delivers 78w into an 8ohm load, has two pairs of 'speaker outputs for bi-wiring, and can also be used as a monoblock, in which mode it will deliver 100watts.

Reviewing them together, Dominic Baker mentioned the "large, solid and believable soundstage with plenty of atmosphere" which he heard from this amp combination, as well as its general sound, which he said was "relaxed and easy to listen to, with a clear and open midrange and a delicately detailed treble" and a bass which is "rich, smooth, big and flows out across the carpet to engross you".

The Harman Kardon 'speakers, the LS 0300s are, at first glance, uninspiring boxes, being finished in black ash veneer with a matching black cloth grille. However, remove the grille and the bright yellow Audax drive units shine out like a beacon, below a soft-dome tweeter which is also an Audax unit.

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Dominic reviewed these as well, saying that "they produced a large, full-bodied sound that would push outwards to fill all four corners of a room", and compared them favourably with the Heybrook Quartets, which retail at twice the price of the LS 0300s!

That's the system you'll be competing for: Rose RV-23S pre-amplifier, RP-190 power amplifier and a pair of Harman Kardon LS 0300 loudspeakers. So if you want to upgrade your system, sharpen up your pencils and get writing!
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In the event of more than one entrant submitting all the correct answers, the winner will be decided with a tie breaker. We will endeavour to publish the results in the February '94 issue. Audio Publishing Ltd. reserve the right to publish such entries or parts of entries as the company sees fit. We regret that photocopies or facsimiles of the entry form cannot be accepted. No correspondence about this competition will be entered into and the Editor’s decision is final. Employees of Rose Industries, Harman Kardon, and Audio Publishing Ltd may not enter.

Audio Visual System Delivery
July Issue Competition

Mr Graham, of Cheltenham, Gloucestershire, took delivery of his prize from our July competition, a Kenwood/Celestion audio visual system recently. It's something of a double prize, we hope he enjoys listening to AND watching it.

Morel Bassmaster Winner
September Issue Competition

The lucky winner of our competition in the September issue, the prize for which was a pair of Morel Bassmaster loudspeakers, was Mr J Clarke of Milton Keynes. We hope he'll enjoy listening as much as we enjoyed reviewing them.
The Wonder Stuff’s fourth long-player re-unites them with Pat Collier, who produced their first two albums, but if that meant at first suggest they’re trying to capture old glories, this is being more than unfair to their previous disc, the frequently sublime ‘Never Loved Elvis’. Perhaps that’s the key word; ‘frequently’.

‘Construction’ is frequently, if not totally, inspired; i.e. it’s still not the classic disc this special conglomerate have always threatened to come up with since their early singles and debut L.P. ‘The Eight Legged Groove Machine’. Still, Miles Hunt and Co. are now established as one of our leading pop combos, and this latest offering will be no major disappointment to their - no doubt ever-expanding - fan base. Items like the zip-zip-zippy ‘Cabin Fever’, or the righteously angry ‘I Wish Them All Dead’ (a rant against a U.S. paedophile group) have all the fire and energy that made the band stick out in the first place, all this allied with an ever-deft way with a tough and memorable tune, while ‘Full Of Life (Happy Now)’ and ‘Storm Drain’ are among the best songs The Who and The Jam never wrote.

On the other hand, there’s a tendency towards the tried and tested that’s a mite disappointing to the more discerning listener - ‘Hush’ has all the WS trademarks but still comes dangerously close to self-parody, while by comparison, ‘Swell’ is both typical and exhilarating at the same time.

But is this enough? It can be no accident that the standouts here include ‘A Great Big Drinker’, Hunt’s tribute to writer Charles Bukowski, with its strong hint of what used to be called Swamp Rock, or the closing ‘Something For Sammy’, all lonesome violin and sparse arrangement. Shame it’s so short. Still, the great majority of Wonder Stuff fans should be more than pleased with most of the new record. For my part I think I’d get more lasting wear and fun from one of those ‘IDIOT’ T-shirt’s Miles Hunt wears all the time these days. Is he trying to tell us something?
RECORD OF THE MONTH

THE LEMONHEADS
Come On Feel The Lemonheads
Atlantic 7567 82537-2

There can be no doubt by now that Lemonheads' singer/writer Evan Dando is 'Rock '93 Man Of The Year', pipping even Nirvana's Mr. Cobain at the post (anyway, he got his gold star in '92) and this latest disc more than confirms the power, not to say the sheer pop brilliance of the man's work.

You should, I hope, be well familiar with this band by now, particularly after their previous album/singles chart incursions with 'It's A Shame About Ray' and the cover of Paul Simon's 'Mrs Robinson', not to mention the fact that Dando's been on every pop rag cover umpteen dozen times lately with his tales of decadence and dismay.

What really matters about Evan Dando is that he writes damn good songs, and there's a plethora of them on this new disc. There's the Belinda Carlisle-assisted 'I'll Do It Anyway', all lovely and loveable in extremis chorus, delicate lead guitar and chugging bubblegum rhythms - one of several cautionary tales - or the wry meditation on fame and celebrity (of all sizes - dig the bit about the cigarette girl!) that is 'Paid To Smile'.

Dando's much-touted admiration for great lost country-rock pioneer Gram Parsons is more than obvious on the instant cowboy classic 'Big Gay Heart', featuring former GP sideman 'Sneeky' Pete Kleinow and his, as usual, magnificent pedal steel work. But my own personal favourite is 'Style', a wry bit of rebel-rock that comes in two versions, one all-rockin' thrash guitars and blitzing drums, the other a slow-burning sex'n'soul variation that's all smouldering keyboards and including contributions from Mr. Sex'n'Soul himself, Rick James. These are neat, amusing little throwaways like 'Lemon' ('If I was a fridge/ Wouldya open the door? If I was a booger/ wouldya blow your nose?' etc) which sounds like Evan's been listening to early Dylan, or 'Favourite T', a love song about a shirt whose owner's moved on. 'Down About It' is the band at their fastest and most rousing, 'It's About Time' shows them at their jingly-jangly best.

If you loved '... Ray', this will send you to heaven; if you've missed both, you're in for some treats. Get hip to The Lemonheads and be reminded how joyful, uplifting, and how sheerly life-enhancing popular music can be. Oh yeah!

TEENAGE FANCLUB
Thirteen
CREATION CRECD 144

'Bandwagonesque', the previous (and second) LP from Scots quartet Teenage Fanclub was my - and a lot of other people's - fave pop disc of its time. Now, at long last, comes the follow-up. 'Thirteen' is not, as some hacks have had the gall to suggest, a deliberate reference to all-time TFC faves Big Star (who had a song of the same name) but a bit of joke: ie third-teen. Geddit?

But enough with the jesting already! The real question is, does this third outing cut the proverbial mustard? For me, at least, that's a hard one to answer, because where 'Bandwagonesque' was a record that one loved and continues to love track by track almost from the word go, this latest effort takes a few hearings before it truly begins to become...
more than a round thing with a hole in it, and starts to assume the status usually accorded to a good friend and/or member of the family.

Which is a long-winded way of saying that it’s what we hacks usually refer to as a “grower”.

