

# HIFI NEWS

JULY 1987

£1.30

RECORD & REVIEW

## SME SERIES IV

Tonearm of the  
silver age

## LOUDSPEAKERS

Audiostatic panels  
Roksan's Darius  
Infinity's baby  
Rogers, Ruark and  
Monitor Audio

## SONY'S R-DAT PLAYER

A first review

## THE LAST TUBES?

Audio Research  
M300 amplifier

Marantz 'special' CD  
Three Thorens decks  
Kessler in Kyoto  
Phantom of the Opera  
Record of the Month

# "I see the violin as being very close to the human voice"

## WHY DID YOU RECORD AN *ELECTRIC* ALBUM?

When I play the violin I try to get away from the virtuoso stereotype associated with the instrument. I am always looking for new ways of expressing myself on the instrument. I see the violin as being very close to the human voice and making an electric album with an electric violin is an extension of this idea.

## WHAT ARE YOUR MUSICAL INFLUENCES ON THIS ALBUM?

Basically everything I have ever heard in my life. My influences come from my background. Rock music plays the most important part in influencing this album, but this album is also the result of my contact with Blues, Soul, Jazz and Indian music.

## WHAT DIFFERENCES ARE THERE BETWEEN RECORDING A CONCERTO WITH AN ORCHESTRA AND RECORDING AN *ELECTRIC* ALBUM WITH ROCK MUSICIANS?

When you record a concerto you have to get the whole album finished within 9 hours, whereas when you record a rock album a lot of the compositional process happens in the studio at the time of recording, so it can take longer.

Four tracks on this album were done as live performances, with all of us playing simultaneously; but the rest of the album was made following the standard rock procedure - laying each line down separately, and improving it where necessary.

With a classical album most of the thought put into the album has happened before the recording process because the music has been written down before hand. Whereas with a rock album a lot of positive creative thought can be used and, is in fact essential at the time of making the recording.

Obviously with a rock album you have to think about the structure before getting in to the studio and Dave Heath was instrumental in obtaining the structure we have got on this album.

## WHAT KIND OF AUDIENCE ARE YOU HOPING TO REACH WITH THIS RECORD?

Anyone who wants to enjoy themselves.

## DO YOU THINK "LET LOOSE" IS ACCESSIBLE TO A POP OR ROCK AUDIENCE?

Yes. Considering it is rock music I should think that this is the sort of audience that would buy it. Since I am not using the violin in the traditional way, but using it like a voice, electric guitar or saxophone, I think the album should be able to communicate with anyone who enjoys rock music, but would like to see a couple of new aspects to the music.

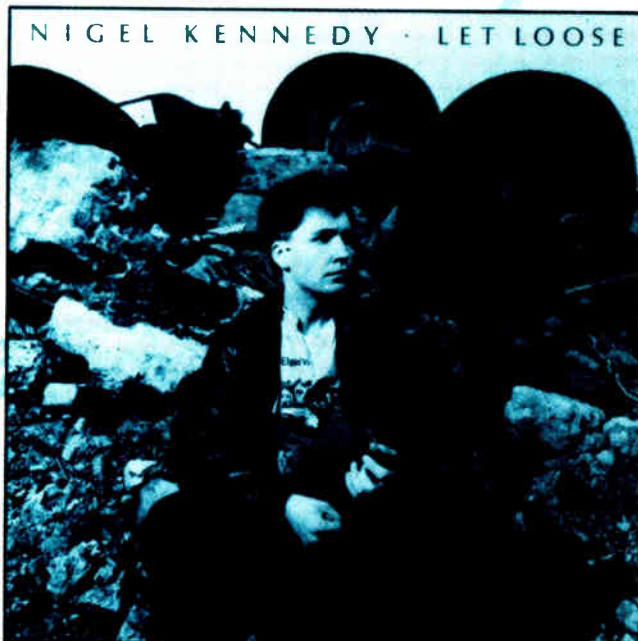
## ARE YOU PLANNING TO RECORD ANOTHER *ELECTRIC* VIOLIN ALBUM OR IS THIS A ONE OFF?

This album is just the start of a new direction for me, which I consider one of the most important aspects of my music making. So, I obviously plan to be making more rock albums, when I have formulated ideas which are worthwhile putting down.

THE ALBUM:

NIGEL KENNEDY

LET LOOSE



RELEASE DATE JUNE 8TH 1987

AVAILABLE ON

LP SCX 6709

CASSETTE TC-SCX 6709 . CD CD-SCX 6709

Nigel Kennedy's recording of the Elgar Violin Concerto was named 1985 Gramophone Record of the Year and honoured as Best Classical Recording 1985 in the British Record Industry Awards.  
(available on EMI EMINENCE LABEL)

# HIFI NEWS

JULY 1987 VOL. 32 NO 7

## RECORD REVIEW

### COVER

The world's most photogenic tonearm? SME's satin-chrome finished Series IV maintains the constructional standards set by the famous V, but is priced at a decidedly more reasonable £675. The Series IV is reviewed on page 67. Cover photography by Tony Petch, art direction by John Gash

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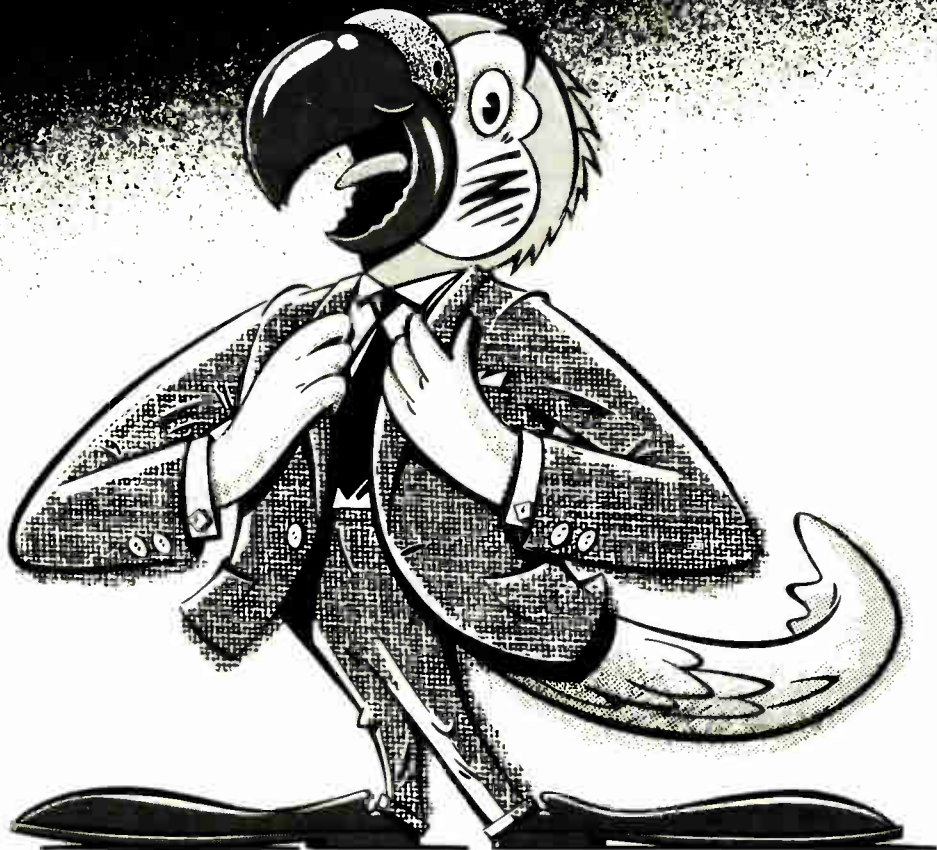
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EDITOR Steve Harris ASSISTANT EDITOR Ken Kessler MUSIC EDITOR Christopher Breunig PRODUCTION EDITOR Linda Fieldhouse ART EDITOR John Gash SECRETARY Jennifer Scotland CONSULTING EDITORS John Crabbe Donald Aldous TECHNICAL ADVISORS Martin Colloms Stanley Kelly Rex Baldock James Moir ADVERTISEMENT MANAGER Simon Taylor ASSISTANT ADVERTISEMENT MANAGER Sandra Brooks ADVERTISEMENT COPY MANAGER Gill Mitchell PUBLISHER Colin Gamm. Editorial and Advertising offices: LINK HOUSE, DINGWALL AVENUE, CROYDON CR9 2TA. Telephone: 01-686 2599. Telex: 947709. UK and overseas subscription information: see page 114. HI-FI NEWS & RECORD REVIEW also incorporates: Stereo, Tape & Tape Recorders, Audio News, Record News, Audio Record Review, The Gramophone Record. Member of the Audit Bureau of Circulations

# THE PARROT

British Hi-fi Dealers No. 1.



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**SOUND ADVICE AT A BETTER PRICE**

**P**ROGRESS towards the ideal of perfect sound reproduction in the home is about to be halted, and in fact reversed irretrievably, if CBS and the IFPI succeed in introducing the infamous Copycode 'spoiler' system to CD mastering. The International Federation of Phonogram and Videogram Producers (IFPI) wants to stop DAT being used to copy Compact Disc, or indeed any pre-recorded copyright material; Copycode (developed by CBS Records Technology) can achieve this if software manufacturers record music with the specified filter and if DAT manufacturers can be placed under legal obligation to include the appropriate sensing circuit to inhibit recording in its presence.

Copycode involves processing all master recordings with a very steep 'notch' 60-90dB deep, centred on 3838Hz. DAT machines would embody a scanning sensor to detect the notch, even if it were moved in effective frequency by changing speeds. Copycode, demonstrably, will degrade the sound of all music it is applied to. The loss of information in a band at least 200Hz wide will be aggravated by the unpleasant side effects of using the most drastic possible filter (analogue) right in the middle of the audio band. It is an idea which runs counter to any sane concept of high fidelity; if copyright needs to be protected, there must be a better way. Martin Colloms registers a vigorous protest in this month's 'Views'; Barry Fox will be reporting fully in next month's 'Technology'. By that time a committee of US Senators, currently trying to decide whether or not to enforce the inclusion of Copycode chips in DAT machines imported to the US, may have made up their minds. It is to be hoped that they decide not to; otherwise, the result will be imperfect sound, forever.

## Reviewing DAT

Industry politics still prevent anyone from announcing a launch date for Digital Audio Tape recorders in the UK, Europe or the USA; the Sony DTC1000ES used in this month's review was a Japanese 100V model borrowed from Howard Woo of Covent Garden Records, who had bought it privately in Japan and is now routinely demonstrating it in his shop. He argues that if customers are worried about the future of CD, this is a better way of reassuring them than pretending that DAT doesn't exist.

'We acquired a DAT machine,' he says, 'because we felt the public should be given the opportunity to hear the new technology for themselves; we feel that DAT is not a threat to the Compact Disc market. Since we have had the DAT player in the shop, no-one, after listening to CD, has stated that they will wait for

DAT rather than buy CD now. As far as Covent Garden Records is concerned, the DAT machine has just provided the last point of reassurance that CD was the right medium for them in the first place.

'Because the copy-prohibit on DAT machines will not allow the consumer to digitally download at the CD sampling rate of 44.1kHz, copying of CD will have to be done in analogue; and this means that the subcodes which provide indexing/access facilities will disappear. It is possible for the customer to sit down and enter his own accessing points, but few will go to this trouble. We find, currently, that DAT is one of the biggest aids for demonstrating and selling CD as a superior and compact product.'

We would like to thank Howard for kindly lending the machine to us. When we informed Sony that we were carrying out the review, Geoff Muge, Hi-Fi Group Product Manager, Sony (UK) made the following comments:

'While it might be overstating the case to say that the domestic market in the UK is not ready for DAT yet, it must be appreciated that in terms of CD player population and new technology generally, Japan is a much more mature market. It is also a useful testing ground. Remember, the Sony CDP101 was available in Japan a full six months before the European launch of Compact Disc.

'We believe the DTC1000ES is an impressive machine; however, we are the first to admit that its sophistication will ensure it has a limited market in any territory. Indeed, as we hope Martin has discovered, it is more a semi-professional "home-recording" device than a "home taping" machine. For consumers looking for a cheap entry into digital audio, the DTC1000ES is no solution... we are genuinely excited by its potential for extensive use by the UK recording industry.'

Geoff went on to affirm that in the UK, CD was at last entering its 'mass market' phase and pointed out that Sony had just opened a large CD hardware plant in France and was continuing to invest massively in new CD pressing plants. 'It must be obvious,' he continued, 'that we at Sony see the two formats as complementary. From a personal viewpoint, I look forward to the launch of digital audio tape, not least because it will allow both critics and consumers to attain a more accurate perspective.'

## FBA Awards

More than 400 members of the hi-fi industry gathered for the Federation of British Audio's fifth annual Awards Dinner, which was held on April 27 in aid of The Beethoven Fund for Deaf



## STEVE HARRIS

Children. Evelyn Glennie received a cheque on behalf of the charity from Norman Crocker of the FBA, while the awards were presented by FBA president Lord Gowrie. This year's product award winners were: Source Component of the Year, Linn Axis turntable; Amplification Component of the Year, Musical Fidelity A1 integrated amplifier; Loudspeaker of the Year, Celestion System 6000; Accessory of the Year, DNM Solid Core cable and interconnect; Test of Time Award, Quad ESL63 loudspeaker; The FBA Award for Excellence, SME Series V pickup arm. Dealer of the Year was KJ Leisuresound, while the award for Outstanding Service to the Industry went to Harold J Leak, who recently celebrated his 80th birthday, and was collected for him by his son, Simon Leak. The evening was rounded off by a charity auction conducted by John James of Finewood Cabinets.

## Audiophile Competition

Through a regrettable printer's error, Part Three of the Audiophile Competition did not appear in the June issue as planned; Part Two was inadvertently repeated instead. Accordingly, we have included Part Three in this issue (p17) and have put back the closing date to Friday, July 31. We are sorry if this caused confusion; at least it has given entrants another chance to get Part Two right!

On the subject of errors, we must apologise to HW International and Lux Corporation as well as to readers for one particular error in 'Pot Pourri' last month. The reference to 'an Lux' (p81) should have read 'an LVX', which is, of course, quite a different thing.

# N E X T M O N T H

**E**QUIPMENT tests in August will be headed by our exclusive first review of the long-awaited Cambridge Audio CD2 '16-bit, 16-times oversampling' Compact Disc player, while Martin Colloms will be testing some major US pre- and power amplifiers. Following Sony's 'ES' initiative, we will be offering complete lab and subjective tests on the company's latest ES-series amplifier and tuner to see whether these really do offer a sonic challenge to UK competition—provided, in this case, by the A&R Arcam Delta amplifier and tuner.

Additional equipment tests will include Ken Kessler's review, held over from this month, of the astonishing Tandberg 3014 cassette deck; a searching assessment of the spectacular Clearaudio cartridge range, including the much-acclaimed and very unusual Pradikat; first tests

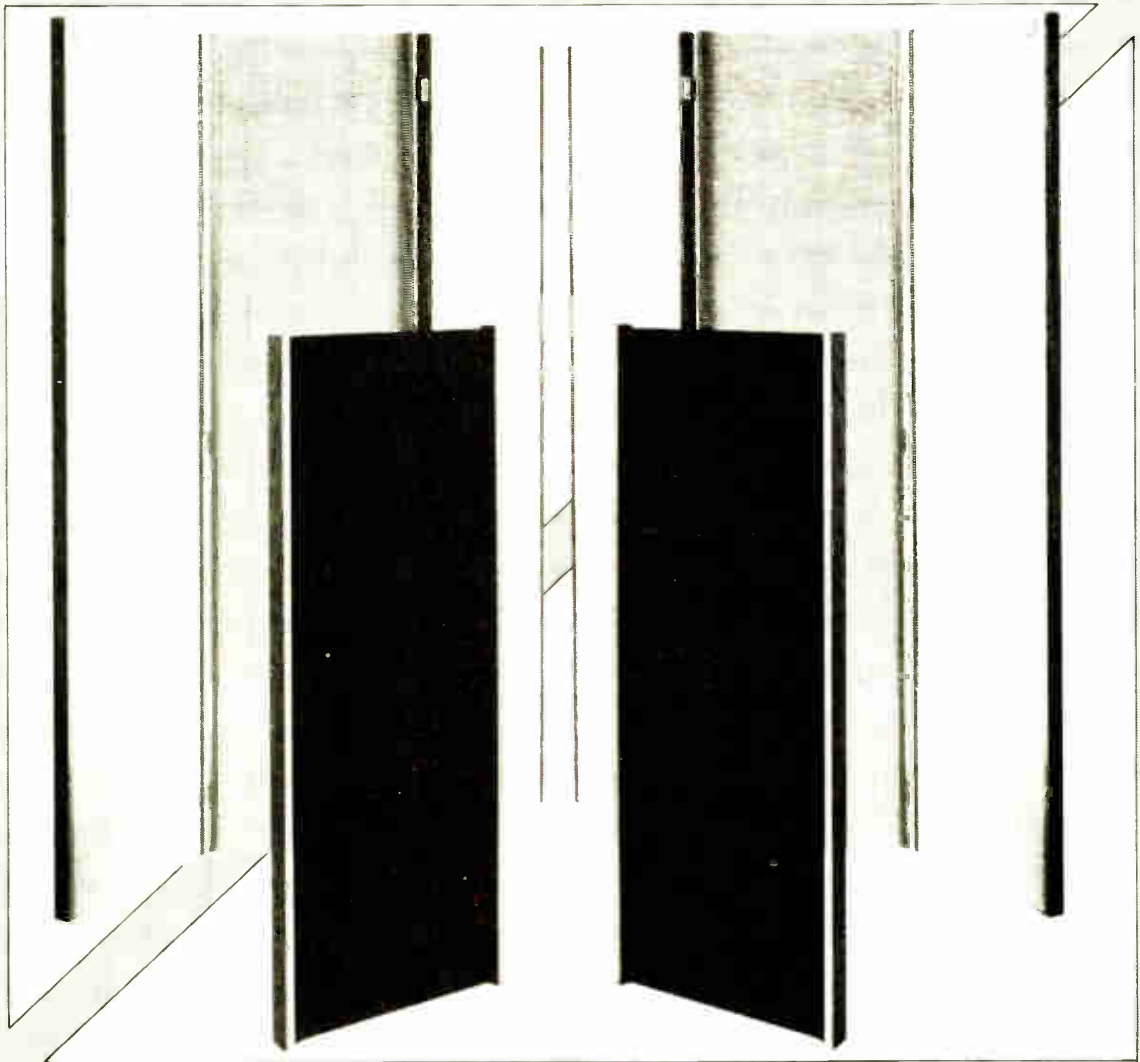


New-generation 'Discman', the Sony D100

on the new Wharfedale Super Diamond loudspeaker; and a report on Sony's most jewel-like 'Discman' to date, the slim and sophisticated D100.

Features for August include a full report of the Summer Consumer Electronics Show, Chicago, where many new UK products as well as US ones will be seen for the first time and where, for the first time this year, *HFN/RR* had its own stand; more traveller's tales from KK in the Land of the Rising Sun, which will include some first impressions of Compact Disc Video; an interview with 'single strand' exponent, Denis Morecroft; Stanley Kelly's history of audio; and the final episode of 'Inside R-DAT'. To make sure you don't miss it, order from your newsagent now. Or take out a subscription, and give yourself a chance of winning a free pair of Beyer headphones—details on page 104. ●

# MAGNEPLANAR RADIATING GLORY



The world of high-end hi-fi equipment is crowded with questionable components. However, within this realm there exists a valid sonic hierarchy. It is difficult, without expert assistance, for the music lover to make selections from this electronic jungle: Absolute Sounds was created for the purpose of making your choice a wise one. To provide equipment worthy of the connoisseur, Absolute Sounds has searched the world for components without equal and tested them for their total excellence. We would like to introduce to you the range of Magneplanar loudspeakers from the United States.

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The MG-III: "These speakers can create an exceptionally holographic soundstage, that defies the physical boundaries of the two panels." *Hi-Fi Answers*, July 1985.

"It is as if the transducing mechanism perpetually takes a back stage position relative to the program." *Hi-Fi News & Record Review*, June 1984.

The SMGa: "The SMGa is a little gem." *Hi-Fi News & Record Review*, February 1985.

The MG1-B: "This 'hanging together', or coherence of the sound is the quality that is going to make the Magneplanar MG1-B a hard act to follow." *Hi-Fi Answers*, December 1984.

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## Copycode disaster

**From: Martin Colloms, London**

Dear Sir, I would like it placed firmly on record that I was not informed of or invited to the two London press conferences held on the new Copycode proposal. I have learned that the proponents, the IFPI assisted by CBS, claim to have invited all interested parties for discussion and consultation, yet my information indicates a singular absence of the audio press at the May 7 meeting the Mayfair Hotel and at the May 8 event at EMI studios, Abbey Road.