By having the bare-faced effrontery to begin their third long-player with a direct steal from Marc Bolan, TFC certainly sound like old pals dropping in after a long absence; but that’s just by the by, because a few seconds in we’re on more familiar Fan Club territory, characterised by a strong if frugal melody and sweet, sweet harmonies simply drenched in references to, among others, The Byrds and the aforementioned Big Star. ‘The Cabbage’ (great title, wot?) is pure Byrds-sing-Dylan circa 1966, while the dandelion-delicate harmonies of ‘120 Minutes’ are oscillographic to the aforementioned Big Star, but I have neither the time nor the inclination to resurrect the old chestnut about imitation vs. derivation. The question is: ‘does it work?’

In Teenage Fanclub’s case, it can, and ‘Bandwagonesque’ (a telling title if ever there was one) is the proverbial proof of the pudding. But, ‘Thirteen’ is by no means as instantly effective throughout as its glorious predecessor, so it would be crass and cruel in the extreme to come to any snap judgements where this new offering is concerned, and anyway - as Ben Elton recently observed - comparisons are odorous.

Which brings us none too neatly to the actual musical content of ‘Thirteen’ which is, after all, the only thing that really matters. The short and leisurely ‘Song To The Cynic’, the movingly fragile ‘Norman 3’ or ‘Tears Are Cool’, with its hint of country, are Teenage Fanclub doing what they, and only they, do best. There may be a few instances of overwhelming melodrama, but this remains a record packed with cool power and feeling. Who could ask for very much more?

TINDERSTICKS

Tindersticks

This Way Up LP518306 2

- A motley crew with its half dozen members hailing from as far afield as Birmingham, London, and Nottingham, Tindersticks have just completed a support slot on the recent Nick Cave and the Bad Seeds tour. They’ve just had a few self-made singles out (all to over-the-top critical acclaim), but this budget price double album (at single price for vinyl and cassette versions, while the CD comes in at under a tenner) is their widescreen debut. Principal writer/singer and co-producer Stuart Staples is the main man here, and he has the sort of rich, dark, voice that can’t help but be evocative and atmospheric. A sort of introspective, moody, J.J. Cale for the nineties. The only real disadvantage here is that, with the densely moody production added, it’s all but impossible to work out what Tindersticks are actually singing about ninety per cent of the time. Is it me, or do they really have a P J Harvey-esque thing about blood (‘Tie die’ for example, with its spooky violin fills, appears to be about a T-shirt soaked in olood and then tie-dyed)? While it’s any pervert’s guess what the tellingly-titled ‘Jism’ is actually concerned with.

That said, Tindersticks remain responsible for some of the freshest, most strikingly original sounds to hit my deck in an age, dense, dark, and eerily evocative, and there are wild bits too. All the more shocking for their sudden appearance in a primarily sombre and gloomy canvas. Thus the wildly thrashing organ, guitar, and keyboards of the innocently-titled ‘Milk Teeth’ are shockingly at total loggerheads with items such as the tensely moody ‘Drunk Tank’, or the jagged instrumentalities which make up ‘Tea Stain’, while the alternate English/Spanish narratives of the spoken word item ‘Paco De Rinaldo’s Dream’ make it a worthy addition to that small but chilling catalogue of weird tales including Lou and the Velvet’s ‘The Gift’, The Door’s ‘Horse Latitudes’ and other greats. Something special is happening here, discerning ears please note.

World Radio History
Choral and chamber music predominate this month, with more Bruckner from the Corydon Singers, and generous helpings of quartets and quintets from both Brits and Bohemians. There’s also some seasonal Bach, and a reissue of some evergreen Elgar.

**JOHANN SEBASTIAN BACH**
Weihnachts-Oratorium (Christmas Oratorio) BWV248
Lynda Russell, soprano; Catherine Wyn-Rogers, contralto; Mark Padmore, tenor; Michael George, bass; The Sixteen; Orchestra of The Sixteen; conductor, Harry Christophers
COLLINS CLASSICS 70282 (2 CD SET) (DDD/147.38)

- The Weihnachts-Oratorium was first heard in Leipzig during Christmas 1734 but, unlike today, when we would expect a single performance, its six sections (effectively six separate cantatas) were each performed on different days. The first three cantatas would have been heard between December 25 and 27, the fourth on the Feast of the Circumcision (January 1), the fifth on the first Sunday of the new year, and the last on the Feast of the Epiphany (January 6).

The Christmas Oratorio (and those for Easter and Ascensiontide) is therefore a quite different musical animal from other oratorios such as Handel’s Messiah or Haydn’s Creation. It is akin to the Passions but, given the subject matter, is naturally of a different temperament. The work abounds in exuberant choruses, sparkling instrumental writing, delicious solos, such as that for oboe in part four, and in glorious opportunities for the vocal soloists to shine which, in this recording, they most assuredly do.

Mark Padmore is an excellent Evangelist, Michael George a weighty Herod, and Libby Crabtree a quite delightful Angel. The choral singing, as you would expect from Harry Christophers’ team, is first-class.

Overall, this is a performance of lightness and freshness, more attuned to the tenderness of the music than its exuberance. I miss the joyousness which characterises John Eliot Gardiner’s performance. However, I should add that I listened with increasing pleasure as the performance unfolded; it unquestionably brings out the beauty of the music and is very well recorded, and, like the Gardiner set, this Collins Classics issue has the advantage of coming on just two CDs.

**ANTON BRUCKNER**
Te Deum/Mass in D minor
Joan Rodgers, soprano; Catherine Wyn-Rogers, alto; Keith Lewis, tenor; Alastair Miles, bass; James O’Donnell, organ; Corydon Singers; Corydon Orchestra; conductor, Matthew Best
HYPERION CDA66650 (DDD/67.27)

- There are few more awe-inspiring or thrilling openings in music than the first bars of Bruckner’s Te Deum, and the Corydon Singers’ new recording conveys the majesty of the moment as well as, if not better than, any other I have heard. This standard is maintained throughout, culminating on the mighty double fugue on ‘In te Domine’. Matthew Best, founder and director of the Corydon Singers, expects his singers not only to understand the literal meaning of the texts they perform, but what the words imply and convey, which is perhaps why a moment such as ‘Patrem immensae majestatis’ (The Father of infinite majesty) simply takes the breath away here.

Bruckner began work on the Te Deum in 1881 but laid it to one side in order to concentrate on his Seventh Symphony. He returned to it in 1883 and evidently had a special affection for the work: he once remarked, “When God finally calls me and asks ‘What have you done with...”
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FOLLOWING A TRADITIONAL hi-fi training session in the Christmas spirit. A 50-year-old cabinet-making teacher and his audience were at the professional level. The speaker was giving a talk on the theory of sound, and the audience was listening intently. The teacher was using a variety of tools and machines, including a planer, a drill, and a hammer, to demonstrate the process. The audience asked many questions, and the teacher answered them patiently. The session was conducted in a workshop environment, with the teacher's tools and machinery visible in the background. The audience consisted of a mix of people, including some who were already experienced in cabinet-making and others who were new to the craft. The teacher used a variety of materials, including wood, metal, and plastic, to demonstrate the different techniques. The session lasted for about two hours, and at the end of it, the audience was invited to try their hand at making some small projects under the teacher's guidance.

Hi-Fi World, December 1993
First, there was Lyrita, and only Lyrita. Then the torch was taken up by the independent labels: Chandos, Hyperion, Conifer, Nimbus, Meridian and ASV among them. Now, the ranks of lesser-known, but unjustly neglected British composers are well represented in the catalogue. So is there still a need for a new label which devotes itself entirely to the music of these islands? I have been luxuriating in three recordings which suggest the answer is, unequivocally, yes.