The Copycode proposals consist of the addition of a filter unit to the record mastering chain, which inserts a notch 60 to 90dB deep at 3838Hz. In the context of genuine hi-fi and high-quality audio sound, such a filter will be destructive to fidelity and will have serious effects on timbre in the upper midrange, and is likely to be still more destructive of stereo image stability and focus. The audio industry is fighting for still better sound quality; however, this Copycode proposal constitutes a considerable setback, one which would affect all recorded music for public sale, regardless of whether the consumer intends to make personal copies or not. It has been reported to me that while the informal demonstrations at the Mayfair Hotel resulted in marginal audibility of the Copycode process, those at Abbey Road showed a clear alteration in sound quality of the upper notes of solo piano. During these latter proceedings CBS personnel were no longer talking of 'an inaudible Copycode', and were reduced to discussing it as 'an acceptable compromise', and saying that perhaps the recording engineers could switch it in and out according to taste, or the preference of the performer. Also heard: 'most people wouldn't be able to hear it on pop music, so it's going to be all right'.

I am horrified by these reports. This Copycode, by implication, will degrade the fidelity of all good audio systems with a spoiler branded on every record, tape or disc bought. A quick head count of some major recording engineers and producers, Tony Griffiths of Decca, Michael Gray of EMI, David Stripp of the BBC, and Tony Faulkner, revealed that they were similarly concerned. Copyright protection cannot be worth such a price to sound quality.  
Yours faithfully

[We should point out that *HFN/RR*'s editorial office did receive an official invitation to the May 7 meeting at the Mayfair Hotel, which was attended by Barry Fox; following the London showings, it would appear that political decisions on Copycode cannot be far away, and Barry will be reporting on this aspect in next month's 'Technology'. While awaiting developments, we seem to be exploring the subject from all angles: see 'Comment' for our view of Copycode, and for an 'official' view of DAT, and see KK's Japanese report (p35) for a Far East perspective - Ed]

## Anti-digital 'nonsense'

**From: John Oakley, Kingston, Surrey**

Dear Sir, I would like to respond to the anti-digital/CD nonsense in the Max Townshend and Harry Pearson articles (*HFN/RR* May).

About the supposedly 'scientific' Stoke-on-Trent, Elite Rock vs CD experiment that is claimed to prove the superiority of analogue over digital, I would ask these questions, which Max might like to answer:

- 1) Why was only one direct-cut disc used and not a whole batch of standard LPs?
- 2) Why were no demanding classical tracks

included in the comparison.

3) Apparently the studio DJ preferred the Rock. If so, what high quality speakers were used to monitor the session?

4) Of the group that responded, was anyone asked why they favoured one or the other?

5) What equipment were those who responded using to listen to the test? (If they were using, or, indeed had chosen as their hi-fi, rack systems, were they in a fit position to judge anything?)

If these questions remain unanswered then the whole enterprise appears highly dubious, even as an advertising ploy. I suppose if you make your money out of turntables (or as a dealer, out of the mystique of the tweak or the upgrade), dislike of CD must be inevitable but I don't think criticism of it can be based on half truths or, in some cases, downright dishonesty. To listen to the pro-analogue lobby with its twaddle about the CD compromise one would suppose that analogue reproduces accurately what happened at the recording venue. Well, leaving aside the fact that most of the world's recording engineers and top-flight musicians disagree with that, direct-cut came along as a not very practical way around the problem of analogue taping degrading the signal, didn't it? Even on such basic parameters as dynamic range and channel separation, vinyl falls short of the ideal. With this ground cut from beneath their feet, its supporters are reduced to talking about vague, subjective areas like musicality and euphonious sound, which can mean all things to all men.

They also neglect to point out that a high-end turntable set-up actually means spending from around £1000 upwards (£12,000 for a Goldmund, I believe!?) for equipment that will be mechanically degrading the signal in less than a year, that will be wearing the high frequencies in the groove off from Day One and in which just the build up of dust on the stylus during the playing of a side can make a garbled nonsense of the music. These are just a few of the vinyl compromises. How many are there altogether, I wonder?

As an avid score reader and fairly regular concert-goer, I also find Max's comment about CD giving an incomplete picture quite ridiculous. I constantly find CD allows me to notice subtleties of scoring, colouring, doubling and marking that I'd missed before under the surface noise, coloration and compression of vinyl, as well as presenting that all-important tangible sense of reality.

There is not enough space to tackle each point raised in Harry's article (although it should be done!). Most of it could be demolished with reference to what goes on in live concerts, how we perceive sounds, how un-euphonious many live instruments sound *fortissimo* in their top register, the choice of recording venue and microphone placement, the amount of compression at climaxes on vinyl discs and the fundamental problem of squashing a symphony orchestra between two speakers. However, on the vaunted matter of CD not being able to reproduce reverberation (which on Harry's Reiner disc probably means post-echo), I would point any interested party to these CDs to disprove his point. Ashkenazy Rachmaninov Concertos 2 and 4 (clear Concertgebouw reverberation signature), Solti, Mahler 3 (eight horns centre to left with clear reflection on the right), Dutoit, Falla *Three Cornered Hat* (clearly different reverberations for the distant soprano, and the 'Olé's and claps of the closer, right, double-bass players) and, Sinopoli, Mahler 5 (strong reflection of first trumpet at the opening, plus a curious placement of the six horns, back



left, throughout).

Meanwhile, back at Stoke-on-Trent. If he is to retain any credibility I would suggest Max repeats an analogue vs CD test, preferably on Radio 3 (where many listeners will have adequate aerials and equipment) and at Penta (using neutral speakers) with these sections:

- 1) *The Master Tape Test*. Master tapes of varying vintages played with each one followed, in different orders, by blind A/B playings of the associated vinyls and CDs. The audience is asked to mark which comes closer to the master with the results given at the end.
- 2) *The Classical Test*. Demanding classical tracks played on each system. (The end of the first movement of the Mahler 8 should prove ideal to demonstrate typical analogue end-of-side chaos.)
- 3) *The Longevity or Value for Money Test*. A one year old, used, untweaked Rock with original, year old, expensive, m-c cartridge playing four-year-old, cared for, records compared with similar vintage CD player and discs.

Over to you Max!  
Yours faithfully

[Mr Oakley raises too many points to be answered here, but we are sure many readers will be interested to know that we are planning a review of the current Rock fairly soon - Ed]

## Enjoying black vinyl

**From: JK Bodley Scott, Axminster, Devon**

Dear Sir, A reader of *HFN/RR* since the late 1950s, I have often been tempted to join in some of the controversies which have occupied your pages over the years. I can no longer refrain from adding my piece to the CD vs. black vinyl debate, sterile though it may largely be, which, after a merciful interval, seems to have reared its head again in the May issue.

I do not object to the extreme anti-CD lobby's pursuit of their illusory crock of gold, but I do object to their apparent assumption that those who do not buy their line are either deaf, have been brain-washed by the 'Perfect Sound Forever' hype of the CD ad-men, or are dazzled by technology.

I have been collecting and listening to LPs for thirty years, via, I hope, systems of increasing fidelity. For the past two years I have also listened to a considerable number of CDs via an 'improved' first generation Philips-based player. I would claim to be a music-lover with a strong interest in good quality sound, and an engineer's interest in hi-fi, rather than a fanatical audiophile. I also participate regularly in live music-making as well as attending quite a few concerts and recitals. Over the years I have built

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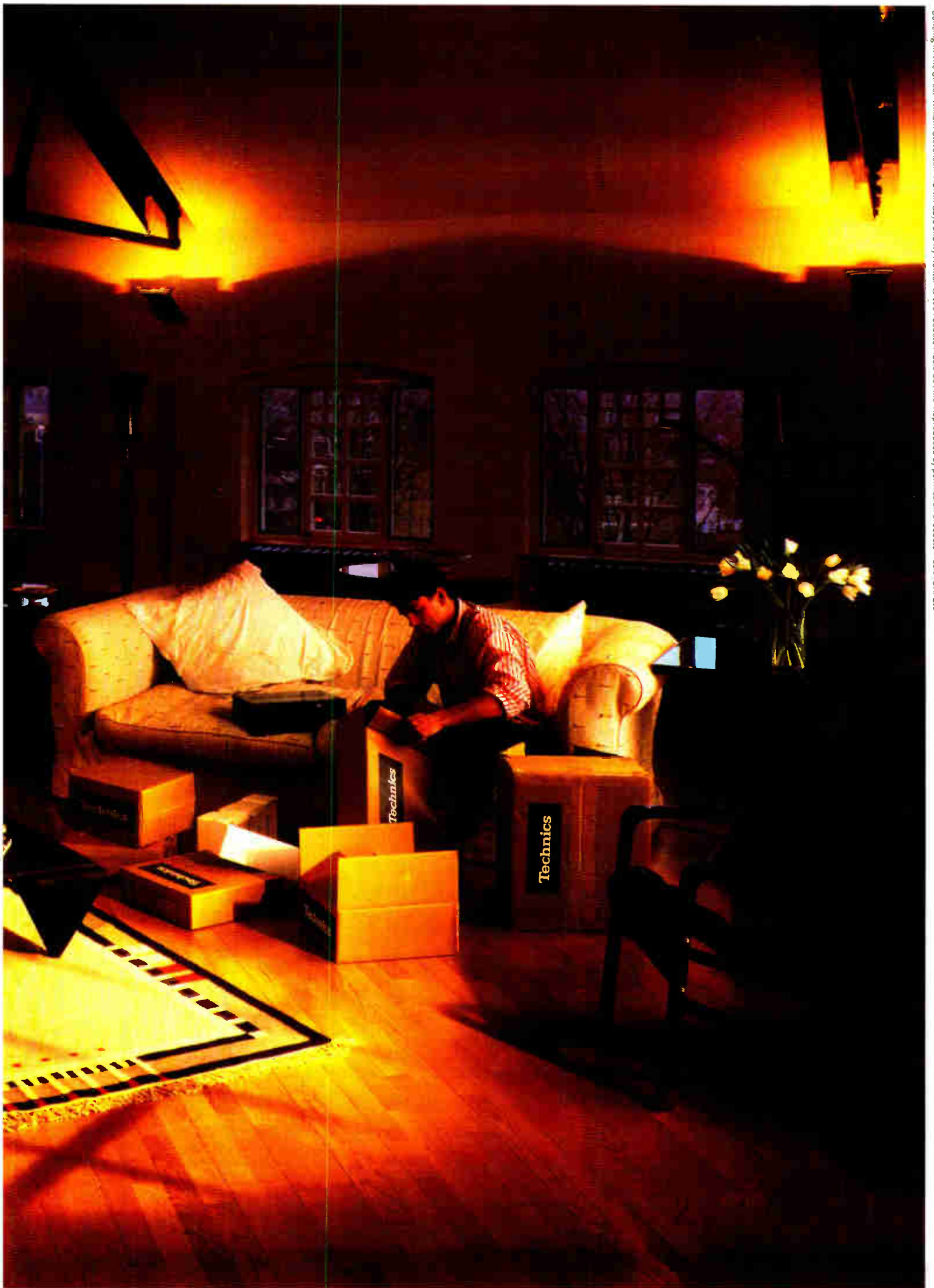
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for the remarks which follow.

After reading the piece by Harry Pearson of *The Absolute Sound* and Max Townshend's remarks (*HFN/RR* May), and bearing in mind the known position of such manufacturers as Linn, Naim etc. and other earlier contributions to *HFN/RR* in similar vein, I cannot but comment that the majority of those in that particular camp can hardly be regarded as impartial, having in many cases strong vested interests in perpetuating the myth of the indisputable superiority of the all-analogue vinyl disc. While reflecting on this, I recently carried out a simple experiment with no pretensions to scientific validity, but of relevance to the ordinary music lover and record collector, I think. I extracted from my collection several analogue recordings on LP of Beethoven's *Eroica*, of vintage varying from mid-'50s mono (Klemperer) to late '70s. After playing these via a Linn LP12 front end, I played Hogwood's CD version. Leaving aside all questions of comparative performance, authenticity of instruments etc. and allowing for the increased background noise level of the older LPs, there remained no doubt in my mind that the CD gave the closer approximation to the *sonic* experience of listening to a live performance.

This is but one example. One could give others, and indeed one could give examples where the comparison came down in favour of the analogue vinyl disc. The point I am trying to make is that one only needs one or two such examples to refute the extreme position of the anti-CD lobby. I do not dispute the proposition that CD is far from the 'perfect sound for ever' of the advertising hype, or that its fidelity could be improved perhaps by more bits and higher sampling rates etc. etc. quite apart from improving players and discs on the existing standard. But if CD as it stands is a 'fatally flawed medium incapable of true high fidelity reproduction' (whatever 'true high fidelity' may be), then so, for different reasons, is the analogue vinyl disc. This is particularly true in the real world inhabited by commercially-produced pressings on which most gramophone users have to depend for the greater part of their listening, as opposed to the very few esoteric 'super' vinyl recordings which will be all that the committed 'analogue-only-and-for-ever' enthusiasts will be left with, once their 1960s pressings finally wear out. For we must not forget that to them most post 1960s and all digitally-mastered vinyl is anathema just as much as CD (logically it should be more so).

My advice to the music-loving record collector would be to forget 'digitophobia', stop worrying about low-level enharmonic distortion, inadequate D/A converters, poorly focused lasers, insufficient bits and sampling rates etc. and do what the analogue vinyl lobby are always telling us to do. Listen with an open mind. If you do, you are likely to find, when using a half-decent player into a decent system, preferably not specifically tailored for black vinyl reproduction, that some CDs sound magnificent by any current standards, quite a lot sound pretty good, some fair to middling, and some sound downright horrible. So what is new? Has not it always been rather like that with your vinyl LPs?

Well, something has changed, yes. We have got rid of a lot of distortions (using the term in the widest sense) afflicting black vinyl records, and instead we have a different set of distortions. Generally speaking, as one might expect, the sound is different. Some claim that the specific distortions which afflict CDs 'destroy the music', whatever that means. Others disagree, including, so far as I can ascertain, the

majority of practising musicians and a lot of people who are more interested in music than the minutiae of audiophile fanaticism. These people I think find the shortcomings and tribulations of vinyl disc replay (does one need to list them?) more destructive of their musical enjoyment than the supposedly lethal failings of CD. And this is not because they have all been listening to their LPs on mediocre Japanese rack systems, as some would have one believe, nor because they have all uncritically swallowed the CD promoters' hype.

For my part, I will continue to listen to and enjoy my fairly substantial collection of black vinyl LPs, and may even continue to add to it. But I am also convinced of the benefits, both sonic and practical, of the best of CD. Good CDs do not destroy the music, even in the present state of the art, and some of them are, in my estimation, sonically superior to most if not all black vinyl. This is particularly noticeable in the case of two types of music in which I am interested: large-scale choral works on the one hand, and piano works on the other, both notoriously difficult to reproduce adequately on any hi-fi system. I am convinced that better recording techniques, and better players, will still further reduce the justification for rubbishing CD, while emphasising the ways in which this medium is already manifestly superior to black vinyl.

It is sometimes argued that since we have not yet, after 30 years of the stereo LP, perfected the art of getting the best out of the old technology, why do we need a new technology? Well, one could no doubt have said the same when the internal combustion engine started to oust the steam engine, and with equal justification. I am afraid that the 'analogue vinyl only' protagonists are on a losing wicket, despite the current upsurge in interest in analogue front-ends reported by dealers. The earth is not flat, however much we might wish that it were.  
*Yours faithfully*

## Historical accuracy

**From: George Brock-Nannestad, Denmark**  
*Dear Sir*, Robert Parker's indignant 700-word comment (*HFN/RR* March) on Ken Kessler's 100 word warning about Bessie Smith seems to indicate a sore toe – even though Denis Argent is quite happy about similar treatment of Bix Beiderbecke. Having studied transfers of recordings from an objective viewpoint for a number of years, perhaps I can suggest what Ken Kessler's ears told him.

The first thing to do in any historical transfer which purports to have removed 'noise' is to play it with a playback equalisation which compensates for the loss of treble in the IEC curve. In most cases this will give away a lot about the method used.

Listening to Robert Parker's product in the above manner, in mono, apart from the unending reverberation, one continuously hears a distortion that is remarkably like that which used to be termed 'end of side distortion'. This was caused by using a stylus which was too large in the direction along the groove to properly trace the short wavelengths near the centre of the record. Bearing in mind that distortion means an increase of high frequencies, a horrible thought strikes me. What if Robert Parker had found out that deliberately distorting high volume signals would allow heavier filtering, thereby increasing relatively the high frequency content of the finished product, without enhancing the noise.

In fact, using a stylus that is too large lengthwise one would get an increase of

perceived bandwidth in transients without associated 'pumping', and the badly fitting stylus would also reduce some of the noise pick-up from worn parts of the groove. I think that the above suggested hypothesis may explain why Bessie Smith sounds abominably muffled – she was originally recorded at a low volume which will not give rise to the 'beneficial' distortion, whereas Fats Waller's singing becomes almost explosive. In fact, it was the terrible distortion of this piano on BBC Reb 598 which brought these phenomena to my attention. I think that the reverberation and stereo are only an attempt to gloss over the above atrocities, but in any case it is quite simple to do digitally, along with filtering and other manipulations.

Having now tried to give Ken Kessler a technical interpretation to back him up in his justified attempt at describing what his ears told him, may I address the other matter that this is all about: 'how historic recording artists would have sounded in live performance'. Well, anybody only slightly concerned with performance practice will know that musicians will not perform the same in a dead environment as in a reverberant one. All 78s pre-tape were 'live', and so the addition of reverberation after the event is definitely out. Unfortunately, the 'majority' does not know that, and that is a question of education to which Robert Parker's series is not the answer. However, I sincerely condone your comment that the series makes for an introduction to the concept of traditional jazz – those really catching on will undoubtedly go for the sources. It is to be avoided at all costs that a series of transfers like the present becomes the definitive issue in people's minds.  
*Yours faithfully*

## Mean CD playing time

**From: RSC Sheldon, London NW**  
*Dear Sir*, I feel absolutely certain that I write this brief letter on behalf of many readers who are purchasers of Compact Discs. It is a letter which I request you to publish in blazing and glaring 'Black & White' since this appears to be the only way to put across the message to record companies who treat their public in the downright contemptuous manner which EMI have adopted.

It began right back at the beginning of the 1950s when Decca introduced the first wonderful batches of Long-Playing Records (mono). It took EMI over two years to finally accept the fact that the 78rpm record was 'out' and reluctantly issued its own long playing records. True to form, Decca leapt ahead and issued its first stereo LPs early in the mid-1950s whilst EMI sat back and grumbled and did very little for the next two years or so about catering for its public and doing something about issuing its own stereo LPs. [I remember that the first month of stereo releases brought as many, if not more, EMIs than Deccas! – **Mus Ed**] The sad fact, however, is that it is EMI, and not Decca, who have the most incredible recorded performances gathering both dust and decay, rotting away in the archives whilst their futile Marketing Dept plan yet another series of boring releases of the popular classics performed by 'kids' (conductors and soloists) in very many cases with so little to say to us through their non-interpretations owing to their little experience of living with the works they all rush to record.

To cap all of this, EMI has continued in its former sloppy manner and is still, it seems, unable to accept the fact that the LP record (Yes!!! even EMI's glorified DMM LP!!!) is quickly on its last journey out and that the Compact Disc is not only here, but is here to

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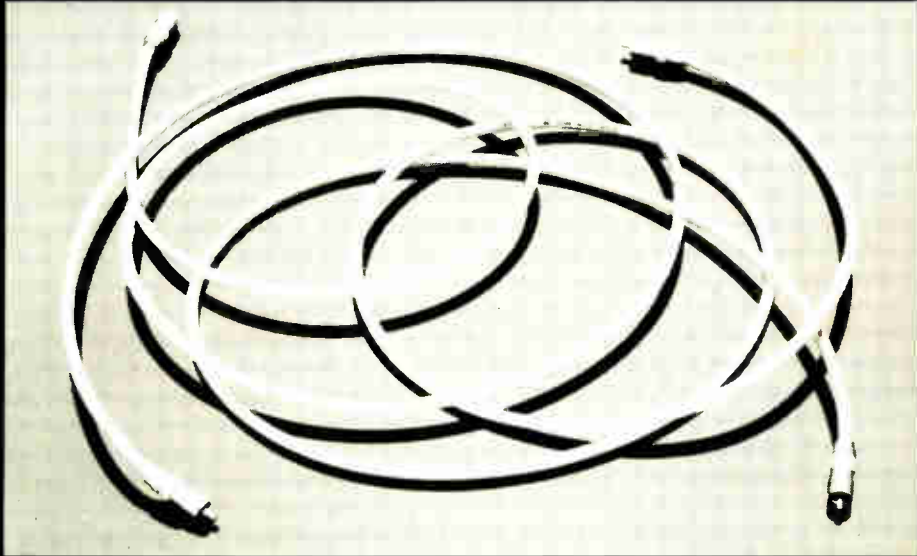
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stay for very many years to come. So it clearly appears that it is trying its hardest to destroy the success of the CD. Firstly, EMI simply sat back and believed that it would die a quick death in the manner of 'Quadraphonic Sound' of the 1970s. After two years, EMI had done very little for the CD except planned an opening for the now opened CD pressing plant at Swindon. Instead of the wonderful flood of CDs then, we had just the usual trickle of often boring modern recordings/performances (Muti/Barenboim/Perlman and their ilk) in place of the glorious archive of supreme performances which EMI alone have to hand and are sinfully not even remembered by some of the staff in EMI's Classical Departments, to whom I have on several occasions spoken to by phone.