With admirable straightforwardness, the new marque calls itself the British Music Label. You might expect it to be based in a cottage in the Malvern Hills, or in a Suffolk farmhouse, but this label hails from - of all places - Milton Keynes (which is not to knock the spot, it's just unexpected).

The first recordings from the British Music Label - all handsomely presented, I should add - feature the music of Bernard van Dieren, clarinet sonatas by Donald Tovey and York Bowen, and chamber works by Herbert Howells and Frank Bridge. It is this last which I feel amply qualifies for this issue's accolade of 'Record of the month', although that should also be taken as a commendation of the label as a whole, and the enterprise behind it.

The recording engineer for all three CDs was Mike Skeet who gained a fine soloist in Howells's Clarinet Sonata. The Holywell Ensemble offers two performances of this, the first in 1948. In those intervening years, Howells had lost his only son, Michael, to spinal meningitis and the profound grief that he felt came to colour many of his later works. In the Clarinet Sonata, a lyrical piece for exhibitors at hi-fi shows. Now, the torch was taken up by the independent labels: Chandos, Hyperion, Conifer, Nimbus, Meridian and ASV among them. Now, the ranks of lesser-known, but unjustly neglected British composers are well represented in the catalogue. So is there still a need for a new label which devotes itself entirely to the music of these islands? I have been luxuriating in three recordings which suggest the answer is, unequivocally, yes.

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In a very different way, the recording of the Howells and Bridge works is also worthy of demonstration status. Taped in the Silk Hall of Radley College, using a Sony PCM F1 and Sennheisser and AKG microphones, it offers sound of gripping immediacy and crystal-clear focus. Yet the vital balance of the ensemble is always maintained and the performances are bathed in an agreeable, natural ambience.

FRANK BRIDGE
Phantasy for piano quartet in F sharp minor/Phantasie for piano trio in C minor
HERBERT HOWELLS
Piano Quartet in A minor/Clarinet Sonata
Holywell Ensemble
BRITISH MUSIC LABEL BML003 (DDD/78.33)

The tendency is to think of Howells as a composer of choral music and it is true that the glorious 'Hymnus Paradisi' is a masterpiece of the genre. But those introduced to Howells's chamber music through the fine recording on Hyperion of the Third String Quartet will know how he could handle instrumental voices with the same skill and imagination that he deployed the human variety.

Although the Piano Quartet has no descriptive subtitle, it is impossible not to hear the landscape of Gloucestershire and Worcestershire reflected in this music, its gentle, rolling contours, its lush greenery, its fast-flowing rivers, and its hills. Howells - unlike his contemporary, Vaughan Williams - did not consciously use folksong in his music, but works like the Piano Quartet do exude a folk-like air. Yet this is no rustic ramble, but a piece full of ideas, skilfully developed into music that is richly expressive and often rapturous.

Howells completed his Clarinet Sonata some thirty years after the Piano Quartet and it received its first performance in a BBC Third Programme concert in 1948. In those intervening years, Howells had lost his only son, Michael, to spinal meningitis and the profound grief that he felt came to colour many of his later works. In the Clarinet Sonata, a lyrical piece for exhibitors at hi-fi shows. Now, the torch was taken up by the independent labels: Chandos, Hyperion, Conifer, Nimbus, Meridian and ASV among them. Now, the ranks of lesser-known, but unjustly neglected British composers are well represented in the catalogue. So is there still a need for a new label which devotes itself entirely to the music of these islands? I have been luxuriating in three recordings which suggest the answer is, unequivocally, yes.

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In both works, the rhapsodic nature of the music, with its lush, sweeping melodies and highly-charged emotional intensity, tends to mask what are well-organised structures, typifying the well-honed craftsmanship that characterises all of Bridge's music. The Piano Trio supplies a suitably exultant conclusion to this recital, while the Piano Quartet has a more elusive, even haunting quality.

The performances which, along with great technical finesse, display wonderful sensitivity. The music simply flows, imaginatively and persuasively. Peter Nichols - who doubles as co-producer with the violinist, Kate Bailey - is a particularly fine soloist in Howells's Clarinet Sonata. The Holywell Ensemble takes its name from the Oxford concert room which opened in 1748 and, in its time, played host to Handel, Haydn and Mozart. These gentlemen, one feels, would not have been displeased by the music making on offer here.
the twenty-first anniversary of the Te Deum and I hope He will judge me mercifully.

With the recording of the Mass in D minor which accompanies the Te Deum, the Corydon Singers have tackled all three of Bruckner's Mass settings, and with a satisfying consistency, both artistically and technically. This new issue also marks Deum and I hope He will judge me mercy-

ability. This new issue also marks the twenty-first anniversary of the founding of the choir, during which time it has come a long way since its humble beginnings as a chamber choir performing at the Sevenoaks Festival in Kent. At a birthday concert in the Royal Festival Hall in September, Matthew Best and his colleagues tackled- along with the Bruckner Te Deum - nothing less than Beethoven's Ninth Symphony.

This CD is the last of the Corydon's Bruckner series. Matthew Best is not inclined to record a host of early, apprentice pieces merely for the sake of completeness: he believes Bruckner would be appalled at the thought of them being performed publicly. Thankfully, Bruckner penned sufficient top-drawer choral music to keep any enthusiast satisfied. This enthusiasm is certainly happy to add this performance of the Te Deum alongside other great interpretations of the work and, given its superlative sound, to also recommend it to you.

ANTONIN DVORAK
Five Bagatelles for two violins, cello and harmonium Op47 (B79)/String Quintet in E flat Major Op97 (B180)/"The American"/Terzetto for 2 violins and viola in C Major Op74 (B148)
Lindsay String Quartet; Patrick Ireland, viola

ASV DIGITAL CD DCA806 (DD/68.38)

- There can be no question that this has become one of the most treasurable series of chamber music recordings of recent times. The performances are fresh, compelling and full of insights, and the recordings of a consistently high standard. You can't ask for more. Two of the issues have already attained 'library choice' status, and first impressions suggest this new Dvorak issue will follow them into that category.

The Lindsay Quartet opens with the Five Bagatelles for two violins, cello and harmonium (the Quartet's resident violinist, Robin Ireland, foresakes his usual instrument for the harmonium). It isn't quite the improbable combination that it sounds, at least not in the hands of Dvorak. The harmonium takes on a quasi-continuo role, adding its distinctive colour to the bass line, and the results are utterly engaging. If you enjoy the wealth of melody in, say, the Slavonic Dances, then you will find this suite of bagatelles, with their affectionate lyricism, equally irresistible.

Dvorak completed the Bagatelles in just twelve days in May 1878, and included the part for harmonium because the dedicatee played the instrument. He completed the lively and equally tuneful Terzetto in an even shorter time; under a week, in January 1887. Again, this engaging work was written for the pleasure of friends to play.

The main work here is Dvorak's third and last String Quintet, the E flat Major Op97, composed during his time in the United States, hence the subtitle. Like the 'American' string quartet Op96, it is a work utterly characteristic of Dvorak, full of lyricism and lively rhythmic twists and turns. There is even a hint of an American 'hoedown' in the scherzo.

In this exhilarating and idiomatic performance, the Lindsay Quartet is augmented by Robin Ireland's father, Patrick, on the second viola and the recording constantly communicates a shared pleasure in the music-making. This has been a feature of the entire series, the impression that, first and foremost, the Quartet itself is utterly committed to the music and is enjoying discovering and playing it just as you, the listener, are, on the other side of the loudspeakers. As I said at the outset, an experience to treasure.