I cite the following recent examples as proof that EMI are not anxious to cater for the public who collect Compact Discs: Brahms, *The Four Symphonies* – Gunter Wand: only two DMM LP records for the whole four symphonies costing £6.50 but EMI have planned release of only three of *The Four Symphonies* for Compact Disc. Why no release planned of the 4th Symphony? [In fact, No.4 was among EMI's first DHM Compact Disc releases on CDC 169 5302, last November – Mus Ed] Why no fill-ups with only 36 minutes per CD and at full price? If the 4th Symphony were available, the four CDs would cost £48 whilst the two LPs cost only £6.50!

Justify that if you can, EMI. Bizet, *Carmen* (Callas/Prêtre). Available on only two DMM LPs for £6.50 but on three Compact Discs costing £36. Justify that too! The list is endless, whilst the smaller and fabulously enterprising companies such as Chandos, Hyperion, PRT, and the like continue to reap success and deservedly so.

In conclusion, I state now that I shall not support companies such as EMI who treat their public with such contempt. No matter if a performance is a truly great one, if it is offered to the public at a greedy price or in a miserly format, I shall buy neither the Compact Disc(s) nor the LPs. Yes; this goes for Decca who are also able to be very mean as with their current Dvorak 7th symphony (Dohnanyi) which offers only 36 minutes with no fill-up at full price. Indeed, I have already collected my CD today of the much finer Chandos performance and recording and which contains no less than a further 29 minutes of music in addition to the symphony. I do hope that other readers of your magazine will help support me in my efforts to teach companies such as EMI a lesson by withdrawing their patronage of the guilty record companies. Yet on the other hand, let us unite hands in full assistance and support to those like Chandos and Hyperion, who give us such riches in every respect. Long shall I, for one, be loyal to their kind.  
Yours faithfully

## Dominance of CD

**From: Michael Quinlan, Surbiton**  
Dear Sir, In the April 1987 issue I was concerned to note a quite sudden and, to my way of thinking, alarming diminution of classical LP reviews in favour of the new technology.

Seeing the May issue, my concern has reached panic proportions. In the first review section, ie, before the start of 'Collections', there are 73 CD reviews and only 10 LPs. Admittedly, 22 of the CD reviews are reissues (presumably mostly of LPs). At the present rate of change, there will be no LP reviews at all in the June issue, which despite some five years happy reading I would

not then buy. In view of the comment in the magazine on the issue of CD vs LP, and in particular the views of the Assistant Editor and looking at the damning Pearson article (*HFN/RR* May) quoted with apparent approval, you must owe it to those of your readers who are of like mind to continue LP reviews of classical music (I am also interested in popular).

If it is necessary to review all CD issues (as I suspect it might be to maintain circulation and street cred in this world of blind belief in high technology) then I think that you must ask your reviewers to comment on both formats in each review. Incidentally, it does appear that some of them have more faith than Pearson in the CD format. May we know once more details of the equipment used for listening by the reviewers (as we did in a most interesting article some years ago) – no-one is saying that CD is not a great advance on mid-fi – we readers trust that the reviewers are not listening to LPs on out-dated mid-fi systems – especially front ends.

Please continue to produce the best hi-fi magazine available and, being open-minded, please let me know when I need to give up LPs and move to CD.  
Yours faithfully

## George Martin was right

**From: Douglas N Thomson, Edinburgh**  
Dear Sir, Robert Parker reckons that his old Jazz 78s sound better processed into fake stereo. George Martin says that the early Beatles albums were never intended to be anything other than mono, and that the stereo versions sound horrible. Having bought and listened to the first four Beatles CDs, which are of course in mono, I have to say that I think George Martin is correct and Robert Parker is wrong.  
Yours faithfully

PS Is the Apogee Caliper a brake with tradition?

## Not a Beatles crank

**From: B Taylor, Hants, PO4 8JX**  
Dear Sir, I am writing with regard to your article about the Beatles on CD (*HFN/RR* May '87).

No, Ken, you are not some 'crank writer' trying to be controversial. You have said what everybody seems to be saying about the mono CDs of *A Hard Day's Night* and *Beatles For Sale*, except the Hi-Fi/Music and Daily Press. I hope EMI soon take notice. I, too, have been playing my vinyl albums of these releases and they sound wonderful in stereo (the unknown engineer deserves some credit). However, there seem to be conflicting stories regarding these CDs in various articles in the press.

Engineers at Abbey Road (Messrs Mews, Vince and Jarrett) remixed the original mono and stereo masters, presumably using digital equipment. This may explain the CD packaging information stating ADD, as was probably intended originally. At the same time, George Martin apparently remixed in stereo at his Air Studio in LA.

These mixes were turned down by EMI and what we seem to have got as the final product is the original mono mixes done by George Martin in 1963-64. This is backed up by EMI's official release 'Transferred Direct from Original Master', no EQ etc. Hence the apparently last-minute change to AAD via those small sticky labels. I can therefore only come to one conclusion and that is that Mr Martin must have a great deal of influence or power at EMI over any product that bears his name as producer, and if they wouldn't use his remixes, he wouldn't allow anyone else's to be used (past or present),

even though we the public have been buying 'the unknown' producer's work for over 20 years.

It seems to me a case of the buying public suffering because of political infighting at EMI. Also, if I see one more reference to the cultural shock of hearing these recordings via CD instead of scratched and worn on a Dansette Record Player, I will despair. Of course EMI could have pleased everyone by producing mono and stereo CDs and letting the buyer decide. Not exactly a novel idea after all, or do they want us to buy both? This would also please the poor ill-informed people I've spoken to who say, 'Well of course they should be mono, all records were mono in the sixties'. *Rubbish!* Or maybe ignorance is bliss after all.

When I queried the release of these albums in mono with my dealer, he promised to find out the views of the EMI Rep. Answer: The 'enhanced stereo versions were too hissy, and lacked power and sounded wishy-washy'. *Rubbish!* Do they take us for idiots? I think they do, but I know what I hear.

Reference your article where you say that George Martin remixed the early two-track recordings for some albums in the '70s. I assume you refer to *Rock & Roll Music* now on MFP series. These seem to have the left/right channels moved towards centre to give a tighter image and in my opinion sound quite good. In fact a little more work along those lines could be quite satisfying to listen to remembering, of course, one could always use a mono button if one chose to. Or maybe the purists would say that the original mono mix is different from the stereo to mono mix? (Surely this could only have been a difference in levels of vocal vs backing?)

Finally, regarding *Rubber Soul*, a 4-track recording that appears to have been mixed as a straight left and right image with a hole in the centre, à la 'Please Please Me' etc. This album doesn't seem to be causing any controversy so one has to assume that it was done by Mr Martin. Is it therefore the original mix done with the Beatles present etc, etc? If so, it's a shame the UNKNOWN engineer wasn't left to do it.

Thanks again for speaking up for the public.  
Yours faithfully

## Up in smoke with CD tests

**From: PES Webb, Dorset**  
Dear Sir, I am writing to draw your attention, and that of your readers, to a 'health hazard' when using your *Hi-Fi News* Test Compact Disc HFN 003. When using this CD on 'spot frequency response' bands 25-35 in order to check the overall performance of a Quad 404/Audio Lab 8000P driving a pair of Audiostatic ES 180s, I was not a little alarmed to observe smoke emanating from the speaker cabinets!

Subsequent investigation revealed that a high wattage ceramic resistor in the crossover network was dissipating so much heat that it was burning the PC board on which it was mounted. This excessive heat was being generated mainly in the 315-1001-3150 bands, even though these frequencies last only about 14 seconds each, and the amplifier output was a very modest 10-20 watts (a potential 100-150 watts are available).

Fortunately there was no permanent damage sustained, but I believe that other users of this CD should be very careful of their tweeters and/or crossover units when using these particular frequency bands on their expensive equipment, and a warning to that effect should be included with each copy of the CD sold.  
Yours faithfully

[HFN 003 programme notes do warn that the test tones could damage tweeters – Ed]

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Ken Kessler, our resident headphone user, assesses a Class-A headphone amplifier

# HEADCASE

**W**HEN IT DAWNED ON US I don't quite know, but amidst the scouring of catalogues and picking of brains for new accessories we realised that many modern preamps have dispensed with headphone outlets. With a number of CD players either lacking such facilities altogether or lacking a volume control for the existing outlet, we felt that it was high time the public had access to a state-of-the-art headphone amplifier.

The Headcase comes in the same elegant box as the Flutterbuster, its front containing mains on/off combined with the volume control, a 1/4in. socket for the headphones, and an LED to show its status. The back contains the necessary socketry and the mains lead.

Designed by well-known amplifier and recording guru, Tim de Paravicini, the Headcase is made from top-quality components and it operates in real, *bona fide*, genuine, *richtige waar* Class-A, and is therefore subject to the usual pros and cons of that type of circuit. The good news is that the sound is sweet and controlled and devoid of distortion, while the bad news is that it doesn't really sound its best until it's been on for about 30 minutes. My sample lacked its case, so I can't comment on whether or not Headcase owners will have to suffer the smell of singed wood, but a hand held over the unit sensed no abnormal amount of heat. (At this power rating, it would be ludicrous if it did.)

I ran the Headcase through the Audio Research SP-8 Mk.II to audition LP, cassette, and open-reel tape, and with the Sony D-100 Discman via that portable's line output. Cables are *very* critical with this device - it shows up everything about interconnects; I settled on the Randall TX Flex. Headphones sampled included various Walkman types, the Beyer DT48 and Sennheiser's HD-540. In every case, there was enough level available to turn one's brains to yoghurt. Headbangers will run this on '11' as Spinal Tap would say.

The sound is something else: delicate, open, spacious, detailed. But the control! I simply could not believe the bass slam available via the Headcase, evident when listening to the likes of the Mobile Fidelity CD of Booker T and The MGs' *McLemore Avenue*. It proved better than the headphone output on the D-100, the Marantz PM-4, and any of the tape decks to hand. At £79.95, the Headcase is not exactly a giveaway, but its sound quality, pedigree, and construction justify every penny. ●



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- Little Feat: *Feats don't fail me now*  Randy Newman: *Little Criminals*  Santana: *Borboletta*  Weather Report: *Mysterious Traveller*  Jackson Browne: *Running on empty*  Eagles: *Desperado*  Earl Klugh: *Living inside your love*  Paul McCartney & Wings: *Band on the run*  Delius: *Orchestral works*  Elgar: *Symphony No.2*
- **HFN/RR interlinks**
- HMC phono-to-phono £29.95
- HMC tonearm cable (phono) £38.50
- WBT-0101 phono plugs (pair) £21
- KEF Soundbase Speaker Stand (pair) £29.95
- **Inca Tech mains plug & socket set**
- UK version £25
- European version £32
- Flutterbuster £79.95 (state turntable)
- Decca tonearm £49
- HFN/RR Test CD HFN 003 £11.95
- Authenticity Mini-vac £8.95
- **Michell Tenderfeet (set of 3) small £5.45  Large £8.45**
- Cobra FM Aerial £34.98
- HFN/RR CD Carrydisc £10.95
- HFN/RR Toolkit £32.50
- Record Interface Mat £28.50
- HFN/RR Headcase £79.95

NAME (caps please) \_\_\_\_\_

ADDRESS \_\_\_\_\_

\_\_\_\_\_

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I enclose PO/Cheque/MO\* \*Please delete as necessary.

I wish to pay by Access/Visa/Diners/Amex\*

My card number is \_\_\_\_\_ Expiry date \_\_\_\_\_

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Signature \_\_\_\_\_

Please send your orders to HFN/RR Accessories Club, PO Box 200, Bedford, MK40 1YH.  
 Cheques should be made payable to HFN/RR Accessories Club.  
 Delivery subject to availability.  
 Accessories Club hotline ☎ 0234 741152  
**NON UK SALES VAT FREE BUT WHERE APPLICABLE SUBJECT TO ADDITIONAL CARRIAGE CHARGES.**  
 Photo copies of this form are acceptable. E&OE

# JAZZ

## ON COMPACT DISC

### INTRODUCING STATE-OF-THE-ART DIGITAL RECORDINGS FROM DMP\*

\*Digital Music Products Inc.

DMP is a new jazz-based label producing music exclusively for the Compact Disc format. The only company using purist, Class-A techniques, DMP insists that all performances are recorded live in the studio. All recording, mixing, and mastering are purely digital.

Compact Discs from DMP contain a full hour of music yielding dynamic range and sonic accuracy not found in other formats. Experience DMP's Digital Revelation.



### DIGITAL AUDIO BEST JAZZ CD OF 1985

- Warren Bernhardt. *Trio '83* - CD 441
- Jay Leonhart. *Salamander Pie* - CD 442
- Flim & the BBs. *Tricycle* - CD 443
- Joe Beck. *Relaxin'* - CD 444
- Billy Barber. *Shades of Gray* - CD 445
- Joe Beck. *Friends* - CD 446
- Flim & the BBs. *Tunnel* - CD 447
- The Pugh Taylor Project - CD 448
- Andy Laverne. *Liquid Silver* - CD 449
- Gerry Niewood. *Share My Dream* - CD 450
- Bob Mintzer Big Band. - CD 451
- John Tropea. *NY Cats Direct* - CD 453
- Flim & the BBs. *Big Notes* - CD 454
- Billy Barber. *Light House* - CD 455
- Bob Mintzer Big Band. *Camouflage* - CD 456
- Warren Bernhardt. *Hands on* - CD 457
- Flim & the BBs. *Neon* - CD 458

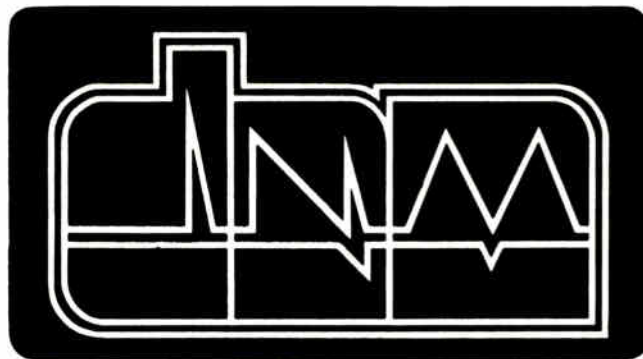
Send SAE for catalogue and list of dealers.

Name \_\_\_\_\_

Address \_\_\_\_\_



ABSOLUTE SOUNDS  
318 WORPLE ROAD, LONDON SW20 8QU  
(sole UK importers of DMP Compact Discs)



## DNM. DESIGN.

### THE DNM POWER AMP IS HERE.

The DNM Power Amplifier is now in production. Over three years of research and development have resulted in a product that is really different to anything produced in the world.

DNM research is all encompassing producing new audio components as a spin-off from the main amplifier development programme. This design approach has resulted in new circuits, new chassis constructions including the first true star layout circuit boards, new materials and components like the solid core cables and the unique DNM audio electrolytic capacitors. These are so effective that many other sectors of the audio world are using DNM designed components.

A significant part of the new DNM Power Amplifier lies in the fact that it is fully star earthed in the same way as the Series 3 Pre-Amplifier.

Also the circuit topology and other aspects of the design are similar to that of the Pre-Amplifier resulting in an ideal partnership when the two units are combined.

The new Power Amplifier is compact and neat. It has enough power to drive normal domestic hi-fi systems to a realistic level but it reaches completely new performance levels further down the dynamic range producing breathtaking clarity and stereo image stability.

The DNM PRE-POWER combination, when used with a suitable signal source and with DNM solid core cable, will give you a new ease and accuracy of listening.

More information is available on both PRE-and POWER AMPLIFIERS. A full list of our carefully selected Dealers is also available on request.

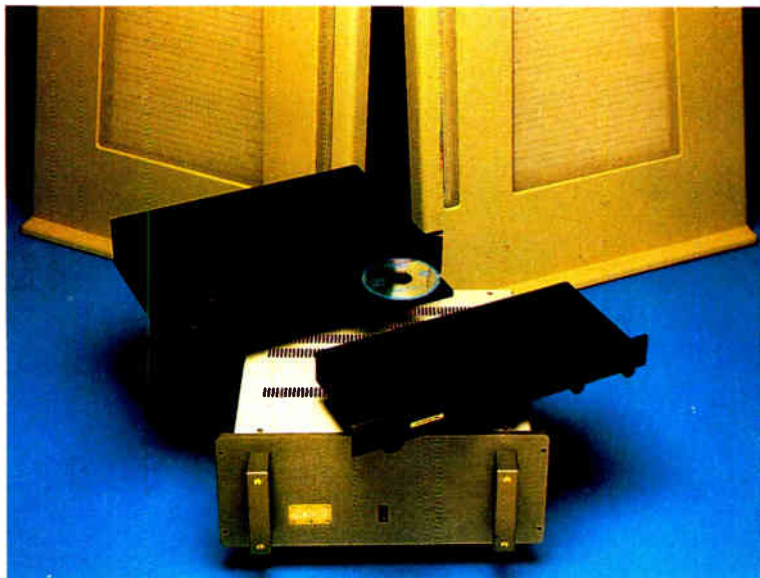
**DNM DESIGN,  
15 HIGHLAND AVENUE,  
BRENTWOOD, ESSEX, CM15 9DD.  
TEL: 0277 225865.**



# THE 1987 AUDIOPHILE COMPETITION

# WIN A £5000 DREAM SYSTEM

The culmination of our most challenging competition ever!



## PART THREE

At last! Here is the third and final part of the 1987 Audiophile Competition, in which you stand to win a £5000 system consisting of Kinergetics KCD20 Compact Disc Player, PS Audio 4.5 Preamplifier, Krell KS-A50 Power Amplifier and Apogee Caliper Loudspeakers. You need to complete all three parts (Part One appeared in the April issue and Part Two in May), sending them all together. Closing date for entries is July 31, 1987. And just in case you thought Parts One and Two were too easy, this final section should be a real challenge. But then, look at the prize, it's well worth the effort. . .

## THE QUESTIONS

- 1) A tonearm/cartridge combination has a resonant frequency of 10Hz. The cartridge has a compliance of 15cu. The arm has an effective mass of 11g. What is the mass of the cartridge?

---

- 2) A loudspeaker has a sensitivity of 85dB for 1W. How many watts are required, theoretically, to drive the speaker to SPLs of 100dB?

---

- 3) What British hi-fi maker has an entry in the *Oxford English Dictionary* as a generic term?

---

- 4) What turntable served as a murder weapon in an episode of *Columbo*?

---

5) The following cities, towns, or counties have served as model names for products from which companies?

- Berlin \_\_\_\_\_  
 Westminster \_\_\_\_\_  
 Clyde \_\_\_\_\_  
 Cornwall \_\_\_\_\_

6) What new development has resulted in hardware which can cope with five different software formats?

---

7) Which organisation pioneered the use of polypropylene as a speaker cone material, and which organisation now holds the world rights to this work?

---

8) Which recent motion picture featured as one of its characters a hi-fi salesman named Ken Kessler?

---

9) Which Japanese hi-fi manufacturers also produce the following goods?

- Motorcycles \_\_\_\_\_  
 Cameras \_\_\_\_\_  
 Vacuum cleaners \_\_\_\_\_  
 Pianos \_\_\_\_\_

10) Which American company produced a valve absolute phase inverter?

---

Please return this Part Three entry form along with your entries for Part One (published in the April issue) and Part Two (published in the May issue) to Audiophile Competition, *HFNRR*, Editorial, Link House, Dingwall Avenue, Croydon, Surrey CR9 2TA.

NAME \_\_\_\_\_  
(block caps please)

ADDRESS \_\_\_\_\_

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## COMPETITION RULES

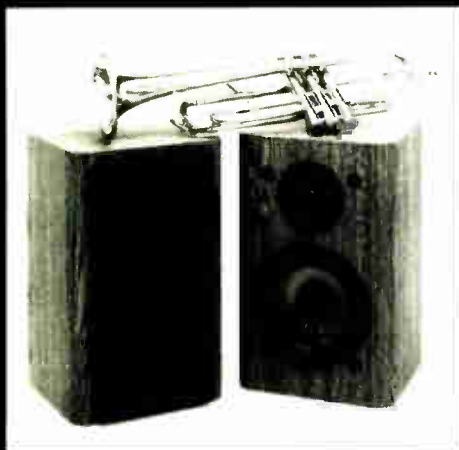
- 1) All entries must be on the entry forms provided. Photocopies will be acceptable, but only one entry per reader will be considered. Entrants must submit completed entry forms for all three parts in a single envelope. Incomplete entries will not be considered.
- 2) There is no cash or other alternative to the prizes.
- 3) Employees of Link House Magazines and associated companies, or their agents, or of the manufacturers and suppliers of the prize system components or their relatives are not eligible to enter the competition.
- 4) The competition is not open to readers living outside the United Kingdom.
- 5) The main prize will be awarded for the first set of correct answers opened. The Editor's decision shall be final and binding. No correspondence whatever will be entered into regarding the competition.
- 6) All entries must be received by Friday, July 31, 1987. The winner(s) will be notified by post and the results announced in the September 1987 issue.



## True state-of-the-art speakers

Infinity Systems produce what is universally regarded as the best loudspeaker ever made – the IRS.

Only a company with immense resources – human, artistic and technological – could achieve such a breakthrough design. This benchmark is ultimately the fertile source from which all Infinity loudspeakers are evolved: from the diminutive RS1000 to the mighty RS-IB.



The Infinity RS2000 at under £200 is already achieving the status of a 'classic'. What Hi-Fi concluded that it was  
"... a true state-of-the-art miniature."

### Hi-Fi Answers

observed that the RS2000  
"... sounds as vivid and as lively as anyone could wish... it has a lightness and delicacy of touch which takes it well beyond the standard set by even the LS3/5a, and which is unique in this class of loudspeaker."

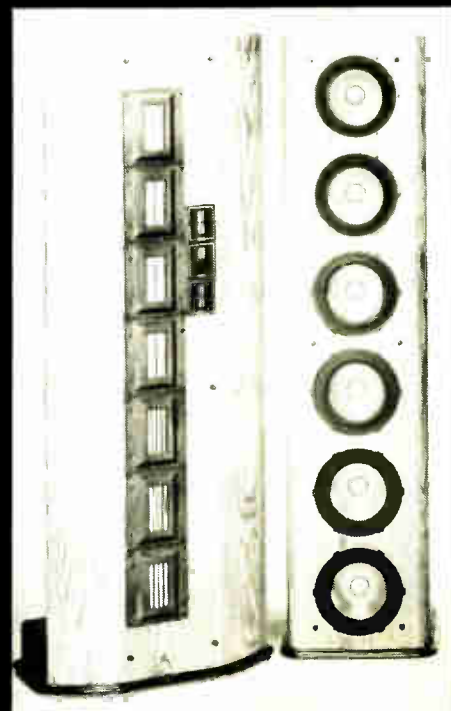
The larger RS4000 at £449 provides further gains in sound quality and Bass extension. This wonderfully musical loudspeaker possesses tremendous appeal:

"... sounds lucid and expressive in the midband, and stereo reproduction too is lively and involving. The whole speaker in fact is unusually agile, and the bass end 'lags' little compared to the treble... Be assured if you like what the Infinity does, you won't find anything really comparable elsewhere."

### Hi Fi Answers

Moving much higher up the range we have the Infinity RS-IB which has become the reference loudspeaker for some of the world's leading amplifier manufacturers, such as Audio Research and Conrad-Johnson. It is a loudspeaker system that audiophiles and music lovers everywhere dream about owning. The critics agree:  
"... the best speaker I have ever lived with."

### The Absolute Sound



Whatever your budget allows, Infinity loudspeakers will complete your audio system and make a major contribution to your musical satisfaction for the years to come.

**These amazing speakers are available from these specialist dealers:-**

Acoustic Arts, 101 St. Albans Road, Watford  
0923 45250/33011  
Aerco Hi Fi, 11 The Broadway, Woking, Surrey  
04862 4667  
Aston Audio, 4 West Street, Alderly Edge, Cheshire  
0625 582 704  
The Audio Concept, 9 Ley Side, Bromham, Beds  
02302 3048  
Alpha Hi Fi, 1 Guildhall Lane, Leicester  
0533 518 597  
Doug Brady Hi Fi, Kingsway Studios, Warrington  
0325 828 009  
John Chapman Hi Fi, 3 Plassy Crescent,  
Bournemouth 0202 570 307  
D F Clarke, 36 Lodge Road, Rusden, Northants  
0933 57349  
Critical Audience, Regent Arcade, Cheltenham  
0204 578757  
Derbyshire Hi Fi, 3 The Old Blacksmith Yard,  
Sadler Gate, Derby 0332 4463  
Elite Hi Fi, 178 Kings Road, Harrogate, Yorks  
0423 521 831  
Peter Ellis Audio, 27 Kirkgate, Newark, Notts  
0636 704 571  
Galaxy Audio Visual, Tottenham Court Road,  
London 01 637 2624

Harrow Audio, 27 Springfield Road, Harrow  
01 863 0938  
Hi Fi Western, 52 Cambrian Road, Newport, Gwent,  
Wales 0633 62790  
In Hi Fi, 63 George Street, Edinburgh 031 225 8854  
The Music Room, 50 Bridge Street, Manchester  
061 835 1366  
The Music Room, 221 Vincent Street, Glasgow  
041 248 7221  
Musical Images, 45 High Street, Hounslow, Middx  
01 570 7512

P J Equipment, 3 Bridge Street, Guildford, Surrey  
0483 504 801  
Precision Audio, 41 Crowhill Avenue, Cleethorpes  
0472 698 015  
Reigate Hi Fi, 69 High Street, Reigate 07372 23326  
Sound Decision, 106 Harley Road, Sale, Cheshire  
061 969 1074  
Soundsense, 350 Edgware Road, London  
01 402 2100  
Standens, 92A High Street, Tonbridge, Kent  
0732 353 540  
Stilton Hi Fi, The Bell, High Street, Stilton,  
Peterborough 0733 241 063  
Supersound, 35 Church Street, Nuneaton  
0203 345 253  
Suttons Hi Fi, 10 Gervis Place, Bournemouth  
0202 25512  
Upton Electronics, 31 Torquay Road, Paignton,  
Devon 0803 551 329  
Uxbridge Audio, 278 High Street, Uxbridge, Middx  
0895 33474  
West Midlands Audio, 158 Ombersley Road,  
Worcester 0905 58046  
Warstones Hi Fi Studio, 54a Warstones Road,  
Wolverhampton 0902 345 114



Automation Sciences Company,  
20, Little Gaddesden,  
Berkhamsted, Herts, HP4 1PA  
Tel: (044 284) 2786

## MARANTZ SUMMER FASHIONS

During a press launch combined with a wine-tasting session (honest!), Marantz introduced five new products alongside the previously announced top-of-the-line CD94 and CD273 Special Edition CD players. The star of the launch is the PM35 integrated amplifier (£159.90), which will carry the banner for Marantz in the hotly-contested budget arena. Producing 2x35W RMS at 8ohms, the PM35 features m-m and m-c phono inputs, custom-made passive components, and a bypass facility for direct phono/CD listening. The latter facility, first seen in the dearer Marantz models, bypasses all of the pream-

plifier switching and control circuitry, delivering the input straight to the volume control. Joining the PM35 are two matching tuners, the ST35 (£159.90) and ST54 (£199.90), and two cassette decks, the SD35 (£159.90) and SD45II (£199.90). For details, contact Marantz Audio (UK) Ltd, 15/16 Saxon Way Industrial Estate, Moor Lane, Harmondsworth, Middlesex UB7 0LW, tel: 01-897 6633/9. By the way, *HFN/RR* did well in the wine-tasting competition, with contributor Dave Präkel winning overall, and Asst Editor Ken Kessler (a tee-totaller) tying for second place with the *Gramophone's* John Borwick.



## TECHNICS' AFFORDABLE CD PLAYERS

Technics has launched three new budget CD players offering the company's High Resolution Oversampling Digital Filter and high-speed linear motor access system. The SL-P320 (£249.95) features a 10-key numeric pad for direct access and easy programming of up to 20 tracks, as well as a remote control incorporating a digital attenuator for reducing playback levels in 2dB steps (0dB down to -12dB). The SL-P220 (£229.95) and SL-P111 (£179.95) share the dearer model's

floating suspension system and large insulator feet. Other facilities include Preset Edit Function for easy copying of CD on to tape [I can't believe they'd publicise this - Asst Ed], 2-speed search, angled control keys for easy operation, headphone jack with level control (SL-P320/220), and wired remote control operation (SL-P111).

For further information contact Panasonic UK Ltd, 300 Bath Road, Slough, Berks SL1 6JB. Tel: (0753) 34522.

## WHARFEDALE DIAMONDS GO 'SUPER'

The immensely popular Wharfedale Diamond is available in a new, deluxe version. Selling for £139/pair, the Super Diamond advances on the Diamond 2 by virtue of improved power handling, smoother high frequency response

and an improved crossover network to produce tighter, cleaner, more dynamic sound. The Super Diamond is distinguishable by its dark Cherry Wood veneer. Contact Wharfedale Ltd, Sandeas Way, Crossgates, Leeds LS15 8AL.

## DYNAMIC PRECISION LAUNCHED IN UK

A new power amplifier from Norway, the Dynamic Precision No.1, is now available in the UK. Rated at 250W/channel at 8ohms (650W/channel at 2ohms), or 880W at 8ohms in bridged mode, the No.1 is aimed at both the professional and domestic sectors. It mixes pro features, like XLR connectors and the

promise of indestructibility, with decidedly 'audiophile' attributes like Monster Cable speaker terminals and circuit details usually pooh-poohed by studio types. For full details, contact Phase Audio UK Ltd, 80 St Mary's Road, Market Harborough, Leicester LE16 7DX. Tel: (0858) 31717.

## PRO SECTOR SCOOPS QUEEN'S AWARD

The professional audio sector has earned the following Queen's Awards: Dearden Davies Associates (a subsidiary of Klark Teknik) for the export of mixing consoles to more than 30 countries; Penn Fab-

rications, for production of parts for protective cases; Solid State Logic and Soundtracs, for export consoles; Total Audio Concepts, for mixing consoles; Turbosound, for sound reinforcement loudspeakers.

## LINX QUASAR NOW AVAILABLE

Linx Audio's Quasar Integrated Amplifier, seen in prototype form at the 1986 Penta Hi-Fi Show, is now in the shops. Rated at 60W/channel into an 8ohm load, the Quasar incorporates defeatable tone controls, m-m and m-c inputs, fresh styling reminiscent of the Stratos separates, and the unique soft-touch controls first seen on the Stratos preamp. The £499 Quasar will be

joined by a no-frills version to sell for around £375. Linx's other plans include tuners and line-input amplifiers. Linx also informs us that the Stratos pre/power amp combination has been reduced in price to £999 from £1400 because of savings due to increased production. Further details from HTS Group, Church Road, Lane End, Nr. High Wycombe, Bucks. HP14 3HH.

## YAMAHA'S CENTENNIAL CELEBRATION

To celebrate 100 years in business, starting with musical instruments and culminating in everything from hi-fi and LSIs to motorcycles, Yamaha has launched a cost-no-object range of electronics. The 10000 Series, also called the Limited Centennial Edition, consists of a preamplifier, power amplifier, phono amp, CD player, and speakers, all of which will be produced in severely limited numbers; most of the production has already been allocated. The heart of the system is the comprehensively equipped CX-10000 preamplifier, which incorporates an advanced version of the DSP-1 surround-sound processor. One of the key features of this unit is the on-board DAC, equivalent to that incorporated in the matching CD player, designed using Yamaha's 18-bit 'Hi-Bit' technology (more on that later). The CX-10000 is operable by remote control, necessary to fully exploit the DSP stages from the listening seat. As the CX-10000 contains only line-level inputs (all accessible via a bank of over 50 gold-plated sockets), an outboard phono amplifier is required for LP playback. Matching the CX-10000 is the HX-10000 phono equaliser, which accepts two turntables and has facilities for m-m or m-c cartridges with front-panel adjustment for capacitance and impedance. The matching CD player is the CDX-10000, also a product of the 'Hi-Bit' research,

which is equipped with digital output for direct connection to the Centennial preamplifier.

The matching power amplifier for the Centennial system is the MX-10000, which operates in true Class-A, but features Yamaha's Hyperbolic Conversion circuit to alleviate heat. The MX-10000 is rated at 250W/channel at 8ohms, and is said to drive 1ohm loads with a dynamic output of 1200W at that impedance. The final item in the series is the NSX-10000 loudspeaker, a large three-way design taking the classic NS-1000 beyond its current level of development. Prices for these products in the UK have not yet been established.

Yamaha's CDX-900 CD player features the company's new 'Hi-Bit' technology, a collective label referring to a number of refinements aimed at improving sound quality at both the analogue output stage as well as at D/A conversion. Key to the 'Hi-Bit' circuitry is a Yamaha-developed 32-bit processing digital filter which performs 4x oversampling with 18-bit resolution. Other details of the CDX-900 include the use of twin D/A converters, and separate power supplies for the digital and audio stages. The CDX-900 will retail for £449.95. For further details, contact Yamaha Electronics (UK) Ltd, Yamaha House, 200 Rickmansworth Road, Watford, Herts WD1 7JS. Tel: (0923) 33166.



## GATE ONE INTEGRATED AMPLIFIER

The Gate One amplifier from Gatehouse Audio is an integrated amplifier producing 40W/channel into 8ohms. Facilities include m-m and m-c phono inputs, tone defeat, inputs for two tape decks, passive RIAA eq, fully regulated DC supply to all stages, and star earthing arrangement. The Gate One is available as a kit (£161) or fully

assembled (£201.25). Gatehouse Audio inform us that they will be producing a preamplifier and power amplifier, the latter being - possibly - the first UK design with on-board DACs for direct connection to the digital output of suitably-equipped CD players. Contact Gatehouse Audio, 105 High Street, Evesham, Wors. Tel: (0386) 48873.

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The same precision engineering  
and gentle tape handling that  
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Godmanchester, Huntingdon  
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## PHONOGRAPH & GRAMOPHONE SOCIETY

The Old Palace at Hatfield provided an attractive setting for the City of London Phonograph and Gramophone Society's symposium on April 26. The speakers were Robert Parker, Laurence Stapley, Peter Adamson and George Frow, and between them they encompassed the entire history of recorded sound.

George Frow celebrated the centenary of Edison's first patent for recorded wax cylinders with a witty and scholarly exploration of the cylinder's development and exploitation. Several interesting points emerged, among them the fact that pirating of recordings prevailed with cylinders just as it does today with cassettes: we were shown a machine used for 'doubling' (the word soon evolved into 'dubbing') and among the many cylinder records played (some of them on Frow's superb 1908 Edison 'Idelia' phonograph) we heard one brazen example of 19th century pirating.

Laurence Stapley, once Head of BBC Recording Services and now an adviser to the British Library National Sound Archive, spoke about his current work, the compilation of an aural history of the recording industry. It is still in preparation, but already in the past three years he has conducted some 200 two-hour interviews with people who have contributed to the history of sound recording. He played excerpts which illustrated the pains and the pleasures to be encountered in making fine recordings: Sir David Willcox explaining the problem of how to coax a perfect performance from the Choir of King's College, Cambridge, when the boy choristers have just finished a strenuous game of football; David Attenborough overcoming the difficulties of recording sounds from wholly uncooperative wild animals; Yehudi Menuhin recalling the wonder of recording at the age of 16 under

Elgar's baton; and an interview in which Adrian Farmer of Nimbus Records spoke of his unorthodox approach to the task of capturing an artist's performance on record.

Robert Parker was also concerned with capturing performances or, more precisely, the recapturing of performances recorded long ago and never heard properly because of the limitations of the recording equipment. He presented a lucid and persuasive apologia for his work on the remastering of early records, particularly jazz records, work which has drawn equal measures of high praise and deep hostility. His aims were to reveal the original performances trapped inside those noisy old 78s as nearly as possible to the original sound: and also to encourage today's young people, attuned to the highest standard of reproduction and understandably reluctant to listen to anything less than perfect, to take an interest in the jazz classics. He illustrated his arguments with some excellent examples of transfers. Parker faced some searching and well-informed questioning from the floor, at the end of which many present seemed convinced by his reasoning, obvious sincerity and dedication.

The symposium ended with Peter Adamson, from St Andrews University, marking another centenary, that of the first patent for disc recording by Emile Berliner. An acknowledged expert in the field of these primitive 5in. and 7in. single-sided 'plates', Adamson presented a genial and well-illustrated survey of the Berliner period in the history of the Gramophone Company, both in the United States and in Britain. He finished, appropriately enough, by showing, and playing, a 5in. disc of bright zinc, looking uncannily like a modern Compact Disc, but actually proving to be a record of Emile Berliner himself intoning 'Auld Lang Syne'.  
*Ted Cunningham*

## SANYO CLAIM SMALLEST CD PLAYER

Sanyo's entry into the personal CD player, the CP12, is described by the company as the world's smallest. Measuring 125x19.8x127.5mm, it offers wired remote control, fully programmable 16-track memory with repeat facility, fast access and track search. The CP12, which

retails for £259.99, comes complete with remote control, AC adaptor, carrying case, battery case, and headphones. Further details from Sanyo Marubeni (UK) Ltd, Sanyo House, Otterspool Way, Watford, Herts. WD2 8JK. Tel: (0923) 46363.



## MOBILE FIDELITY AUDIOPHILE RECORDS

After years of sporadic distribution, Mobile Fidelity Sound Lab audiophile recordings are available in the UK. The distributor for both retail and wholesale customers is John Goldsmith's Compact Disc Service. The initial catalogue of CDs consists of:

Prokofiev: *Alexander Nevsky, Op.78* (Slatkin and the St Louis Symphony Orchestra)  
Elmer Bernstein: *Movie and TV Themes*  
Roy Budd: *The Final Frontier*  
Michael McNabb: *Computer Music*  
Charlie Barnet and His Orchestra: *Big Band 1967*

Booker T and the MGs: *McLemore Avenue*

Maynard Ferguson: *The Blues Roar*  
Maxine Sullivan: *The Cotton Club*  
Shelly Manne & His Friends: *My Fair Lady*

Sarah Vaughan: *A Time In My Life*  
Rick Wakeman: *Journey To The Centre Of The Earth*

Miles Davis: *Someday My Prince Will Come*

Because of the weak dollar, MFSL CDs will retail here for only a couple of pounds more than normal UK releases. For full details contact John Goldsmith at PO Box 5, Reigate, Surrey RH2 7YP. Tel: (07372) 23131.

## BRIEFING

**BBC ENGINEERING** and the Electricity Council have been jointly given the Queen's Award for Technological Achievement for Radio Teleswitching. This is for pioneering work with the BBC's low-frequency transmitters which send coded signals to electricity timeswitches.

**BOSTON ACOUSTICS** has added two new flush-mount speakers to its Designer Series, the two-way 350 and the 'double cone full range' 705.

**WATTS INTERNATIONAL** can now supply ready-made cables fitted with a wide range of standard audio connectors. For details, contact Watts International Components Ltd, Suite 6, Wyvern House, 46-48 High Street, Bognor Regis, West Sussex PO21 1SP. Tel: (0243) 868322.

**CLEARAUDIO** has released a new moving-coil cartridge to fit in the middle of its range. The Delta has an output of 0.4mV, and will retail for around £450. Vital Systems, 38A The Meadow Way, Harrow Weald, Middlesex HA3 7BW. Tel: (01) 863 8988/435 2354.

**PICKWICK GROUP** has

announced an increase of 163% in profits before tax to £1,628,000 for 1986. Pickwick will be launching a low-priced (£5.99) range of pop CDs in 1987.

**STATIKILL** is a new anti-static treatment available in 125ml bottles. Price and details are available from DG Industries Ltd, 3 Tyth Street, Glastonbury, Somerset BA6 8DT. Tel: (0458) 210092.

**BANDOR** offers a range of drivers and speaker kits for the serious home constructor. Products available include a 50mm miniature treble unit, a 130mm bass driver, and a range of cabinets and crossovers. For full details, write to Bandor Mfg, 1 Sydney Cottages, Cores End Road, Bourne End, Bucks SL8 5HY. Tel: (06285) 29441.