EDWARD ELGAR
Cockaigne (In London Town)- Concert Overture Op40/Symphony Nol in A flat Major Op55 Philharmonia Orchestra; conductor, Sir John Barbirolli

EMI BRITISH COMPOSERS CDM 7 64511 2 (ADD/68.26)

- Barbirolli's heartfelt interpretation still ranks among the finest performances of Elgar's First Symphony, even if the expansive view of the first movement robs it of some momentum, and of some of the tension which runs through this music, but that is more than compensated for by the overall conception of the work, its attention to phrasing and colouring and its sense of a drama unfolding, and how well Barbirolli penetrates the deeper, haunting, even mysterious side of this work. He once told the eminent musicologist and critic, Michael Kennedy, "God, how I love that music," and that perhaps is the intangible quality which distinguishes this performance. Barbirolli also inspired the Philharmonia to play its heart out for him at the Kingsway Hall sessions back in August 1962, not just in the Symphony, but in a brilliant, effervescent recording of the Cockaigne overture. The overture was issued as a coupling to Barbirolli's memorable performance of the Enigma Variations (on LP) and was remastered for CD in 1988. Surprisingly, though, this is the first appearance on CD of the Kingsway Hall First Symphony.

In the 'sixties, the orchestral sound being obtained by EMI (and Decca) from Kingsway Hall was without peer and, as one-by-one those glorious old recordings are transferred to the newer medium, it has been heartwarming to hear how well that original quality has transcended the years. They may lack some of the diamond-sharp clarity of more recent efforts, but in terms of fullness of sound, quality of timbre, spaciousness and atmosphere, they concede nothing (and, frankly, often remain preferable). A performance that came from the heart and still goes straight to it.
Heavy groove from Anton Fier and snarling jazz from DNA, reviewed by Simon Hopkins. Grooving Guitar from Grant Green and the New York sounds of Mingus, reviewed by Simon Cooke.

Simon Hopkins

Anton Fier
Dreamspeed
Avant Avan009

- A year on from its inception, and with cracking releases by Buckethead, Naked City, Bind Idiot God - not to mention work by contemporary composers like David Shea and John Oswald - under its belt, John Zom's Japan-based label Avant returns to the fray with two very different but both highly commendable CD releases.

Drummer Anton Fier has been one of the most visible faces on the New York new music scene for at least the last ten years or so. His playing style easily incorporates jazz and rock techniques and has seen him in such varied settings as art school punkers Pere Ubu and the Feelies, Bob Mould's eponymous post-Husker, pre-Sugar trio, alongside the aforementioned Zom on numerous projects from early punkish improv sessions (say, the sessions caught on 'Locus Solus') to big scale works like 'The Big Gundown', and so on.

But perhaps the work he's best known for is that of The Golden Palominos, the group he led throughout the eighties. They were an odd group, in many ways. Their debut album was both shocking and remarkable - ragged, jagged, freely improvised, hugely rhythmic (and not much else) funk heavily influenced by both Miles Davis' and Ornette Coleman's electric groups. But over subsequent albums the group rapidly evolved with Fier pretty much the only constant member, and a host of guest musicians, singers and songwriters filling the ranks. The names that passed through the group, in fact, make a pretty impressive roll call of the bright lights kicking around on the fringes of rock and jazz in the eighties: Zom, producer-bassist Bill Laswell, singers like John Lydon, Richard Thompson, T Bone Burnett, Syd Straw, and so on. All culminating in 1991's Venture album 'Drunk With Passion', an out and out rocker heavily featuring the talents of Michael Stipe and Bob Mould.

In some respects it's possibly a surprise seeing a Fier album on Zom's own label. The latter's on record as describing The Golden Palominos as a perfect example of a supergroup that doesn't work, and indeed, he's personally only present on the group's debut. But then 'Dreamspeed', if at all resembles any of the Palominos' work at all, most closely resembles that early work; it's over ten years on, of course, and a dramatically different sounding record, but the feel of the thing, its mood, is in the same ballpark at the very least.

The nine-track 'Dreamspeed' is performed by various musicians drawn from a pool of incredible talent: Fier on drums; Laswell on bass; sampler Matt Stein; P-Funk and Parliament meister-bassist Bootsy Collins in his other, less well known role as a fine rhythm guitarist; Japanese vocalists Makino Kazu and Phew, the latter known for her work with sundry Can members; and the staggering, and still barely-known young San Fransiscan avant-metal guitarist Buckethead. In fact the latter's playing is on a much tighter rein than one might expect after the screaming Metal cacophonics of his own debut album released earlier this year, an initial disappointment to this particular guitar fetishist, but no matter: 'Dreamspeed' is a corker from start to finish. Way better, I believe, than we ever had right to expect from a Fier solo record.

One thing is certain from the very outset of this record: this is a date led by a drummer, and grooving is the order of the day. Fier and Laswell pound along relentlessly, half-70s period Miles, half-Can; part-reggae, part-funk, part hip-hop. Around this scaffolding the others fashion an exquisitely improvised sound-sculpture: Makino's moans and Phew's whispered vocals drift in and out of the mix; Mr Head and Mr Collins' guitars weave a twisted, spidery.
echoing mesh around the general proceedings; and Matt Stein's loops and samples turn the whole thing into a soundtrack for some nonexistent, twisted science fiction film.

And then there's the mix. Half of how wonderful this record is must surely be a result of the mixing. I imagine a lot more playing went on at these sessions than you can actually hear on the finished product; although it's an over used truism in music criticism that what you leave out of the mix, to the point that you hear on the finished product; although I've never heard evidence of it planer than here. Instruments and voices appear, take centre stage, and disappear; suddenly, the whole sound-picture constantly shifting, no matter how rooted to that propulsive rhythm. Every little nuance echoes around in the mix, to the point that it's plain easier than you can actually hear this side of the On-U Sound posse. The Orb! Forget about it.

As a slice of omnivorous mutant dub-metal jazz-funk, this is up there with Ice's 'Under The Skin'.

Simon Cooke

THE MINGUS BIG BAND '93
Nostalgia in Times Square
FDM 36559-2

• "This is New York music" quotes the opening line of the notes. It's a definition which encompasses not only the tracks on this CD, but also the band that recorded it and the character of Mingus himself. Double bass, cool shades, and a pair of hands that should belong to a bareknuckle fighter rather than one of the finest and most accomplished bassists in jazz history, Mingus was typical New York, and the Mingus Big Band covers ten of his tunes in a style of which he would have approved. This is jazz at its best, with players who know the music and each other inside out and who are happy to hold their place in the band rather than steal the limelight.

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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.

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**KLS2 LOUDSPEAKER**

- **Satin Black/Mahogany Veneer**
- **Drive Unit Pack**

Price: £295/£345

Price: £145
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Our high performance 3-way DIY loudspeaker featured in Supplement Nos. 3 & 4 is now available as a complete kit. Included in the kit are all drive units, crossover components and tag boards, precision engineered flat pack cabinet, wadding hardware etc. The cabinet has been designed to be extremely easy to build (even though there are 36 panels for the pair) requiring only wood glue and stretchy carpet tape to clamp the panel in place.

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

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

**K5881 SET OF TRANSFORMERS £220**

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

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

2) Output (2 off) Designed for low distortion and broad load compatibility, these transformers use high quality materials and complex winding arrangements. The cores are centre-hole fixing to avoid corner flux concentrations, the laminations are thin and of best quality grain orientated steel. Output tapped 4, 8 and 12. Drop through fixing.

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

**300B SET OF TRANSFORMERS £430**

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

1) Mains (1 off) Secondary: 490V-0-490V, 6 x 5V, 1 x 6.3V. Primary 220/240 or 110/120 - please state which on order form. Drop through fixing.

2) Output (2 off) Designed for low distortion and broad load compatibility from the 300B, these transformers use high quality materials and complex winding arrangements. The cores are centre-hole fixing to avoid corner flux concentrations, the laminations are very thin and of best quality grain orientated steel. Output tapped 4 and 8. Drop through fixing.

3) Interverse/phase splitter (2 off) So secret they are potted in a steel case! We can't tell you anything about these, other than Tim says they are very special. Drop through tags.

4) Chokes (2 off) For individual smoothing of the H.T. lines to provide best sound quality, two 5H chokes that fix under the chassis. Frame mounting.
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86 HI-FI WORLD DECEMBER 1993
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**GREEN CD RING STABILIZER**
Detachable rings which fit around the circumference of a Compact Disc, which add a small but significant amount of mass, improving its stability when it rotates at high speed in the CD player. Improvements can include better focused images and a denser and richer sound.

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AUDIOQUEST LASERGUIDE
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STYLUS CLEANING KIT
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RECORD STORAGE CUBE
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Philips Bitstream. Excellent value, with no rough edges. Now with optical input (Opto).
Building on the qualities of the original Little Bit, the 'II' is clear and open.
The current masters of DAC-7, their DACs offer superb performance at a range of prices.
16-bit Philips based. A wide, open window for the transport to flow through.
Pure sound, smooth and free from hardness. One of the best at any price.
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THORENS TD166 £270
MICHELL MYCRO £397
ROKSAN KERSICES £785
P. T. ANNIVERSARY £1200
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SUMIKO BLUE POINT £100
ORTOFON MC15 £100
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SHURE VST-V £150
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MORCH DA CAPO £500

Rounded bass, slightly forward midband, clean transients. A bargain.
Extra degree of dynamic range and speed over the 1012GX.
The blue point casts a romantic charm over all types of music. Robust too.
Moving coil cartridge at a moving magnet price. Has a tight grip on rhythm.
A reference to all other MMs regardless of price.
British made moving coil. Good value, smooth and detailed, but can sound brittle at times.
Scan-Tech designed moving coil cartridge. Musical and accurate, without any flaw.

CASSETTE RECORDERS

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PIONEER D-500 £600
TEAC V8000S £699

Worth every penny, pushes recordings to the limit and remains unflustered.
Very smooth sounding DAT deck, but still slightly coarser than the original source.
Dolby 'S' deck. Easy to use, very stable sound, with instrumental textures close to perfect.
'Domestic' deck with Nakamichi sound quality, and manual head azimuth adjustment.

World Radio History
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YAMAHA TX-950 £260
H/K TU9400 £300
QUAD 66FM £490
NAIM NAT 03 £500
NAIM NAT 01 £1377

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Fairly basic facilities, but sound which beats anything at the price.
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NAD 302 £160
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DENON PM-350II £220
H/K HK6550 £349
AUDIOLAB 8000A £430
SUGDEN A48B £460
AUDIONOTE OTO £1250
EAR 834 £1295

Good sounding starter amplifier. Great dynamic range, excellent bass.
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Very neutral and superbly built. Good bass, great imagery, but can be sterile.
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12w Valve amplifier. More in tune with music than hi-fi. Superb dynamic range.
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A. SYNTH PASSION £475
DPA DSP 2005 £495
MICHELL ISO HR £850

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ROGERS LS2a2 £209
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JPW RUBY £500
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REL STADIUM SUB £695
PROC RES 1S £819
APOGEE CENTAUR £120
TANNOY D700 £1970
TANNOY GRRM £3500

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Detailed, fast, and have bags of rhythm. Ear bashing pleasure.
A rich and smooth blend that offer their best when bi-wired.
So far the most correct speaker we have discovered at the price. Sweet and even natured.
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Depth and transparency. Fast and lively metal driver loudspeaker.
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CELESTION DLP £349

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Alan Sircom in Hi-Fi World wrote that our "A + B" system was "amongst the most refined and integrated subwoofer/satellite systems on the market today", while Geoffrey Horn in Gramophone said the Pentacolumns had a "quite astonishing" bass response - "not only is the quantity revelatory but the fast realistic attack and decay betters that of the vast majority of allegedly wide-range loudspeakers"

Examples of the price reductions it has been possible to achieve by direct marketing are as follows:
"A" Miniatures + "B" Bass, including active crossover and bass amplifier reduced from £1460 to £999.
"A" Miniatures + Pentode Bass, including active crossover and bass amplifier reduced from £1599 to £1199.
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Custom size for esoteric audio components available to order.

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<thead>
<tr>
<th>AIWA XC-300</th>
<th>£129</th>
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<tbody>
<tr>
<td>DENON DCD890</td>
<td>£SPECIAL</td>
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<tr>
<td>MARANTZ CD52-11</td>
<td>£SALE</td>
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<tr>
<td>KENWOOD KA3020</td>
<td>£SALE</td>
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<tr>
<td>PIONEER A-300X</td>
<td>£SALE</td>
</tr>
<tr>
<td>NAD 302</td>
<td>£SPECIAL</td>
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**DISCS**

| AIWA XCB300 | £125 |
| KENWOOD DP7350 | £175 |
| DENON DCD7350 | £150 |
| MARANTZ CD821 | £122 |
| NAD CD505 | £182 |
| PHILIPS CDP200 | £132 |
| PIONEER PD201 | £115 |
| SONY CDP607 | £189 |
| TECHNICS SL-P770 | £155 |
| YAMAHA CDS550 | £145 |

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| SONY TCDD300 | £110 |
| TECHNICS DTC740 | £110 |
| DCC |

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| AIWA KT005 | £105 |
| DENON AH-M300 | £117 |
| NAD 302 | £70 |
| PIONEER P-3018DS | £142 |
| BIC AC350 | £125 |
| SONY TST160L | £89 |

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| BOSE 601 | £189 |
| BIK A200 | £359 |
| TECHNICS SU-V200K | £339 |
| SONY TAF1700 | £299 |
| YAMAHA NS-40 | £219 |

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| DENON PM2000-III | £380 |
| KENWOOD KAI202 | £250 |
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| NAD PM50 | £119 |
| PHILIPS CDP200 | £115 |
| PIONEER PD201 | £115 |
| SONY CDP607 | £189 |
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| JVC | £285 |
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| AIWA NSX330 | £199 |
| SONY TCX20 | £155 |
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"Superbly finished, the sound quality was considered to be first rate." Norma Cohens, Hi-Fi News/RR May '90
"The sound quality when using the Slate Audio stands proved to be a revelation, something special." Paul Messenger, Hi-Fi Choice, May '91

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WHY A HI-FI TUNER NEEDS A GOOD AERIAL

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

The question is: how do you get it?

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

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

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

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

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

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

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

OUTDOOR AERIALS
In most locations, only an outdoor aerial will give a signal strong enough and clean enough (i.e. free from interference and multipath reflections) to provide true hi-fidelity from a good tuner. Benefits are height (the higher the better), crucial for obtaining a strong signal free of reflections, and number of elements, which determine both gain and directionality.