**JBL** has introduced three new car speakers. The range includes the 2-way, 40W TL500 (£75), 2-way, 60W TL600 (£105), and the 3-way, 100W TL900 (£135). Contact Harman UK, Mill Street, Slough SL2 5DD. Tel: (0753) 76911.

**ROSS ELECTRONICS** is to sponsor post-graduate research studentship at the Polytechnic of North London. The project involves research into

advanced headphone drive unit simulation and design. The student engaged in this project is 23-year-old Billy Singh, an Honours degree graduate of Brunel University.

**HI-FI EXPERIENCE** have two new phone numbers. For the Alfred Place, London WC1 premises, phone 01-631 4917. For Camden High Street, London NW1, phone 01-388 1300.

## EVENTS

**JAZZ, ROCK, AND STUDIO MUSIC SUMMER SCHOOL** will be held from August 2-7. For information on the courses available, write to JRSM Summer School, PO Box 75, Guildford, GU2 5LN, or phone (0483) 300327.

**INTERNATIONAL AUDIO AND VIDEO FAIR 1987** will be held in Berlin from August 28 to September 6. Venue is the Berlin Exhibition Grounds.

**YARDBIRDS WORLD** will be sponsoring a Yardbirds convention/get-together on August 15 in Oxford. As tickets are limited to 500, contact Richard Mackay for details, at 22 West street, Osney Town, Oxford OX2 0BQ. Tel: Oxford 72251.

**THE HI-FI SHOW**, sponsored by HFN/RR, will be held at the Heathrow Penta Hotel, Bath Road, Hounslow, on September 17-20 1987. Full details will be announced next month.

**SIM HI-FI IVES** will take place in Milan from September 3-7, 1987.

**SCOTTISH FESTIVAL OF SOUND AND VISION** will take place at the Edinburgh Sheraton from November 6-8. Sponsors are Russ Andrews, The Music Room, and Stereo Showcase. For details, phone (031) 225 8854 or (041) 332 5012.

## PEOPLE

**BARRY WILMORE** has been appointed Sales Director of Aiwa (UK) Ltd.

**DAVID RISNER** has been appointed Head of Home Entertainment at BBC Enterprises. Part of his role is overseeing BBC Records.

**DEREK KEITH**, MD of See Hear in Aberdeen, has won the Grampian heat of the Scottish Award for Business Enterprise.

**DEREK WEST**, formerly of Tannoy, has joined Cambridge Audio as Sales Manager.

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# AES CONFERENCE REPORT

## Martin Colloms at the Audio Engineering Society's British meeting

IN MARCH of this year the spring AES convention was held in Westminster in a superb new centre located a stone's throw from the Abbey. The Convention lasted four days, and in addition to the long-established format involving the presentation of technical papers covering a wide range of audio subjects, it also included a packed exhibition of professional equipment and consultants. Almost 200 stands were on view, and the technical papers numbered an impressive 73; but in addition there were some valuable 'workshops' whose team members presented a powerful package of concentrated information to specialist groups. In fact the substance of these workshops exceeded that presented by a fair number of the formal papers. Technical tours were also laid on; for example, to EMI's CD plant and the BBC's Maida Vale studios, to Quad, Neve (digital studio mixers and control) and the BBC research department, to the IBA and to EMI's historical section, and finally to the studios of Decca and CTS.

Papers were presented in the following categories: Measurement & Instrumentation; Sound reinforcement; Broadcast; Acoustics; Loudspeakers; Psychoacoustics; Microphones & Recording; Circuit techniques; and Signal processing. Workshop sessions included: Theatre sound design; Digital audio fundamentals; Electrically assisted acoustics; Loudspeaker measurements; Audio & instrument interfaces; Microphone techniques; Digital audio technology; VLSI technology; and Timecode.

A number of these items were of relevance to *HFN/RR* – its standards as well as its testing and review methods, relating to both the equipment and the music side. For example, several papers on microphone technique demonstrated that considerable research interest has been shown in classical recording methods using simple coherent arrays. The theory of stereo presentation and sound-stage formation was well covered, together with concepts of image depth, transparency, and the like. These relate directly to review discussions of equipment sound quality assessed in terms of its stereo image performance, and also to the recording quality analysed in record reviews.

In the digital sessions many interesting topics were included. LD Fielder of Dolby Labs covered audible distortion and noise produced by DACs, which is directly relevant to R-DAT and CD player performance (AES reprint no. 2424 A-S). This showed that under certain conditions, superficially well specified 16-bit systems do produce audible distortion and noise modulation. Other papers discussed low bit-rate

coding and its quality evaluation, plus techniques for a graceful degradation of performance when problems occur rather than the catastrophic dropout which can occur in many digital formats.

In my recent review of the Yamaha DSP-1 digital processor (*HFN/RR* March '87, p67), applications in the field of professional acoustics were noted. In fact, many papers presented at the London AES showed research to be well advanced on this subject, with perceived hall acoustics being controlled almost to order by the use of multi-level advanced digital sound processing. DSP has come of age and was evident through many levels of studio practice.

On the subject of loudspeakers and measurement, a team from Kenwood showed the improvement in dome tweeter response resulting from the use of a spherical wavefront horn baffle. For a perfect dome, the acoustic boundary conditions of flush mounting in a plane baffle are not ideal, and a series of ripples of the order of  $\pm 2$ dB are imposed on an otherwise smooth curve in the 3-10kHz range. The spherical waveform horn preserves uniformity of response but represents a considerable physical projection beyond the main driver baffle. However, the authors found that the horn could be merged with the baffle until the dome was actually recessed and the front section of the horn profile flowed smoothly into the baffle plane. The results are impressive and confirm the performance of the plate profiles of a number of modern tweeters; for example, KEF's T33. In the Kenwood example, the response amplitude ripple was reduced from 2dB to a typical  $\pm 0.4$ dB. What is even more important, the regular periodic nature of such uncorrected diffraction effects is likely to make them more audible than one might suppose (AES reprint 2450 E-7).

Peter Baxandall presented his technique for displaying the voltage and current output capability of amplifiers, and its relation to loudspeaker load demands, while other useful papers covered the acoustic relationship of loudspeaker systems to the listening room – and questions concerning the ideal frequency response for the system itself. This aspect was also discussed by Floyd Toole in the Loudspeaker Workshop, where the need to define frequency responses more accurately was demonstrated. Simple  $\pm x$ dB limits can be most misleading, as broad-band amplitude trends need to be viewed critically, while peak-to-peak variations of narrower range are less audible, and may thus be allowed a greater deviation. Loudspeaker frequency response remains the most important characteristic, but cannot be specified in a

single measurement or graph; many views are necessary to establish all the required characteristics in measurement.

It is impossible to cover all the items of interest in a brief report such as this, or even give a fair impression of their overall content, and I would recommend interested readers to contact the AES direct at Lent Rise Road, Burnham, Slough SL1 7NY, c/o Heather Lane.

The accompanying exhibition was packed throughout the Convention, and such was the level of interest that many visitors required almost forcible ejection at closing times! B&W showed a working model of their miniature monitor system the MM1, which employs a low-resonance moulded matrix construction for the enclosure, this being a successor to the earlier LMI model with its die-cast housing. The new system incorporates a metal-dome treble unit MD1, with piston operation claimed up to 20kHz. While the MM1 is necessarily of limited bass performance, it may be supplemented in the MM2 system by 14 litre bases which incorporate crossovers at 150Hz and a bass-reflex loading for two 120mm drivers per channel, extending the room response down to 32Hz. The result is slim, elegant and unusual. B&W's 801 studio monitor has been redesigned, now at a higher sensitivity, with a lower Q and more extended bass alignment, and also incorporating the new metal-dome tweeter.

Other speaker manufacturers present included KEF and Tannoy. The KM1-p is now in full production, and represents the latest version of KEF's high-level active monitor capable of a 35Hz ( $-3$ dB) response with a 120dB maximum sound level on programme peaks. KEF also showed their P60, a powered version of the well reviewed C60, with 150W/channel amplification and a low-level pre-equalisation technique to maximise sensitivity, as well as minimise crossover losses. This compact monitor will attain 113dB at 1 metre on programme peaks. The R107 was also shown, suited for medium-level, wide bandwidth classical monitoring applications.

Tannoy exhibited an extended range of monitoring systems majoring on the dual-concentric principle. Steven Court blasted visitors (both physically and aurally) with an ear-splitting replay of a Harrier jet on his range of monitors, while in a quieter corner Quad showed their range of studio and professional amplifiers, some with 100V line outputs and balanced inputs.

I found the London AES convention most worthwhile and well organised, largely due to the unflinching dedication of organisers Heather Lane and Roger Furness, as well as the tireless assistance of the relevant committees and chairmen. ●

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Or, do we mention that you can listen to anyone from Mozart to McCartney, while someone else in the room is playing the organ? (an unlikely event, we admit, but you never know what turns people on).

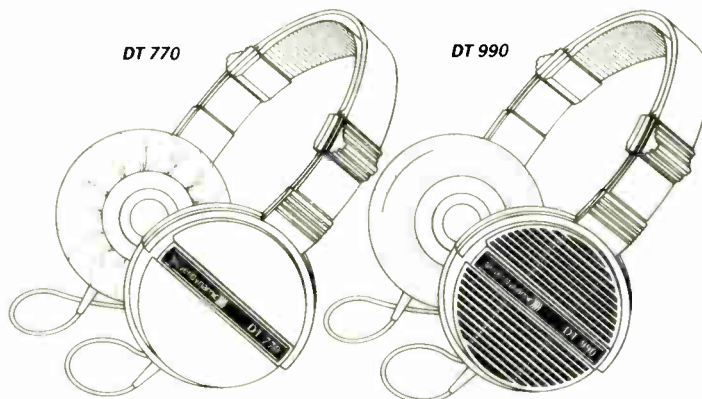
Perhaps we could persuade you that it will go nicely with other status symbols, like your Porsche.

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If we can blind you with science for a moment, here are just a few outstanding features that should help to convince you.

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Expensive? Yes. Worth it? Yes. Every penny.

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**E**VERYONE and their pet donkey is now writing about DAT. As far as I know, no-one has yet done a factual breakdown of the pricing structure, to back up the oft-quoted argument that DAT hardware will always be more expensive than CD hardware. This is largely because DAT has become a taboo in the audio industry. Hard facts have become very hard to come by.

For example, Philips has been resoundingly quiet about DAT recently, because of all the political squabbles. But not surprisingly the Eindhoven labs have been stung by the suggestion that they woke up late to the potential value of DAT. The record shows, in fact, that Philips woke early and then put a publicity clamp on the subject. Witness, for instance, the fact that Philips published a detailed technical paper on DAT in February 1986, which referred back to work done with the mainly Japanese standardisation committee between June 1983 and July 1985. The Philips paper talks enthusiastically about DAT car systems and portables as well as table-top domestic units.

Although the Philips marketing wings have gone quiet on DAT, the Eindhoven labs are still researching it. I have seen their prototypes with my own eyes. I took the opportunity to ask about pricing. Bob van Meurs, Managing Director of the Consumer Electronics Product division, believes that DAT will always be around twice the price of CD. This view is backed up by Frits Schuitema, Senior Commercial Manager for hi-fi and CD at Philips in Eindhoven. Others believe 'at least twice'. They give two reasons: the need for recording circuitry as well as playback circuitry, and the high precision video-style mechanical parts upon which DAT relies.

The Philips view is especially valuable because the company has been trying to simplify the mechanics of DAT to cut production costs. The DAT Philips prototypes use a C-loading system to lace the tape asymmetrically round the rotating drum or 'scanner'. The Japanese are all using an M-loading system, similar to that used for VHS video. The M-wrap is symmetrical, and needs more guide pins and rollers. This inevitably puts up the price. So when Philips talks about DAT always being 100% more expensive than CD, it is an opinion born out of an attempt to reduce the price of DAT.

Philips also makes the point that 30% of the cost of the mechanism is soaked up by the scanner, because it is a precisely machined rotating head drum with two video heads. Each head must record a wavelength of 0.6 microns, in tracks 13.6 microns wide. In practice the head width is set at 20.4 microns. Making metal-in-gap heads of this size which can cope with 1500 Oersted tape without self-saturation is not a cheap exercise. Although DAT technology is based on video, the parts are smaller and the tolerances tighter. This puts up the price compared to video.

Independent market intelligence shows that the cheapest price quoted so far for a 'raw' VHS video mechanism, out of Japan, is around £30 or £35, and that is after the Japanese mass-production of VHS for over 10 years.

The Japanese talk privately about bringing the cost of a DAT mechanism down to around £20, some five years on from a successful launch. DAT recorders could then be made for around £100 and sold in the shops for around £200. Even if the rock-bottom ex-factory cost of a DAT mechanism, without any electronics, casing and controls, does come down to £20, this is still more than the retail price for some of today's portable audio cassette players.

Importers can now 'land' a budget CD player from the Far East for £80. Until recently this

included a 19% tariff into Europe. This is now down to 16.5% (it may eventually go to 14%) but it still makes the £99 'special offer' look like Japanese dumping at below cost to buy market share. When all the electronics in a CD player have been integrated onto a single chip, instead of the five main-function chips currently used, and mass-production costs for the CD mechanism are down to around £5, a fair rock bottom ex-factory price for a CD player will be around £35 and a fair shop price around £65 or £70.

All this will take a couple of years. A DAT recorder needs around three or four times the electronics of a CD player, irrespective of whether it is on clumsy breadboards or integrated into a neat package of chips. Some of the extra circuitry, for recording for example, is an obvious necessity. Some necessities are not so obvious. For instance, the DAT system needs a buffer memory to cope with the interlaced data format which provides error correction. The data for the left and right channels is interleaved in odd and even blocks, read by the two heads on the scanner drum and re-structured in the buffer. If one head clogs, then the other still reads data for both the stereo channels. The number of data samples halves and so does bandwidth (to around 10kHz) but the music keeps on playing. Although a CD player also needs buffer memory, 16 kilobits is sufficient. For DAT the buffer has to be 128K. Memory may be cheap but it's not free. All this contributes to the cost of DAT.

If the DAT recorder is to monitor signals off tape, *ie*, read after write, it needs four heads on the drum instead of two, which further increases the cost of the scanner.

The price of CD players looks set to bottom-out six or seven years after full-scale launch. The bottoming-out for DAT should follow a similar time scale after full scale launch. In other words, don't expect DAT players for £200 until well into the next decade.

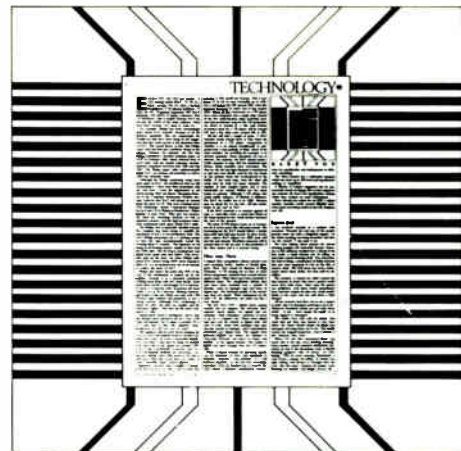
Doubtless someone will be around then to rub my nose in this prediction if the time comes and it is proved wrong.

## Nice one, Neve

Compact Disc compilation albums should soon start sounding better, thanks to British company, Neve, now owned by Siemens of West Germany. A CD running for an hour or more draws programme material from several shorter master tapes. Often these have been recorded at different times. For compilation albums they may have been recorded over a period of decades, some on analogue tape and some on digital tape. The technical quality of the recordings does not match. When juxtaposed on the same CD, the differences can stand out like a sore thumb.

The new Neve DTC-1 digital stereo mixing console lets an engineer mix between three separate stereo inputs, two digital and one analogue, while compiling a selection of music to go on a Compact Disc. Music from digital tape goes into the console as digital code, and stays in code; music from analogue tape goes into the console as analogue, and is immediately converted into digital code. The signals from different sources are mixed, for instance to cross-fade between one piece of music and another, in the digital domain. The output is digital and goes straight onto the CD master tape.

While in digital domain the incoming signals can be balanced in level and equalized in frequency response, with accuracy of 0.1dB between channels. So old and new recordings reproduce from the finished disc at exactly the



## B A R R Y F O X

same volume. Frequency equalization compensates for peculiarities and inadequacies in different recordings.

The Neve console has a solid-state memory which can store up to 250 level and equalization settings or 'snapshots'.

A library of control snapshots can be permanently stored on floppy disc so that engineers can recreate the level and equalization settings which they worked on years beforehand.

Neve already has orders for six DTC-1 digital transfer consoles worth around £80,000 each, from music recording studios in the US, Belgium and UK.

## Square deal

I was involved recently in a seminar with inventors. Towards the end one of the people present came out with a delightful snippet. As the whole meeting was being recorded, and thus 'on the record', I can pass it on.

We were talking about patents for record cleaning gadgets and anti-static devices. Someone in the audience recalled how a friend of his had made a small fortune out of selling an anti-static record cleaning cloth. You remember the kind of thing; a small piece of fluffy material that you were supposed to rub on the disc to remove static. The hi-fi press was never enthusiastic about these cloths, but they sold by the million.

The inventor, it turned out, didn't patent the idea because he knew that such a patent would never have held water. Also, once the patent was published, rival firms would immediately have seen how simple the idea was, made similar cloths in the same way but sold them a little cheaper.

All the inventor had done was to cut a square of cloth, dip it in detergent and hang it up to dry. Whatever beneficial results you got from those cloths - if any - were simply the result of its being dipped in detergent.

The cloths were sold with the advice that when they got dirty and started to lose their effect, the owner should simply dip them into detergent and hang them out to dry. This would restore the original properties. And of course it did, whatever they were!

When CD was first announced there was much talk of the disc never needing cleaning. Many people, myself included, confidently predicted an end to the flourishing trade in record cleaning gadgetry. But of course, we were wrong. CDs do need cleaning. Sometimes a wipe across a jumper will suffice, in a worst case light buffing with Brasso or Duraglit does the trick. But this hasn't stopped the gadget trade flooding the market with magic devices. ●



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*Applying the same pernickity principles we have cautiously expanded our range.*

*Arcam amplifiers, tuners and loudspeakers were all highly commended in the recent 'What Hi-Fi' Awards: the Alpha plus being selected as the best budget amplifier.*

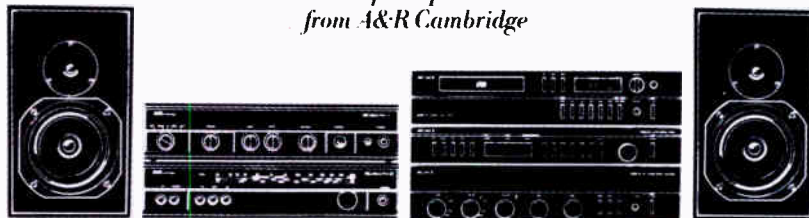
*Over the coming months the Arcam Delta range will be introduced. Together with our already highly commended speakers it will form the first complete all British compact disc system.*

*Here, admittedly, we have strayed from our resolve to ignore trends.*

*But fear not. Despite all this rampant innovation, we haven't abandoned our principles.*

*This is one novelty that won't wear off.*

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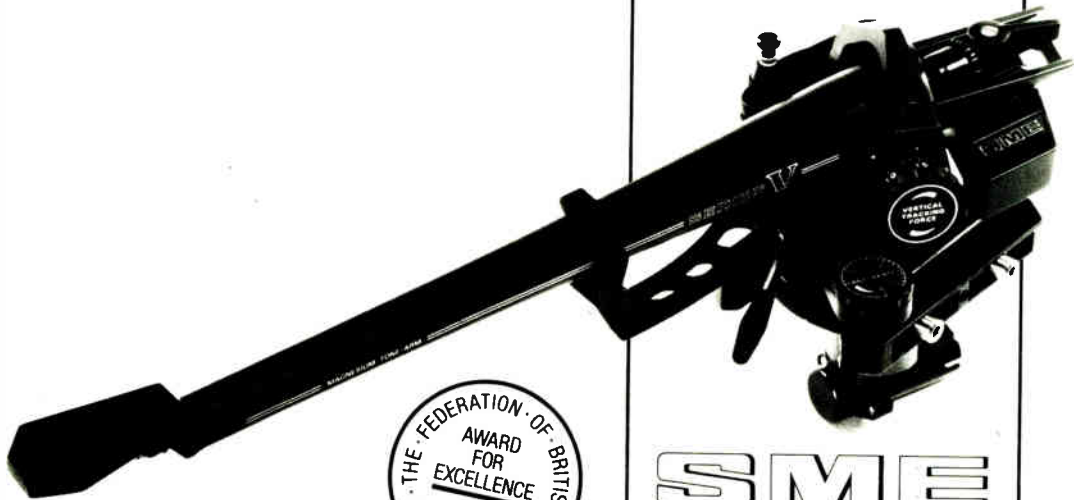
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**T**HE compromise between adequate selectivity and distortion is one of the most important in the design of an FM tuner. A very wide bandwidth from antenna input right through the set to the discriminator is required if you are to reproduce the original stereo information as accurately as possible. More than 300kHz bandwidth is desirable if you are to have excellent crosstalk right up to high frequencies, and very low intermodulation distortion between low and high frequency components. Any second or third order intermodulation products developed in the tuner can sound quite unpleasant, usually being evident as a form of tearing noise on speech or music transients, especially if the transient is hard over to the left or right.