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

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

AERIAL INSTALLERS
The best and overriding reason for using an installer is personal safety; roof work is very dangerous. Installers are also very quick and well equipped; DIY may take the large part of a day. Local installers should know about area-specific problems, the location of repeat and fill-in transmitters, and such like - all matters that are likely to be a mystery to most people.

Finally, good installers should have a Field Strength Meter that not only enables them to see whether an aerial is giving the required result, but can prove this to the satisfaction of the customer. Around 1mV is wanted, meaning powerful stations will come in higher (say 3-5mV) but weak ones a bit lower (0.3-1mV). If for no other reason, knowing that the aerial works properly is enough reason for using an installer.

Discuss this matter with them first though. In some areas, it may be impossible to obtain such a strong signal, no matter what aerial is used; get a variety of opinions if necessary.

CONFEDERATION OF AERIAL INDUSTRIES
The CAI has a countrywide list of aerial installers who are members that abide by the rules below.

To find a local service, contact -

CAI Ltd., Fulton House Business Centre, Fulton Road, Wembley Park, MIDDLESEX HA9 0TF

Tel: 0181-902-8998 Fax: 0181-903-8719

CAI members must employ staff competent for the business conducted. They must follow standards of practice, agree to investigation, examination or test at any time. They must guarantee any aerial, equipment and/or installation work for a minimum period of twelve months.
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Quality HiFi Bargains In Windsor

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43 King Edward Court, Windsor. Tel. 0753 856931
My original CD system consisted of a Marantz CD-40 CD player, Rotel RA-820 amplifier (now about six years old) and Mission 761 loudspeakers on Partington stands, with QED 79 strand cable. I recently purchased some Ixos interconnects, replacing the cheap ones supplied with the CD player, which revealed more detail, and cleaner bass and treble, but also to my ears a dry, bright and aggressive overall sound. Having consulted a number of dealers, the general consensus was that a new CD player was required and I bought the Rotel RB965 BX. After a week or so of being impressed by the difference, I realised that the overall problem hadn't gone, and the sound remained fatiguing. So what next? I can only afford to replace one component, and I suspect it should be the amp. I have got a £200 to £300 budget and I am considering the Creek CAS 4140 S2 and the Sugden A48B as I imagine they may add some much needed warmth to the system, while several dealers have suggested the Aura Evolution. I listen mainly to classical music. Please help me, as I currently find myself strangely hankering after my long departed LP collection! Michael Goron Stratford, London.

No part of your current system is particularly to blame for the harshness that you are still suffering from. It is the combination of a bright source, bright amplifier and bright loudspeakers that is compounding your problem. Unfortunately, a Rotel CD player was the wrong move with a Rotel amplifier and Mission 'speakers. An Arcam Alpha, for example, with its slightly rolled off treble response would have given a softer sound. The Rotel is not a bad CD player - in fact, it is very good - but your system is now biased too much towards the bright side of neutral.

Because the Rotel CD player is very good, and your amplifier is old and could certainly be improved upon, I would suggest that you set about building up a neutrally balanced system around your new source. This should solve any problem of harshness and upgrade the whole sound at the same time. I feel that it is important for you to know what you are heading for when upgrading, so I would suggest taking your CD player along to a hi-fi dealer and auditioning a new amplifier and 'speakers at the same time. By doing this you will be able to decide on a system you like the sound of and aim for it, rather than buying new components that sound good in a demo system, but unbalanced in your system. Fortunately we have a good range of equipment in the office at the moment which has enabled me to have a quick listen to a few systems on your behalf. I came up with the following:

The new Denon PMA-350II at around £220 offers a very smooth and detailed sound. It has good bass drive and an open midrange so should suit the Rotel very well. You don't mention what size room you use your system in, but as you are using small Mission 'speakers I presume it is around 14ft square or so. If this is the case you will not need a particularly large loudspeaker. As you listen mainly to classical music I would suggest you audition the Rega Kytes. These have a very neutral balance and a sweet sounding little fabric dome tweeter which should make them ideal for classical music. They must be placed against a rear wall, or even on a bookshelf to help the bass, and they don't go particularly loud without hitting the end stops, but they do sound very clean and smooth with the PMA-350II amplifier.

You could also have a listen to the Harman Kardon LS 0300s, although these are better suited to rock/pop music than classical. They must be placed against a rear wall, or even on a bookshelf to help the bass, and they don't go particularly loud without hitting the end stops, but they do sound very clean and smooth with the PMA-350II amplifier.

You could also have a listen to the Harman Kardon LS 0300s, although these are better suited to rock/pop music than classical, but worth a listen.

Finally, if you do have a larger room than I have guessed, the TDL RTL2s will suit nicely. These use the same little fabric dome tweeter but produce considerably more bass. These mini floorstanders ideally need to be mounted on spikes and placed around 3ft into a room and 2ft from a wall.

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

The Denon PMA-350II offers a smooth full bodied sound that should tame any harshness in your system.
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World Radio History
Continued from page 119.

I suggest that you listen to
these combinations with your
Rotel CD player. This will give
you something to aim for,
even if you only have the
money to upgrade the
amplifier at the moment. DB

PERSONAL TASTES

Below is detailed my system
setup and problems that I am
encountering with it. Any
suggestions or advice on the
matter would be much
appreciated.

System: Rega Planar 3
turntable with Rega Bias
cartridge mounted on a
homemade dampering
table, Pioneer CT-2080R
cassette deck, Technics
SL-XP700 personal CD
player, and a Mission
Cyrus 2 amplifier feeding
Mission 762 speakers
through 1mm stranded
PVC insulated wire. My
listening room measures
13'x13', with my
speakers 6' apart 10'
from the wall, in the
middle of one wall.

Problem: My main
sources are CD and vinyl,
yet my tastes vary from
Prince and Supertramp to
Talking Heads and
Tchaikovsky. When
playing music at low volume
levels I found the sound rather
uninvolved and lacking a
balanced bass and treble. The
sound does not suffer so much
when listening to vinyl but
mainly when listening to CD.

What can I do to improve
the sound, as although I enjoy
the high volume settings my
neighbours and family might
not? I cannot decide whether
to upgrade the CD player or
speakers, or to add a PSX to
the amplifier. Alternatively,
would better cabling be a wiser
and cheaper investment? I have
up to £750 to spend.

Could you also advise me
on a good tuner in the £100-
£200 price range for listening
to FM broadcasts, mainly Radio
1 in the mornings and night
time. Is there a cassette deck
deprecated in the £150-£250
price range that would be a
good upgrade from the
Pioneer, which is mainly used
for transferring vinyl and CD
to TDK SA-X tapes for in-car use.

Colin Harris
Maidstone,
Kent.

The component you are using
to source CD into your
system is a 'personal' CD
player, designed for use on
the move and with
headphones. These players
are of mediocre quality. While
the SL-XP700 is an excellent
stereo within these
limitations, a home system
such as yours is likely to show
up those areas where it falls
down in performance, and
this is probably the problem.

A good CD player at
around £300 will do the trick.
The Denon DCD890 at £270
or their DCD1290 at £330
£300. The NAD Simon
mentions is shortly due for
replacement, so may be
available at a discount price,
but the Denon TU260L is
excellent as well.

After the tuner, you will
have around £150 left for a
cassette deck. The Pioneer
CT-2080R is around six years
old and was a budget £180
model. The chances are that if
it has been heavily used the
heads will be worn and the
whole deck in need of a good
service. Unfortunately this
could cost nearly as much as a
new deck. A good

The Dacula CD convertor from Select Systems offers extremely good sound and value for money.

spring to mind, as does the
Yamaha CDX-870, again at
£330. All of these offer an
involving sound with solid
bass and good treble.

If none suit your taste,
then a good, cheaper
transport, such as Philips'
bottom of the range players
provide, and an outboard
DAC, Select Systems' £376
Dacula or DPA's £450 Little
Bit II, is a more expensive
option, but still within your
budget.

You may like to spend
a little of the leftover money
on some good interconnects and
speaker cables.

Good tuners in the £100-
£200 range? No problem! The
£110 Denon TU-260L has
been a favourite of ours for
some time, as has the
NAD4325 at £160. Both are
AM/FM machines. SC

One other CD player to try is
the £420 Arcam Alpha. This is
a smooth sounding player
with a good firm bass, so
should suit the system nicely.
This would leave around
replacement would be the
£199 Kenwood KX-5050.
This has all the convenience
features that are useful for
making up quick tapes for the
car as well as good sound.
As long as you use good tapes
(TDK AR should be the
cheapest) the Kenwood
should give excellent results
over a long life. DB

SYSTEM SELECTION

For about a year and a half
now, I have been wanting to
buy a CD-based system for
around £1000 or slightly less.
After reading through each
edition of almost all the hi-fi
magazines around since then
and listening to various
combinations of CD, amp and
speakers, I have been left
bewildered as to what I should
choose.

I haven't got a wide range
of music taste; I listen to a lot
of classical music, and have
tried out my music on various
systems, mainly all based
around the Arcam Alpha+ CD,
now upgraded to the Arcam
Alpha 5.

It seems that the Arcam CD
is great value, even for £450+
but this only leaves me with
around £500 for my speakers
and amplifier. I have short-
listed my amp to a few types,
headed by the Aura VA-100
Evolution and the Alchemist
Kranen APD6, but these are
£100 apart. Speakers on my
mind only get the £200 mark
spent on them from my
money.

My problem is that,
although the Arcam is good, is
£450 in a £1000 system too
much? Am I leaving too little
room to spare? It seems that
the Arcam doesn't reach its full
potential with the Aura and
even the Alchemist, which not
only prevents the full quality of
its capability, but also does it an
injustice. I have had my eyes on
the Arcam all along, but now
I'm wondering whether I
would be better off with, for
instance, the Kenwood DP-
7050, having more room to
spare for a more evenly
balanced system, for the
Kenwood sounds good for my
taste, but unfortunately doesn't
match the Arcam at its full
capacity. Maybe you have
some ideas as to what I should
try out.

If I'm to spend £1000, I
want to make sure I spend it
wisely, yet I have been getting
some confusing and opposing
contributions from others,
telling me both ways that it's
right with the Arcam or it's
not. What I want is some
good, frank advice as to what I
should do.

I feel that I've waited
long enough, and I'm getting
tired of having to listen to other
not so good systems in the
process. This is my first
experience in hi-fi, and I would
like to hear what you have to say about it.

Stefan Ivanovitch
London.

Guess who went through
exactly that with his last
upgrade? The Arcam Alpha's a
good enough player, but a
little too staid for my taste,
and you should consider what
is probably the best value-for-
money option, which is a
transport with an outboard
DAC. I bought a Philips 614,
which is still available from
large chain stores at a knock-
down price, although it has
been superseded by the £140
692.

Continued on page 123...
WHAT HAVE THESE PRODUCTS IN COMMON?

They both feature valves and offer the very best sound quality. Apart from that, very little! Where else but K.J. can you hear them together?

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REFERENCE Pineridge, Sandy Cross, Heathfield, East Sussex.

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For a DAC, the DPA Little Bit II is excellent, but a little expensive at £450 although, again, the older version is still available at a bargain price (£250 in several dealers around London). Select Systems' Dacula is also a very sweet performer at £376, and there's also QED's £140 Digit to be considered, especially if you want to consider our 'position' DIY upgrade.

The Alchemist you mention is a good amp., although the Denon PMA-350II at £220 and the Harman Kardon HK6550 at £349 are also well worth a listen.

With 'speakers, try the £120 Richard Allen Minette IVs, or the £210 Rogers LS2x2s, or one of the 'speakers from this month's group test, such as the TDLs or Regents.

Of these options, I would recommend the Philips/Dacula/Harman Kardon/Rogers option, which should come in at £80 above your £1000. Be prepared to shop around, and also to haggle a little (in the nicest possible way) with your dealer, and you might get it for less.

TECHNICS TRIBULATIONS

I have been collecting recordings for the past twenty years and I have quite a few. Moreover, I listen a lot to the radio. I thus have no real need for more recordings. I have nevertheless decided to purchase a CD player because I just want to hear my favourite recording, La Tosca with Maria Callas, under the baton of De Sabata in the new format. I had set my heart on the Technics SL-PG500 (Aug 92), but I just realized that you have dropped it from your list of favourites. What happened and what should I do? I can spend only up to £250 or so.

Henri Noel
Quebec, Canada.

Our 'World Favourites' column covers products that we have reviewed recently, and products are dropped from the listing as and when we feel that they may have been superseded and according to the requirements of space in our listings. The Technics, if it is still available in Canada, is still an excellent player, or you may like to try the Denon DCD890 at £270 or the £230 Marantz CD52 mkII, although I doubt that the latter will flatter Maria Callas, it being a player more suited to rock and jazz.

HOW BIG AN UPGRADE?

I am constantly upgrading my system. For the time being it comprises of a Marantz CD-52 SE Mk II, an Audiolab 8000 C/P, a Marantz ST-40L tuner and Tannoy 603 'speakers. The 'speakers are on lamp tables of the same height, single wired using Furukawa FS-2T12 cables. Interconnect between pre and power amp is Furukawa FD-1010 and Marantz's own cables between sources and the pre-ampplier.

I am generally happy with the sound I obtain from CD source. The Marantz and the Audiolab combination is producing a big and well balanced sound with punchy bass in my room (dimensions are three by five metres). However, I am not satisfied with the tuner. I am using a dipole aerial supplied by Marantz. Even from the strongest stations (I mostly listen to Jazz FM or Melody radio) sound is distorted and compressed (or processed?). Bass lines are easy to follow but soft, perhaps over emphasised, treble is dirty most of the time, and there is no big difference dynamically between the loudest and quietest passages. I suspect this is the way the Marantz is designed to sound - if I use a better aerial, this character will remain.

I was using a Kenwood 5020 receiver before and even with a wire dipole I was getting excellent sound from Jazz FM. I am planning to change the tuner for a more sensitive and unprocessed sounding one. I am thinking about the Denon TU-260L, or Pioneer F-676. I also intend to get an indoor antenna like the Maxview Omnivision.

Can you suggest any other sensitive tuners that have sound quality that will not let down my system? My maximum money for the tuner is about £300.

I also want to upgrade the 'speakers. They should be able to work on my lamp tables, because I do not want to change stands with every 'speaker. Even with floor standing models, I want to place them on tables, because I do not want to upset my neighbours with floor-shattering bass.

My short list for 'speakers is: Epos ES 1s or 14s, or maybe Apogee Centaur Minors (I heard them with Audiolab amplifiers and they sounded very good). Do you have any other recommendations? I like a natural and involving sound, with integrated and realistic treble and a good sound stage. Thank you very much in advance for your advice.