Some radio stations transmitting FM stereo do tend to push their peak deviations rather higher than perhaps they ought, and sometimes I have heard some quite nasty spitch on a sibilant female voice when on extreme left or right, although I have not noted it to be so severe in recent months. Stereo radio transmission is extremely complicated, and it may interest readers to know what is actually within such a transmission. Considering first a mono transmission, we have a carrier wave at, say, 100MHz, onto which we apply 1kHz sine wave modulation at maximum level. The absolute maximum modulation level used on Band II FM will cause the main carrier frequency to go up and down by 75kHz, *ie*, it will shift in simple harmonic motion from 99.925MHz up to 100.075MHz and back again. It will do this 1000 times per second, *ie*, at the modulation frequency specified. The frequency is thus modulated, and hence FM.

In a stereo transmission, it is required to send mono information (L+R) and stereo information (L-R). The mono information should be receivable on any normal mono tranny or tuner, whilst the transmitted stereo difference information had to be picked out by a stereo tuner in order to allow the left and right channels to be derived. Thus, the sum channel is transmitted quite normally as mono, the transmission having what is virtually a brick wall filter coming just below 15kHz. The difference channel (L-R) is transmitted by applying the difference information to a 38kHz carrier and amplitude modulating it. In the modulating process, the 38kHz carrier is suppressed, leaving just the AM sidebands stretching from 15kHz below to 15kHz above the 38kHz carrier frequency. Thus, L-R components stretch from 23kHz to 53kHz. A 19kHz pilot tone is mixed in with this complex signal. This 19kHz pilot is precisely half the 38kHz frequency, and in the receiver is picked out and effectively doubled within the electronics in order for it to be injected into the AM supersonic part of the waveform to allow demodulation of the difference information. This is rather an over-simplification, since in

reality decoding is a form of switching which all takes place in an integrated circuit chip. What is important is that the entire difference channel information (the 38kHz sidebands), together with the 19kHz pilot, actually frequency-modulate the main radio frequency carrier. This means that the main transmitted carrier can have modulation on it of up to 53kHz, together with any other carriers that the broadcasting organisation adds for remote switching or other special purposes, including the new radio data. This entire complex waveform has to get through to the discriminator, the output from the latter feeding directly into the decoder.

For the tuner to reproduce the left and right channels correctly with the minimum of crosstalk and distortion, the entire wave form has to be reproduced from the discriminator without any phase or amplitude errors. This means that the IF filters have to have a very flat top. On the other hand, the skirts have to be very steep to avoid interference from stations on the adjacent channel. This is particularly important when these stations are also transmitting in stereo. The difference between very good tuners and average ones may well be the quality of IF filtering used, and it may take you quite a while to appreciate the difference in normal usage. The situation is fairly similar to that of assessing various pick-up cartridges, for you may think the moving-coil cartridge you have just paid a fortune for is absolutely marvellous until you happen to hit on a record which shows up some poor tracking.

To show the nature of the problem I felt it might be useful to plot out a spectrum analysis of the actual radio frequency transmission showing the energy in the FM sidebands of a 1kHz fully modulated transmission on the sum channel (R=L), and then on the difference channel (L=-R). Note that an unmodulated carrier will be just a single vertical line in the centre going right up to the top 0dB mark. In the R=L plot you will see that the energy of the sidebands is down to -60dB or so (0.1%) by  $\pm 125$ kHz. Thus, the signal should be reasonably accurately reproduced with a flat passband of around 250kHz bandwidth. For this particular analysis, which is rather difficult to portray accurately, I have had to use an analyser filter bandwidth of 10kHz, which will tend to smudge the ups and downs in the energy distribution fairly badly, in order to show the maximum peak levels at any point, rather than the null points.

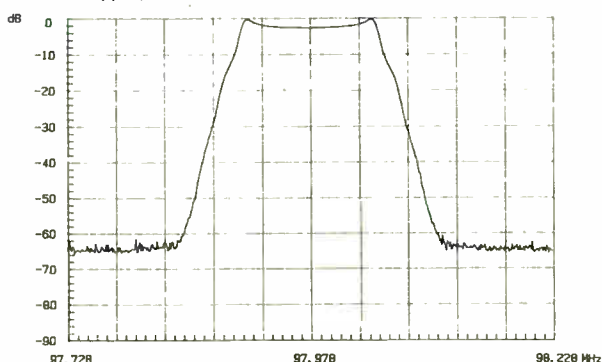
Now look at the equivalent plot when the transmission contained only the difference (L=-R) information. There are no components of the modulation below the 19kHz pilot, and this is at a very low level anyway. The main parts are components at 37 and 39kHz, representing the two sidebands of a 38kHz carrier. You will thus see the energy bumping up in the plot approximately every 38kHz from where the



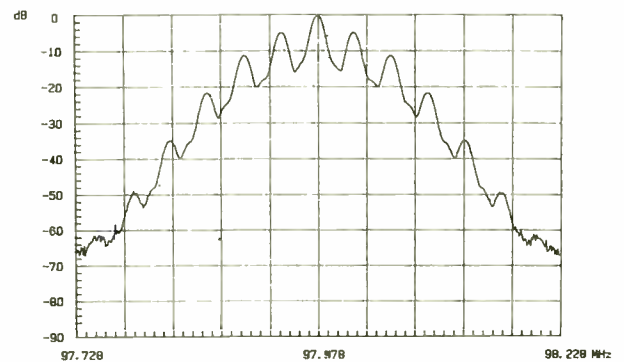
## ANGUS MCKENZIE

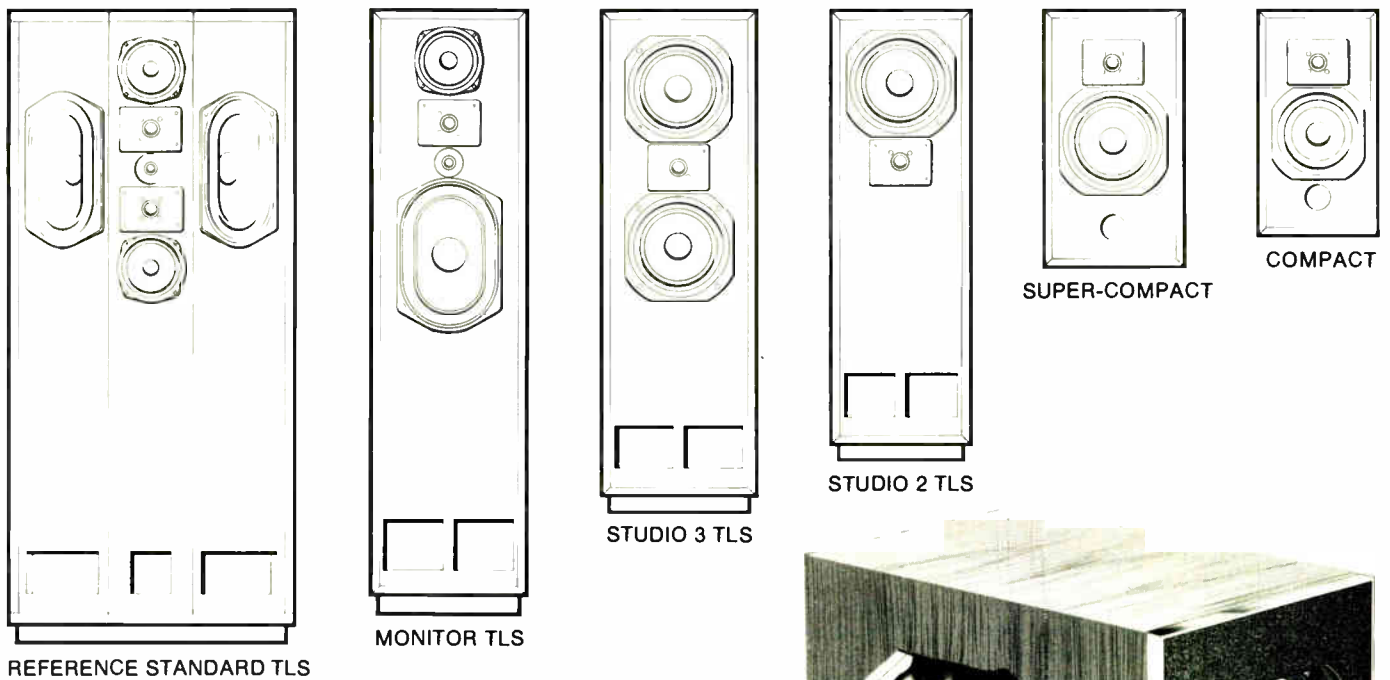
centre carrier would be, the energy gradually reducing as you go further out from the centre. Note that the energy has not reduced to the order of -60dB until  $\pm 4$  divisions or so, this representing an overall bandwidth requirement of 400kHz if one is to achieve extremely low distortion and crosstalk in the difference channel. Matters are not quite as bad as this, since there is virtually never maximum energy in the difference channel only, as this represents pure out-of-phase information. Furthermore, whilst my test equipment can actually transmit stereo with 60dB crosstalk rejection, I have only rarely come across tuners with better than 45dB crosstalk rejection, and most are worse than this. Quite frequently the reason for inferior crosstalk and distortion is poor IF filter characteristics. Hopefully, you would not normally have higher than 50% modulation in the difference channel, and you would get this if full left or right channel modulation is present, as you also get 50% modulation of the sum channel, these two combining to give you 100% left or right. In practice, therefore, the overall bandwidth requirement is ideally 400kHz, but quite a lot less than this, say 325kHz, will be very satisfactory. If you are prepared to accept slight distortion at peak deviation, and a degradation of high frequency crosstalk, then a narrower bandwidth would be satisfactory. You can thus see that there is a considerable advantage in having switchable selectivity in an FM tuner, allowing you to have a narrow position for winking out weaker stations or coping with adjacent channel rejection problems, whilst a wider selectivity should give you a superb, clean reproduction of a very high quality transmission. Cheaper budget tuners inevitably must mean cheaper filters and discriminators, whereas more expensive tuners should have far more esoteric filters, but alas, many an outrageously priced tuner does not have a good enough IF filter! ●

FM sidebands of fully modulated transmission on the sum channel



Sidebands on the difference channel

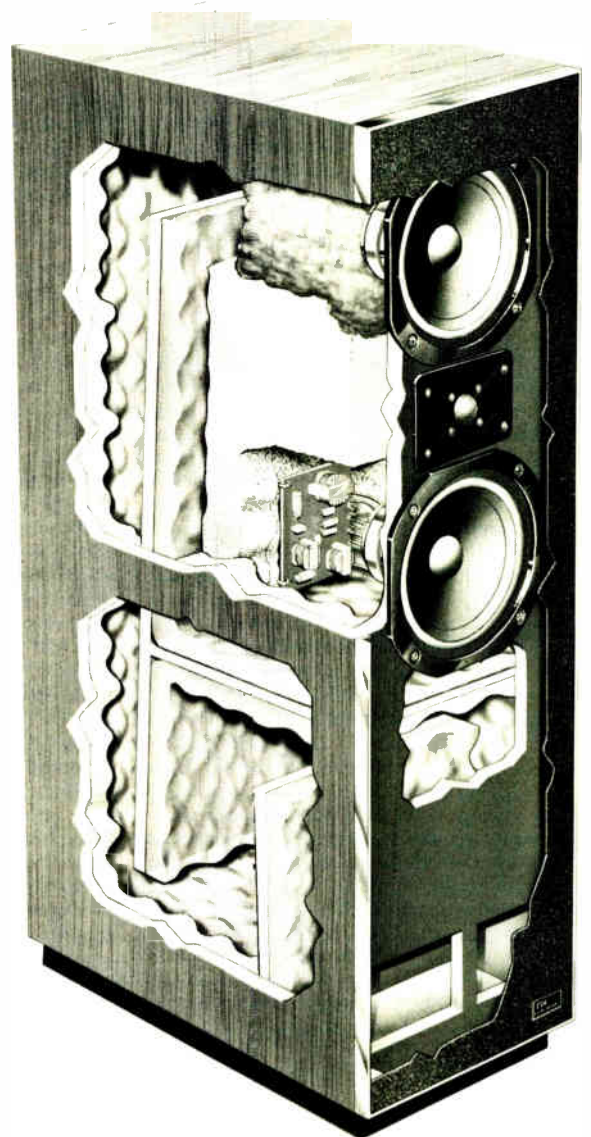




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# INSIDE R-DAT

In his third article, John Watkinson describes the DAT channel code

**I**N ANALOGUE recording, the characteristics of the medium affect the signal recorded, whereas by expressing a signal in numerical form by sampling and quantising, the quality becomes independent of the medium. The dynamic range required no longer directly decides the track width needed. In digital circuitry there is a great deal of noise immunity because the signal can only have two states, which are widely separated compared to the amplitude of noise. In digital magnetic recording we also use only two states of the medium, N-S and S-N, but the noise immunity is much reduced, the reason being that the noise immunity is a function of track width. By reducing the working signal/noise ratio of a digital track the same information can be carried in a narrower area of the medium, allowing economy of operation.

As the replay pulses need only be sensibly above noise, it is necessary to study the sources of noise. There are two important sources of replay noise in a magnetic recorder. One is the noise from the tape itself; the other is the noise from the head. All components having resistance generate noise according to their temperature, and the replay head is no exception. If a given recording exists on a tape, a better signal/noise ratio will be obtained by moving the head relative to the tape at a higher speed, since the head noise is constant and the signal induced is proportional to speed. This is one reason why rotary head recorders offer better packing density than stationary head recorders. The other reason is much more practical.

A rotary head machine determines track spacing by linear tape speed, whereas stationary heads are difficult to fabricate with narrow spacing between tracks. In digitising a waveform, there has been an exchange in the importance of signal/noise ratio and bandwidth. The bandwidth of a digital channel always exceeds the bandwidth of the original analogue signal, but it must be stressed that the extra bandwidth is only required with a poor signal/noise ratio. This explains the paradox that greater bandwidth is needed by a digital recorder, but less tape is used. As in analogue recording, the rotating head can be used to obtain high bandwidth without excessively short tape wavelengths and at moderate linear tape speed. In an azimuth recorder, where the tape tracks are actually narrower than the head poles, a further source of unwanted signals is the residual crosstalk from the adjacent tracks after it has been attenuated by the azimuth effect. In a good design the noise level from crosstalk will be about the same as from other sources.

To provide the best signal/noise ratio on replay, the record waveform will typically be a current whose direction reverses but whose magnitude remains constant.

The actual record process is shown in fig.1. The tape encounters a strength of flux which increases and then decreases as it passes the head. The recording is actually made near the trailing pole of the head, where the flux from the head falls below the magnetic force needed to change the state of the particles. The steeper the flux gradient on the trailing pole, the higher the frequency which can be recorded. This is gener-



ally obtained with a relatively wide gap. The same process takes place in an analogue recording, except that for analogue purposes it is necessary to add bias to linearise the process. In a digital recorder the non-linearity is not a problem, and bias is neither needed nor used. When such a recording is replayed, the output of the head will be a differentiated version of the record waveform, because the head only responds to the rate of change of flux.

It is important to understand the shortcomings of the magnetic channel if efficient use is to be made of it. Fig.2 shows that the differentiating

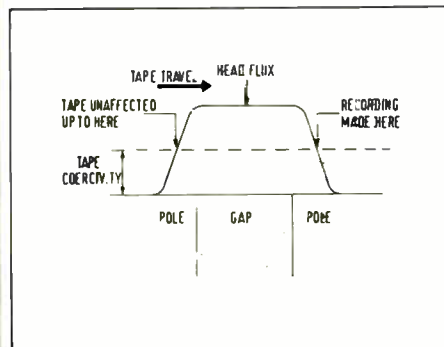


Fig.1 The recording is actually made near the trailing pole of the head where the head flux falls below the coercivity of the tape

effect causes the head output to initially rise at 6dB per octave from a DC response of zero. At some frequency the shortening wavelengths no longer reach the replay head from the full thickness of the magnetic coating, and the replay signal is due to a layer nearer the surface which gets thinner as frequency rises. This is the main reason why the magnetic coating on R-DAT tape is so thin, because a thicker layer would not work any better, and would take up more space in the cassette. This effect also causes a loss of 6dB/octave, which cancels the differentiating effect to give a region of constant frequency response. The construction of the head with a gap in it results in the two poles of the head seeing the tape with a small delay interposed. As expected, the head response is like a comb filter with the well-known nulls where flux cancellation takes place across the gap. Clearly the smaller the gap the higher the frequency of the first null. This contradicts the requirement of the record head to have a large gap. It is the norm to

have different record and replay heads in analogue audio recorders for this reason. In digital recording it is possible to compromise and have one head record and play back without loss of audio quality. A further economy factor is that no erase head is needed in R-DAT. The two-state record signal is so powerful that it simply overwrites any previous recording.

The frequency response is in fact of less interest than the impulse response in digital recording. As stated, the finite gap of the head means that a given flux change will influence the two poles at different times. Closely spaced flux reversals will interfere with one another. Fig.3 shows that when an uneven duty cycle is recorded, there are a number of problems.

The lack of DC response causes a level shift. Combined with the finite slew rate, the shift can cause timing errors unless care is taken to slice

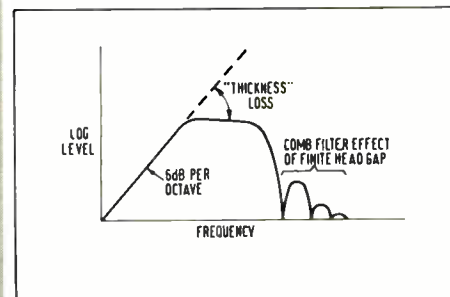


Fig.2 The major mechanisms defining magnetic channel bandwidth (see text)

the signal about its own centre. The lack of DC response is particularly severe in R-DAT, because the signal has to get to and from the heads through a rotary transformer, which also has poor DC response.

The finite head gap will be seen in fig.3(b) to cause peak shift distortion, which tends to reduce the asymmetry of the waveform, causing timing errors (also known as inter-symbol interference or pulse-crowding). Compensation for peak shift requires equalisation of the replay signal, and this can be done by network after the replay head, termed an 'equaliser' or 'pulse-sharpener', as in fig.3(c). A pair of delays are needed in the equaliser, and are used to obtain signals which are early and late relative to the signal in the centre. By inverting these signals and adding a proportion of them to the centre signal, the peak shift can be reduced, because the resultant pulses are slimmer and do not overlap each other so much.

A severe shortcoming of a real magnetic channel is time instability. This is well-known as wow and flutter in analogue audio machines. In digital recording it is referred to as 'jitter'. Low frequency jitter can be caused by capstan or drum eccentricity, but the higher frequencies are due to the flexibility of the tape being excited by surface irregularities catching in the tape path. Fig.4 shows that in a finite slew rate signal, jitter causes uncertainty about the voltage of the signal with respect to a stable reference. The effect rises with frequency as it is proportional to the slope of the signal. It is just as important that a recording system rejects jitter as it does noise.

The initial goal of the replay circuits is to reconstruct the record waveform. The amplitude

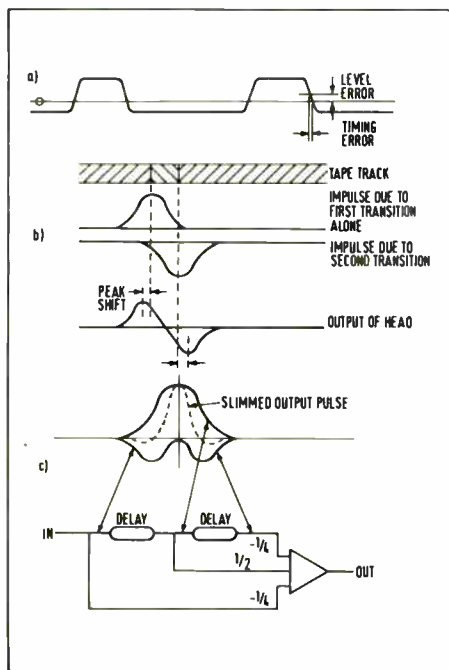


Fig. 3 At (a) lack of DC response causes timing error due to level shift. At (b) lack of HF response causes peak shift. This can be remedied by equaliser circuit at (c)

of the signal is of no consequence, what matters is the time at which the write current, and hence the tape flux, reverses. This can be determined by locating the peaks of the replay impulses. The record waveform can be restored by integration which opposes the differentiation of the head.