Bulent Cockson
London.

Sorry, but loudspeaker stands are essential both for the Tannos you already have and any of the loudspeakers you suggest, except the Apogees. You're mistaken in thinking that your neighbours will be disturbed in consequence; your plant stands are probably transmitting more energy into your floorboards (and their ceiling or walls) than a dedicated pair of stands would. I urge you to try a pair of Tannoy's own stands before you waste any money.

The same goes for the tuner. The character of the sound you are describing is more a consequence of the Marantz' different sensitivity than its inherent quality. There is no alternative to a good outdoor aerial, but obtain a (metal) dipole which you can then place in the highest part of the room if you have no access to the roof.

Now see what happens: upgrading rather than optimising is the likeliest way to lead to increasing dissatisfaction, because you are not addressing the two fundamental problems: seating your speakers properly and providing your tuner with a good strong signal.

Good sound from a tuner demands a good aerial, as Eric says, and tests we have carried out on indoor aerials show that a rigid metal dipole placed high up indoors

Aura's TU-50 gives a clear and sweet sound from radio.

END THE CONSPIRACY!

My system comprises an Elite Rock Excalibur turntable, Myst TMA3 ('MM') amplifier and Castle Pembroke speakers. My questions are in two directions:

What are your suggestions for replacements of my existing cartridge (Ortofon OM10) bearing in mind the amp, and secondly the speaker cable (QED 79)?

Bearing in mind that none of the items are still in production today what upgrade paths would you recommend in each of the three areas?

In both cases my aim is recreating the original sound as closely as possible. This aim overrides all others, but is followed by good price/value for money. The room size is 13 feet wide, 10 feet high, and 20 feet long, with a marble floor.

I must be an extinct species because I don't have a CD

Continued on page 125....
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announcements of new would go for an Ortofon MCI 5 improvement on the QED, soon. I'm all for technological advancement but I rebel against its exploitation by deceit.

Emmanuel Kroussanotakis
Nicosa, Cyprus.

I'm always surprised at the number of readers who have a Myst; every time I have to explain that my memories of it are, well, a bit mysty. The first upgrade must be the cartridge, which by comparison is a trifle sluggish with moving-coil speakers. Both these changes will add a bit more zip to the system as it stands.

Given that you are sticking with the plastic pliesisors, I think you should venture further into the Jurassic Park of vinyl replay. I stress that I don't know whether this will work, but I think there's a fair chance. Try a Heracl's Iso, upgrade the cartridge to the top - a Lyra Lydon, say - and use the one of the Myst's line-level inputs.

Speakers are more of a problem, not just because the Myst, as I recall, was not particularly powerful, but also because you mention marble floors. Those who dwell in marble halls have to live in a live, reverberant acoustic, and I really cannot think of a modern speaker that might produce good results in that kind of environment. Cautionary, I would suggest studio-monitor types like the Harbeth HL-P3, Rogers Studio 3 or, more likely, one of the bigger currently revivified Rogers/BBC designs.

The problem is that none of these are likely to go very loud with the Myst driving them, and the handful of ultra-efficient designs which use horn-loading or transmission lines I strongly suspect would roar like a Minotaur over a marble floor. What the dealer situation in Cyprus is like, I have no idea, but home trial in these circumstances is absolutely mandatory.

As for the CD/Vinyl controversy, I'm opting out. I use both, but when I turn to vinyl rather than CD it's generally because I have far better performance on a black disc than on silver: It seems there are more second and third-rate releases than ever, but that is probably an illusion. I often refer to issues of Gramophone from the late Fifties and Sixties. This was the so-called 'Golden Age', but there was a lot of dross around then, as well. I'll probably be tied to a tree to be fed to a sabre-toothed tiger for saying this, but I think it's unfair to shoot the (CD) messenger just because the message (the performance or recording) is often abysmal. Nobody ever seems to have accused turntable manufacturers of improving their turntables and the sound of vinyl with it, but, really, by comparison the vast majority of turntables available twenty years ago were, by current standards, appalling! I can only think of two affordable ones from those days, by Pioneer and Trio, and believe me, there are far more CD players available for less money in real terms now that would knock them into a cocked hat. EB

GRAPHIC EXPLANATIONS
I am at present using a pair of home made 'speakers which are very good, but I don't feel that they are bringing out the full qualities of the system. I have used some other 'speakers to test the system with, including a pair of Sony APM-10ES, and a pair of B&W DM4s. These really do improve the quality of the system, but I cannot use them permanently as they are not mine. So I am thinking of investing in a very good pair of loudspeakers but £400 is the most that I can really afford to spend at present.

My system at the moment comprises of a Sony CDP-497 Compact Disc player, Sony STS-370LB tuner, Sony TC-W810 twin cassette deck, Sony SEQ-411 graphic equaliser, Kenwood P-26 turntable, Tecs X-3 enclosed reel tape machine and a NAD 3020A amplifier. I have listened to some B&Ws, Tannoy, Mission and Wharfeadies but I particularly liked the sound of the Mordaunt-Short MSS50 loudspeakers (all were tested on a Rotel amplifier).

Do you think these 'speakers are worth £400, or could I get a better pair for the money which would match the system better? (I might also consider upgrading my amplifier to either a Harman Kardon HK6130 or an Arcam Alpha 3).

John Battersby
Teddington, Middx.

Try this. Take your CD player along to a hi-fi dealer and ask them to plug it into Denon's new PMA-35011 amplifier and a pair of Harman Kardon LS 030s. Insert your favourite CD and wind up the volume. If after half-an-hour or so of listening you still think that you need a £400 pair of loudspeakers that are to be driven by a NAD3020 and a graphic equaliser, apologise to the hi-fi dealer and ask for a pair of Mordaunt Short MSS 50s.

I hope you will be so impressed with the clarity and detail of the first system, that you will never consider using a graphic equaliser again. These are cheap cases stuffed full of low grade electronics which distort and colour the sound. The controls on the front panel are largely for boosting and correcting distortions which the equaliser itself has introduced to the system. Every extra component in the signal path adds its own distortion to the signal, if you want to hear what the music is really like, try my suggestion - it's a much better way of spending £400. DB

I would offer an alternative view here, based upon how your current system might be performing. I note that you have a strong preference for Mordaunt Short MSS 50s, which have a warmer sound than is common in hi-fi loudspeakers, explained by falling upper treble in their frequency response. Personally, I don't dislike their presentation; it has the benefit of being relaxing, unintrusive and not too garishly 'hi-fi' - in the worst sense of the word.

If this is your clear preference, after listening to brighter boxes, then I suspect that your own DIY loudspeakers had too little treble and it is a sound balance you have become accustomed to. There aren't so many warm sounding loudspeakers around at present. Tannoy's 60Ts are worth checking, since they have a big, full-sound and Tannoy's metal dome tweeter is smoother and less intrusive than most. Ruark Switwoods are another option. We haven't yet heard Mordaunt Short's new loudspeakers, but you should attempt to get a demo if possible. NK

Harbeth HL - P3s are a possible upgrade from Castle Pembrokes

since the OM10 is nowhere near the quality the Rock/Excalibur deserves, I think I would go for an Ortofon MC15 Super, but look out for announcements of new cartridges from their direction soon.

The same company has some excellent speaker cable, which is ridiculously cheap for the quality and will be a great improvement on the QED.
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