The reconstituted waveform will now be a replica of the timing of the record signal, with the addition of time uncertainty in the position of the edges due to noise and jitter. In the same way that binary circuits reject noise by using two

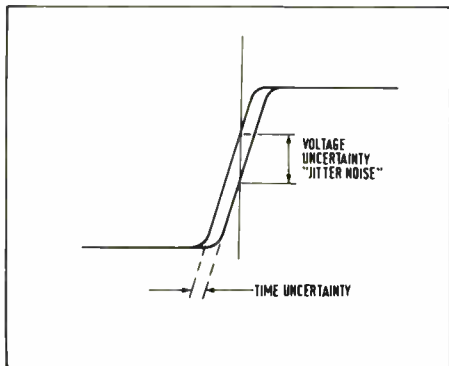


Fig. 4 Jitter can be considered a form of noise

voltage levels which are spaced further apart than the uncertainty due to noise, digital recording combats time uncertainty by using flux reversals, known as 'transitions', at multiples of some basic time period, which is larger than the typical time uncertainty. Fig. 5 shows how this jitter rejection mechanism works.

As digital transitions occur at multiples of a basic period, an oscilloscope triggered on random data will show an eye pattern. Noise closes the eyes in a vertical direction, and jitter closes the eyes in a horizontal direction, as in fig. 6. In the centre of the eyes, at regular intervals, the replay circuitry must make binary decisions about the state of the signal, high or low. If the eyes remain sensibly open, this will be possible. Clearly, more jitter can be tolerated if there is less noise, and vice versa.

It is not possible to record data directly onto the medium, as will be shown. In real data, continuous ones and continuous zeros can occur, and as shown in fig. 7 this is effectively a DC

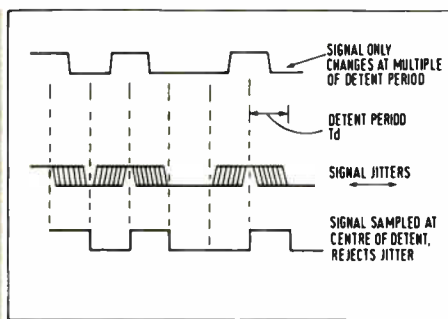


Fig. 5 A certain amount of jitter can be rejected by changing the signal at multiples of the basic detent period described as  $T_d$

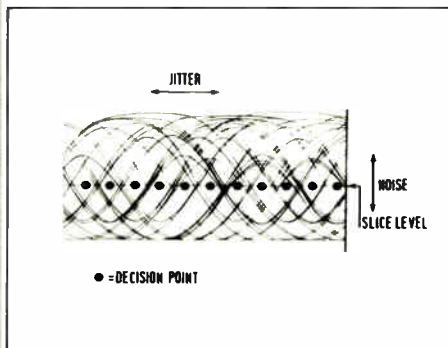


Fig. 6 Typical digital eye pattern. At the decision points, the receiver must make binary decisions about the voltage of the signal, whether it is above or below the slicing level. If the eyes remain open, this will be possible in the presence of noise and jitter

component of the source data. Alternate ones and zeros represent the other extreme, a frequency of half the bit rate. Magnetic recorders will not respond to DC, nor is it possible to discriminate between successive identical bits in a channel subject to time instability. In other words, if there is a string of zeros to be recorded, between ones, and only the ones generate pulses on replay, it is not possible to count the number of zeros between the ones if the speed of the tape is changing due to jitter. Both of these problems can be solved with a suitable channel code, which will combine a clock with the data to permit separation of adjacent bits, and reduce the DC content.

The basic time periods of the recorded signal are called 'positions' or 'detents', in which the

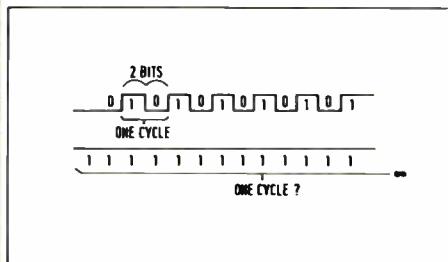


Fig. 7 The extreme cases of real data. Alternate ones and zeros gives the highest frequency, or Nyquist rate (= half bit rate). Continuous ones (or zeros) gives DC. Real data fills spectrum from DC to Nyquist rate.

recorded flux will be reversed or stay the same according to the state of a channel but which describes the detent. Channel coding is the art of converting real data into channel bits. It is important to appreciate that the convention in coding is that a channel bit one

represents a flux change, whereas a zero represents no change. Since the code used in R-DAT is complex, some simpler codes will be described first by way of introduction.

In FM two channel bits are necessary to convey one data bit. The first is always a one, such that there is a flux change at the beginning of every bit cell. The second will be the same as the data bit. As one channel bit is always the same, the code is not very efficient.

In MFM the highly redundant clock content of FM was reduced by use of a phase-locked loop in the receiver which could flywheel through missing clock transitions for short periods. This technique is implicit in all of the more advanced codes, and a synchronising waveform, known as a preamble, must precede every block of data to bring the phase-locked loop to the right frequency before the data arrive.

The transition at the centre of the bit cell is retained for a binary one, but the bit cell boundary transition is only required between successive zeros. There are still two channel bits for every data bit, but adjacent channel bits will never both be one, thus doubling the minimum time between transitions, allowing a doubling of the recording density. MFM is still in use today in double-density floppy disks.

More recent codes including that of R-DAT rely on converting patterns or groups of real data to patterns of channel bits with more desirable characteristics using a conversion table known as a 'code book'. For example, in four data bits there are 16 patterns, and if these are to be expressed as five channel bits, in which there can be 32 patterns, then half of the patterns will not be used. The choice of which to use and which to discard is based upon the desired trade-off between channel spectrum width, DC content and jitter resistance.

The ratio of the number of data bits to channel bits is called the 'code rate'. Using a low rate code gives a larger proportion of channel patterns which can be discarded, and greater potential to increase density by choosing only those patterns with widely spaced channel ones. Unfortunately, the more channel bits used for a given number of data bits, the less the resistance to jitter, since the channel detents are shorter. An important pair of parameters which can be used to measure codes are the 'Run Length Limits'. These are the maximum and minimum number of detents which elapse between channel bit ones. The greater the ratio of  $T_{max}$  to  $T_{min}$ , the greater the asymmetry of the waveform will be, leading to peak shift and DC shift.

The low tape consumption of R-DAT is achieved by a combination of narrow track spacing and high linear data density along the track. The latter is achieved by a combination of head design and the channel code used. The head gap used is typically 0.25 micrometres.

The essential feature of the channel code of R-DAT is that it must be able to work well in an azimuth recording system. The crosstalk cancellation of azimuth recording fails at low frequencies, so a suitable channel code must not only be free of DC, but it must suppress low frequencies as well. Also, erasure is by overwrit-

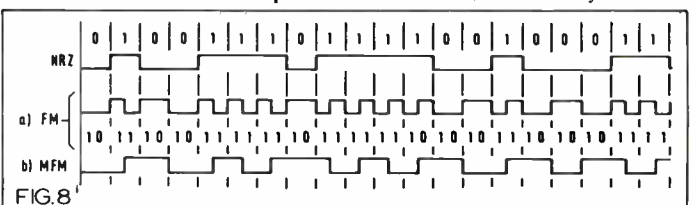


Fig. 8 At (a) the simple FM channel code has a flux change in every bit to act as a clock. This is inefficient. At (b) clock content is reduced by only placing clock transitions between zeros. A phase-locked loop is necessary to recover the clock.



ing, and as the heads are optimised for short wavelength working, best erasure will be when the ratio between the longest and shortest wavelengths in the recording is small.

Fig.9 shows some examples from the 8/10 Group Code of R-DAT. Clearly, a channel waveform which spends as much time high as low has no net DC content, and so all ten bit patterns which meet this criterion of zero disparity can be found. As adjacent channel ones are permitted, the possible rate of flux reversals needed on tape is actually slightly higher than the bit rate, but the amount of jitter which can be tolerated is 0.8 data bit periods, compared with 0.5 data bit periods for MFM. Unfortunately there are not enough DC-free combinations in ten channel bits to provide the 256 patterns necessary to record eight data bits. A further constraint is that it is desirable to restrict the maximum Run Length to improve overwrite capability and reduce peak shift. In the 8/10 code of R-DAT, no more than three channel zeros are permitted between channel ones, which makes T<sub>max</sub> only four times T<sub>min</sub>. There are only 153 10-bit patterns which are within this maximum run length and which are DC-free. The way in which the DC content of a code is assessed is to use the so-called Digital Sum Value, or DSV. For every channel bit period that the record current flows one way, one is added to a count, whereas for every

8 Bit Dataword	10 Bit codeword	DSV	Alternative DSV codeword
00010000	1101010010	0	
00010001	0100010010	2	1100010010 -2
00010010	0101010010	0	
00010011	0101110010	0	
00010100	1101110001	2	0101110001 -2
00010101	1101110011	2	0101110011 -2
00010110	1101110110	2	0101110110 -2
00010111	1101110010		

Fig.9 Some of the 8/10 code book for non-zero DSV symbols (two entries) and zero DSV symbols (one entry) channel bit period that it flows the other way, one is subtracted from the count. Clearly, signals such as a square wave have a DSV of zero, because they spend an equal amount of time in each state, whereas asymmetrical signals would give non-zero DSV.

The remaining 103 data combinations are recorded using channel patterns that have non-zero DSV. Two channel patterns are allocated to each of the 103 data patterns. One of these has a DSV plus 2, the other has a DSV of minus two. For simplicity, the only difference between them is that the first channel bit is inverted. The choice of which channel bit pattern to use is based on the DSV due to the previous code. For example, if several bytes have been recorded with some of the 153 DC-free patterns, the DSV of the code will be zero. The first data byte is then found which has no zero disparity pattern. If the plus 2 DSV pattern is used, the code at the end of the pattern will also become plus 2 DSV. When the next pattern of this kind is found, the code having DSV of minus 2 will automatically be selected to return the channel DSV to zero. In this way the code is kept DC-free, but the maximum distance between transitions can be shortened. A code of this kind is known as 'Low Disparity'.

In order to reduce the complexity of encoding logic, it is usual in Group Code Recording to computer-optimize the relationship between data patterns and code patterns. This has been done for 8/10 code so that the conversion can be performed in a Programmed Logic Array. Only DC-free or DSV=+2 patterns are produced by the logic, since the DSV=-2 pattern can be obtained by reversing the first bit. The assessment of DSV is performed in an interesting manner. If in a pair of channel bits the second

bit is one, the pair must be DC-free because each detent has a different level. If the five even channel bits in a 10-bit pattern are checked for parity and the result is one, the pattern could have DSV of 0, ±4 or ±8. If the result is zero, the DSV could be ±2, ±6 or ±10. However, the codes used are known to be either zero or +2 DSV, so the state of the parity bit discriminates between them.

Fig.10(a) shows the truth table of the PLA, and fig.10(b) shows the encoding circuit. The lower set of XOR gates calculate parity on the latest pattern to be recorded, and store the DSV bit in the latch. The next data byte to be recorded is fed to the PLA, which outputs a 10-bit pattern. If this is a zero disparity code, it passes to the output unchanged. If it is a DSV=+2 code, this will be detected by the upper XOR Gates. If the latch is set, this means that a previous pattern had been +2 DSV, and so the first bit of the channel pattern is inverted by the XOR gate in that line, and the latch will be cleared because the DSV of the code had been returned to zero. Decoding is simpler, because there is a direct relationship between 10-bit codes and 8-bit data.

As the channel code does not always have a flux reversal at a channel bit position, the only way in which it can be decoded is to use a phase-locked loop to regenerate the channel bit clock. In phase-locked loops, the voltage-controlled oscillator is driven by a phase error measured between the output and some reference, such that the oscillator eventually runs at

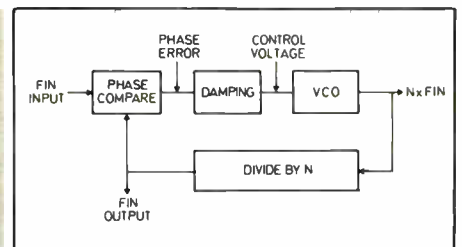


Fig.11 A typical phase locked loop where the VCO is forced to run at a multiple of the input frequency. If the input ceases, the output will continue for a time at the same frequency until it drifts.

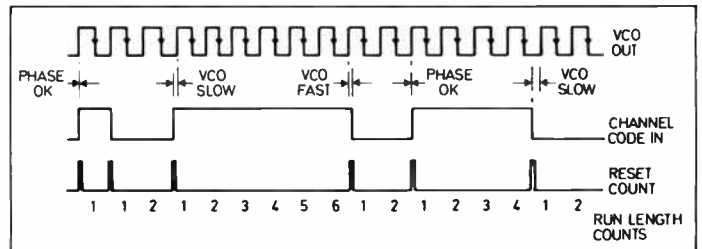


Fig.12 In order to reconstruct the channel patterns, a phase locked loop is fed with the channel code and freewheels between transitions, correcting its phase at each one. Counting the VCO edges ( ) between transitions reconstructs the channel bits. If the medium changes speed, the VCO will track. If the maximum Run Length is too long, the VCO will not be able to phase correct often enough, and may miscount channel bits in the presence of jitter.

the same frequency as the reference. If a divider is placed between the VCO and the phase comparator, as in fig.11, the VCO frequency can be made to be a multiple of the reference. This also has the effect of making the loop more heavily damped. If a channel code is used as a reference to a PLL, the loop will be able to make a phase comparison whenever a transition arrives, but when there are channel zeros between transitions, the loop will flywheel at the last known frequency and phase until it can re-phase at a subsequent transition. In this way, cycles of the VCO can be counted to measure the number of channel zeros between transitions and hence to decode the information. Fig.12 illustrates this mechanism. Clearly, data cannot be separated if the PLL is not locked, but it cannot be locked until it has seen transitions for a reasonable period. The solution is to precede each data block with a pattern of transitions whose sole purpose is to provide a timing reference for synchronising the phase locked loop. This pattern is known as a preamble.

It is vital to know at what point in the data stream the preamble finishes and the actual data commences. In serial recording, words are recorded one after the other, one bit at a time, with no spaces in between, so that although the designer knows that a block contains, say, 12 words of 16 bits each, the tape simply holds 192 bits in a row. If the exact position of the first bit is not known, then it is not possible to put all of the bits in the right places in the right words. The effect of sync slippage is devastating, because a 1-bit disparity between the data bit count and the bit stream will corrupt every word in the block, which is just as bad as a massive dropout. At the end of the preamble, a so-called sync pattern may be inserted. This is a pattern which is identical for every block, which will be recognised by the replay circuitry and used to reset the bit count through the block. By counting bits from the sync pattern and dividing by the wordlength, the replay circuitry will be able to determine the position of the boundaries between words. R-DAT uses a technique where the synchronisation pattern is a pattern of channel bits, not data bits. Such a technique is also used in the Compact Disc. ● Next month: Error correction strategy.

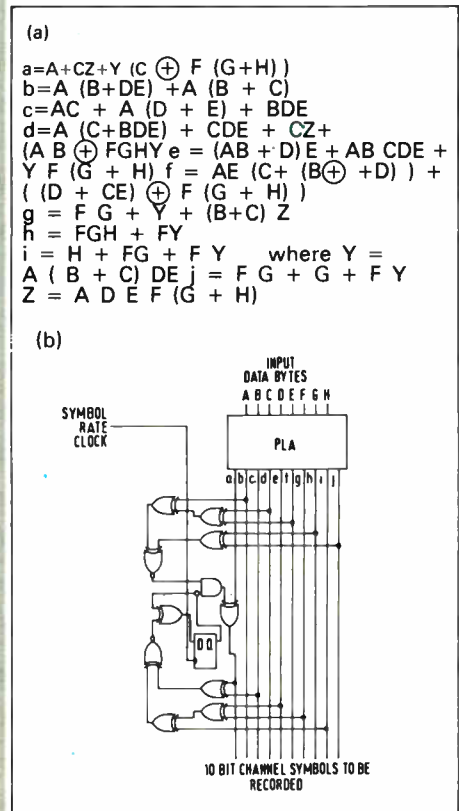


Fig.10 At (a) the Truth Table of the symbol encoding prior to DSV control. At (b) this circuit controls code disparity by remembering non-zero DSV in the latch and selecting a subsequent symbol with opposite DSV.

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World Radio History

Fresh from his whistle-stop tour, Ken Kessler reports on recent developments in Japan

# HONSHU-CH-BOOGIE



Photography: Ken Kessler



*Gaudness gracious! The Akihabara shopping district; top, anachrophile Mecca: valves of every stripe; centre, DAT... and we can't have none; bottom, psst! - Wanna buy a 9-pin DIN?*

**E**XPERIENCE separates the men from the boys, so call me 'Laddie'. Co-traveller Alvin Gold had been to Japan before, Barry Fox reckoned this was his tenth trip, and host Andy Giles couldn't decide whether it was his seventh, eighth, or ninth crossing. I had been warned to expect nothing like I'd ever experienced before, a culture shock far greater than visiting one of the many countries on the Continent. It proved to be understatement. Even repeated viewings of *Shogun*, *The Seven Samurai*, and *Whicker's World* can't prepare you for The Real Japan.

We went for a week, the business portion including tours of the various Yamaha factories, discussions with the designers, and listening sessions in front of the company's brand-new, state-of-the-art system. Pretty much standard fare, or so we thought. What transpired was quite different, partly because three things overshadowed the whole affair: DAT, CD-V, and... the pending US and UK tariffs against Japanese goods. It would prove to be an eye-opening week.

The flight was uneventful, aside from learning that the sober, steady Barry Fox has a penchant for fermented beverages while in transit. It started when the steward approached. He asked Andy, 'A drink sir?' To which Andy replied, 'Champagne'.

'And lunch?'  
 'Chicken.'  
 To Barry, the exchange went:  
 'A drink, sir?'  
 'Bloody Mary, please.'  
 'And lunch?'  
 'White wine.'

Then, glancing over to his seat, I witnessed my hero - the Ralph Nader of Hi-Fi Journalism - sweeping vodka miniatures into his flight bag with a subconscious gesture. It speaks volumes for Barry's professionalism that his eyes never left the page he was perusing - something about satellite television - while he filled his travelling wet bar, but it did tarnish my image of him.

I started out on the wrong foot. When Yamaha - through Giles-San - invited Gold, Fox, and Kessler, they didn't question the need

for visas. After all, UK passport holders saunter through with an instant 90-day limit, no questions asked. As for Americans...

'No, Mr Kessler. You need visa. No visa - you stay only 72 hour. Take three day to see-uh Magistrate.'

He let me squirm for long, agonising minutes before adding, 'We make exception. We give you, uh, 15 day. But you don't make mistake you come second time, hokay?'

You got it, Jack. So didn't the rest of the entourage, who stood for a good 45 minutes in the 72 degree humidity of Narita Airport, waiting for KK. As a result, I was the first to commit a major gaffe - the first of many - and earn a nickname. Ken 'Deportee' Kessler shall follow me to the grave.

Before you even leave Narita, you know you're in Hi-Fi Heaven, a consumer's paradise just geared to make your stay on earth a gadget-filled existence. Signs everywhere pointed to Japan as the home of consumer electronics, and every consumer durable sported a name which we in the West associate with hi-fi.

Panasonic air conditioners. Hitachi solar panels – even Andy Giles couldn't escape it, grabbing a luggage trolley emblazoned with the legend JVC. Normally, you're exhorted to spend on your way out. In Japan, you're expected to spend from dawn to dusk and beyond.

Yamaha knew that we visitors, despite self-images as seasoned cynics, would fall prey to the lure of Japanese gadgetry in its natural habitat. As a result, the first day was set aside for shopping, with a visit to the legendary Akihabara district. Some have called it Tokyo's Tottenham Court Road, but that does the Akihabara a great disservice. Rather, it's what Tottenham Court Road could be if the British retailer had half the initiative, integrity, and sheer commercial panache of the Japanese counterpart. But classy it isn't, and to visit Akihabara is to 'gaud-out', for it is indeed the gaudiest spot on the planet.

In the midst of a market with stalls selling everything from 24-pin LSIs (and who knows what Japanese DIYers do with the things?) to unused pre-war Western Electric valves, Giles observed, 'You know absolutely nothing about consumer electronics until you've visited Akihabara'. He was so-o-o right. It's like a restaurant with a 90-page menu, the Las Vegas of Electronics, the Foyle's of FETs. Where else do you find six-storey department stores with Walkman on the ground floor and Futterman on the top?

We entered, each with his own private goals. Barry, dressed *à la* Sandy Gall in the Lebanon,

## STATE OF THE ART?

Of all the wonders to which we were exposed, all pale in comparison to Alvin Gold's purchase for his youngest heir. Found in the gift shop of the hotel was an ordinary-looking Teddy Bear . . . which repeated everything you said to it, the mouth moving along with the speech. We were staggered! No clever tape recorder here, but an instant-on LSI which recorded and immediately played back up to five seconds' worth of sounds. Naturally, we taught it how to curse in Yiddish and laugh in Japanese. The cost of this 21st Century technology? £40.

was stalking the wild DAT cassette in its natural habitat. Alvin, having already purchased an LSI-equipped teddy bear (see side-bar), suffered near-apoplexy upon espying acres of radios when all he needed was one with a decent number of wavebands. He also succumbed to one of the thousands of credit-card-sized calculators, his purchase including a memory bank holding 50 phone numbers and a four-year alarm clock. All I wanted were the 12 elusive Japan-only Beatles CDs.

We were all flummoxed. Barry was led by our guide to a back room which, after producing the blank DATs, wouldn't accept his credit cards. Alvin was stumped only by a surfeit of models. My problem was even more basic. The Japanese do not stock CDs or LPs alphabetically (Japanese or English) but by genre, and their idea of genre puts the Beatles between Bryan Ferry and the Smiths. To make matters worse, the CD department in a Japanese shop is not the manageable affair you expect to find here in the West. At the Yamagiwa Soft Shop – the six-floor temple to consumerism in which we further bugged the balance of trade – the selection is larger than HMV's, the Virgin Megastore's, and Tower Records' selections combined. I broke down after blistering my fingertips and asked our guide – whom I shall refer to as 'Sam' – to help me locate the Beatles. I found them before he did, which gives you some idea of his efficacy.

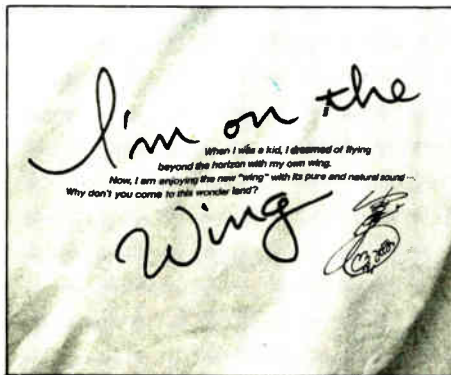


If you don't like CDs, they make swell timepieces. A Rolex it ain't

On the other hand, he did manage to secure discounts for us. While I was doing a jig, clutching my Beatles CDs to my breast, Sam was in conference at the counter. It appears that I was entitled to rub a coin over a competition card, the act exposing a prize. Sam did the honours and pulled first prize for me, much to the chagrin of Alvin and Andy. They had been lusting after this ludicrous clock, which consisted of a large coiled spring, some five inches in diameter and five inches tall, topped with a CD marked out as a clock face. Of which I was now the proud owner.

While in the Yamagiwa, I remembered a command from Central Office: find more possibilities for the Accessories Club. I was depressed to find only one new item, something which even Sam was at a loss to describe, which I gather were ceramic discs for inserting between components in place of the fitted rubber feet. What they were supposed to do I know not, but I balked at paying £8 per foot when at least three were needed for each component. Then I discovered the CD Diapers, which you might be able to buy exclusively from HFN/RR . . .

Anyway, this microcosm called Akihabara is truly a crash course in Japanese hi-fi, with footnotes helping to illuminate the problems which have caused the current tariff fracas. The first thing you notice is that Japanese goods cost a bundle in the homeland, with some items like cameras selling for as much as 35-50% more than they do in the UK and almost 100% more than they do in the USA. One product, currently the most talked-about piece of photographic apparatus on the market, cost £550 to the UK's £399. What you gather from this is 1) don't buy anything in Japan if it's available back



A free subscription for the best translation . . .

home, 2) don't buy anything in Japan which may one day be available back home, and 3) go easy with arguments about the Japanese 'dumping' product in the export markets. It's as much a case of them pricing the stuff prohibitively high in Japan to prevent travellers from making multiple purchases, thereby entering into small-scale parallel importing. Rather than look at it as dumping, it's probably a method for the

Japanese to protect their agents abroad. If this sounds like 'inverse dumping' to you, ask car fanatics about the disappearance of savings when collecting new cars abroad, now that certain UK and Continental manufacturers have decided to eliminate the savings by pricing parity. Whatever, it does raise a number of questions about the arguments for and against tariffs.

On the other hand, there is much evidence which does favour those who want to get tough with the Japanese. Imported goods, too, are so dear that it's no wonder exports to Japan reach only piddling numbers. I thought that £4355 was a bit much for a Celestion System 6000 system, and that £132 was well over the top for Sennheiser's HD540 headphones. Fancy a Meridian 207 CD player? Yours for only £1911. How about £435 for a Thorens TD321? You get the picture. As you can see, it's not just the bogus, labyrinthine regulations which keep imports from scoring in Japan but the pricing structure. What I think really has the Japanese worried is the success for foreign companies which they know would follow if free trade were allowed. And here's why:

Japan is about as status-conscious a society as exists today – right up there with America and Germany – and nothing speaks more highly of a Japanese Yuppie than foreign-made possessions. Cars? Bosses drive imported cars (BMW's and Merces seem to be the preferred models, with Porsches having special appeal for Japanese gangsters). Watches? The Japanese don't want Seikos, they want Rolexes, Heuers, and Cartiers. Cameras? Scratch a Japanese photographer armed to the teeth with Nikons or Canons and you'll find a potential Hasselblad or Leica owner just waiting to burst out. The top floor of the Yamagiwa may have been a bit short of customers on a Monday afternoon, but I don't think that those imported Rowlands, Krell, Apogee, Meridian, Pink Triangle, Rogers, and Tannoy products were there just for show.

The behaviour of Japanese audiophiles confirms these thoughts, because unlike their British and American counterparts, they do not favour homegrown hardware. While we and our American cousins can proudly fly our own flags, the Japanese audio casualty turns to manufacturers like Tannoy, JBL, McIntosh, Mark Levinson, Krell, Linn, and Quad. Just thumb through the 'Reader's Systems' section of any issue of *Stereo Sound* and you'll see enough foreign equipment to think than Japan is positively import-crazy.

*Stereo Sound*, by the way, encapsulates Japanese attitudes toward hi-fi. This quarterly sells for about £8 and weighs nearly the same. It's produced with more care than your average coffee table book and sports more colour than an ICI paint chart. So vivid are the illustrations that you don't need to know a word of Japanese to get the gist of the article about the reader who also collects Rickenbacker guitars (16 hanging on the wall) and keeps his Alfa Romeo GTV parked in his hi-fi listening room. (Honest!) After you've scanned its 500-plus pages, with mouthwatering ads for exotic gems like the Air Tight and U-Bros valve amps and Thorens Commemorative wristwatches (only £1955), you start to wonder if maybe too much choice is a bad thing. (Note: My mention of this journal has nothing to do with the fact that one of its advertisers reprinted a review of mine . . . without my permission.)

You think a Thorens wristwatch sounds weird? It all gets back to the mentality of the Japanese audiophile/collector, which is no more absurd than a British Porsche owner who wears Porsche sunglasses and a Porsche rally jacket.



This is but 10% of one shop's selection of personals

Photos of listening rooms show a penchant for displaying point-of-sale posters of the hallowed makes, shelves full of pristine brochures, and a feeling that the original packing material has

calibre to satisfy even the most critical classical buffs. Prerecordeds aside, DAT has hit with enough impact for one major outlet to fill its windows with the stuff, festooning the shopfront with a gigantic sign proclaiming the arrival of the new format with the same sort of celebratory glee which usually warns of a new Andrew Lloyd Webber epic. Inside, a Vegas style DAT display is the first thing which hits you

pointed out just where there was scope for further miniaturisation, which led us to accept that the tiniest DAT portables of the future would not shrink to much beyond the size of today's smallest CD personals. Part of the problem is the impossibility of combining the loading area with the final position of the tape in play-record mode, as is possible with analogue (fixed-head) cassettes. Because the system requires flip-down arms and rollers as per the video transports upon which it's based, DAT will always require a loading bay from which the cassette is pulled into the unit with the 'arms' down, which then emerge during the process of pulling the tape from the shell. The thickness, too, had only so much more fat to shed, so forget DAT personals only fractionally larger than the tapes themselves.

Without wishing to put words into my hosts' mouths (my Japanese is severely limited), I gathered that S-DAT is all but history, that OEM DAT deals have already been cooked up for even the most anti-DAT manufacturers, and that - shock, horror! - some incompatibilities have already occurred. The latter came as news to all of us, but we couldn't get anybody to be so crude as to identify which machine was the source of woe. (The various tapes already on the market appear not to be at fault.) I trust that Barry 'Our Man In Kyoto' Fox will soon suss out which manufacturer has the red face.

Discussions about DAT also revealed Yamaha's feelings about the Copycode situation; I thought Barry was going to hug each and every employee in sight. In essence, Yamaha does not

### DAT: THE LAUNCH

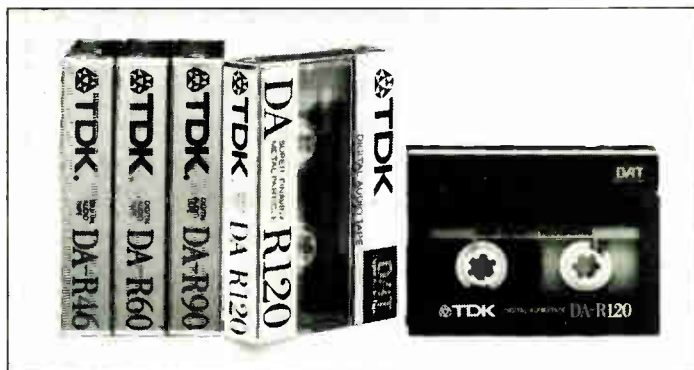
Below are listed the machines available in Japan in late April, with projected models listed with some certainty. Prices are calculated at £1=¥225.

#### PLAYERS

Make	Model	Launch	Price	Notes
Aiwa	XD-001	2/3/87	£835	
Matsushita	SV-D1000	2/3/87	£880	2000 units/month
Sharp	RX-X100	2/3/87	£884	
Sharp	RX-X5	2/3/87	£866	Midi-sized
Sony	DTC-1000ES	23/3/87	£888	OEM for Grundig (?)
JVC	XDZ-1100	23/3/87	£880	4hr recording; 32kHz
Hitachi	DAT-9000	23/3/87	£840	
Toshiba	XC-1000DT	4/87	£880	
Denon	4 or 5/87			
Onkyo	6/87 (?)			
Kenwood	6/87 (?)			
Mitsubishi	8-10/87 (?)			OEM for Philips (?)
Pioneer	5/87 (?)			
TEAC	5/87 (?)			
Yamaha	Summer 87			

#### TAPES

To be sold by Aiwa, Sony, Maxell, Fuji, JVC, TDK.  
120m £8.88; 90m £7.55; 60m £6.22; 46m £5.33.



Honest - they do exist!

been bronzed before going into storage. This is an encounter with some of the most obsessive, fastidious people in the world, which is as much a reason for Japan's global commercial success as it is grounds for our amusement.

The latest thing to wrest disposable income from Japanese hi-fi buffs is - of course - DAT, and it seems that the welcome in Japan has been a warm one despite the total lack of prerecorded DAT tapes. From what I could gather, the Japanese record companies are in no position to anger the Western companies who are so opposed to DAT; this is in marked contrast to the hardware producers. Naturally, the Japanese companies with access to Western recordings have to play ball with the original copyright holders, so forget finding DATs of Dire Straits, David Bowie, or any others likely to be the first transferred to the new format. So how about native music, you might inquire? One person I asked said that the Japanese don't really give a hoot about traditional music outside of restaurants or during holidays, so producing title after title by Japanese artists performing Japanese music wouldn't make much difference. It doesn't explain, however, why enterprising companies haven't yet made DATs of Japanese musicians performing (Western) classics, of which there are thousands in existence, and of a

when you step off the escalator at the hi-fi level. Great, I thought, the perfect subject for a photo for *HFN/RR*.

Out comes the camera. Up go the hands. 'No photos please.' I ask Sam 'Why?' and get some story about the shop assistants thinking I might be from the competition. This I soon realised was pure doggie-do, not having seen one Westerner in the employ of any of the establishments we'd visited. In light of my status as an undesirable, I chose not to cause a scene. In saunters Alvin Gold, who snaps away merrily and not a word of complaint is uttered. Had Immigration branded me with a giant letter 'A' visible only to the Japanese?

Yamaha spokespersons were more than happy to fill us in on the DAT scene when we visited them over the next few days. In addition to hard facts like model availability and pricing (see box), we were told that Yamaha had decided to hold back until the end of the summer and go straight in with a second-generation DAT machine. We were shown - but couldn't photograph - their advanced transport, and were informed that Yamaha's deck would sport entirely new LSIs made in their own factories which were a stage beyond those currently available.

The engineer showing us the DAT transport

approve of the copycode system because of its negative effect on the music, the phase problems it introduces, and a whole host of other complaints cited by everyone except CBS. It was suggested that CBS opted for the analogue filter as it's cheaper; Yamaha preferred to design their own system working in the digital domain, despite the extra cost. It was even mentioned that Yamaha would rather see a tax or a levy which would dispense with the whole copycode issue, but the notion is far too sophisticated for the sort of legislators which get involved in such matters. During our stay in Japan, much was afoot in the USA, with journalist Len Feldman having demonstrated to Congress that the CBS system leaves much to be desired. We found out, too, that a demonstration had been planned which would show exactly how much music would be chopped out of recordings through the use of copycode. If the demonstration worked - and Barry will let us know in an upcoming 'Technology' - maybe Yamaha won't need to create its own substitute for the CBS circuit. At least CD-Video won't be plagued by such problems. And if the CD-V demonstration we enjoyed is anything to go by, it will be one hell of a fight for the consumer's attention... (Next month: CD-Video, the Centennial System, motorcycles, and memorabilia.)

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# THE DESIGNER SERIES

Stan Curtis, the lateral thinker behind many amplifiers as well as the outstanding Cambridge Audio CD player, talks to Steve Harris

**T**HE COMMERCIAL SUCCESS of the Cambridge Audio CD player came as a surprise to everyone, including perhaps its designer, Stan Curtis. Before the CD1 appeared, Stan was known mainly for his ability to concoct outstanding value-for-money amplifiers. Yet to follow the CD1, with its tuned mechanism, elaborate suspension system and power supplies, and above all its cunning use of three D/A converters per channel, he has a design which is in some ways even more radical. While others are still super-tuning an analogue output stage, Curtis has dispensed with it altogether in the 16-bit, 16x oversampling CD2.

With his dry Yorkshire wit and engaging cynicism, Stan is refreshingly down-to earth about the audio business and his own work. In conversation he makes the designing of better amplifiers and CD players sound as easy as falling off a log. Nevertheless, he is shrewdly aware of just how good his products are, and exactly what the competition is doing.

Stan studied electronics at university and went straight into industrial electronics, but he had been playing in semi-pro rock bands since his school days.

'I was one of the original devotees of Hank Marvin of the Shadows. My response when I saw a Stratocaster for the first time was, every Saturday for about six weeks, going to the local guitar shop with a surreptitious tape measure, measuring the thing up, until I had a complete set of drawings; then, in the woodwork classes, actually building a counterfeit Fender Stratocaster. I had even measured the distances between frets with a ruler, so I don't know how I ever got it to stay in tune!

'I played guitar, bass and later sax and mainly keyboards and became a semi-pro musician and actually made records, and stayed with bands until I was about 30. I finally parted company with the last band I was in when they went professional, and decided to get on with my career. Having this interest in electronics, I inevitably got involved in recording, and had the opportunity of joining Colin Hammond, who at that time was the Revox agent for Britain, the

USA and Canada, as chief engineer, and interfacing with the Studer factory. That showed all the signs of being a marvellous job, with involvement in music, recording studios and engineering; but unfortunately it only lasted a couple of months, because Colin went out and bought a fledgling hi-fi company called Cambridge Audio. This company had launched an exciting product, the P40 amplifier, but when they tried to go from making one to making a hundred, they fell flat on their faces. I knew nothing about this until one morning, Colin Hammond said he was driving me to St Ives, which as far as I knew was a place in Cornwall (when we got halfway up the A1 I began to have doubts) and when we got there he said "this is your new job, technical director of Cambridge Audio." Those were the days when I still had a lot of flexibility, so I didn't question it; I proceeded to work there for several years.'

This was followed in the mid 1970s by periods with Lecson and Mission, after which Stan set up as an electronics consultant.

'By this time I modestly believed I knew something about amplifiers and set out to teach the Japanese. Initially, my words fell on stony ground, because the Japanese believed they knew everything about amplifiers, but I was picking up a good deal of general consultancy work in electronics, as well as doing a bit of writing in hi-fi magazines (mainly *Hi-Fi For Pleasure*, which later became *Which Compact Disc?*). It was very interesting, being on the other side of the fence for a change. Then one particular relationship began to develop strongly, more than six years ago now, when I designed the first of a new range of electronics for Rotel, the RA820. Once people found out who was behind the 'Rotel sound', I couldn't move for people from the Far East knocking on my door wanting products designed.

'One of the people who knocked on my door was the then-owner of Cambridge Audio, who had decided to resurrect the company, and he asked me to design a range of products. Unfortunately, after finishing the first product, the owner found himself in financial difficulties, and so in 1984 my wife and I bought him out and

decided to treat Cambridge Audio as a serious business. In three years we've taken the company from basically nothing to a £1m business'.

What was Stan's starting point when he designed the Rotel '820?

'I think the specification they gave me was probably the one that every company gave its designer at that time. It was: "There's this amplifier called the NAD 3020, which seems to be selling in vast quantities, making lots of money. We've got to have something that will knock it out of the market. Life was simple then, because there was only one amplifier to go after. The NAD was very musical but had a rather soggy, ill-defined bottom end. And so I set out with Rotel to produce a musical amplifier, with all the virtues of good focus, good depth, reasonable transparency, but with a very tight, precise, indeed dry, bottom end. I used a trick, which is a valid trick, of tuning the power supply, which is a matter of adjusting the parameters of the transformers, rectifiers and capacitors, such that it was able to give the maximum transfer of energy from the power supply to the output stage in the bass guitar frequency region, and that meant that when bass guitar was playing, the sound appeared to be very quick, because there was very quick transfer of energy through the amplifier and into the speakers. Below that region, the power supply got into trouble, and the sound became flabby; above that, the power supply became less dependent on the characteristics of the reservoir capacitors.

'That had to be combined with a limitation on the bandwidth of the power amplifier so that the bass rolled off very quickly, so that the amplifier was never forced to produce a lot of sound where the bass was going to be really flabby.

'I used to talk about a balanced design concept. If you're going to produce an amplifier which will keep people happy, it's no use having a very high power output if the sound is distorted in some way, because you'll just hear very loud distortion. It's no use having a very wide bottom end response if the bass sound of the amplifier is flabby and uncontrolled and the power amp just can't keep a grip on the woofer.

and the woofer just flaps in and out. You've got to keep a balance and get the best possible sound, bearing in mind the restrictions that are built in. Virtually every amplifier that I've built in the last 10 years has been limited in design concept by working to a very tight budget. If you have to design an amplifier (which tends to be the American approach) where you're told: "It doesn't matter what it costs, make it sound good", any competent engineer should be able to produce an excellent product. You can optimise the power supply, you can make the output stage work however you want it to; but if somebody says to you "I want you to produce an exceptionally good integrated amplifier and you can spend £17 on the parts", you tend to think in a completely different way. And it's not a bad approach, because you have to question every resistor; you actually have to question how long pieces of wire should be; can I save money on the wire? If you can do that and get good results, it does teach you which parts are vitally important, and which are less important. An extension from that is that you use slightly more expensive parts for places where it's vital, and less expensive parts elsewhere, which forces you, even though you may never have thought about it, into component technology, and therefore into listening to components. If you go back, the Rotel BX series was identical to the B series except for selected components, but they gave a whole upgrade in performance.'

Stan started working on a CD player in the early days of CD, primarily because he was dissatisfied with the available machines.

'I'd been exposed to a fair amount of digital PCM recording, and I was fairly convinced that PCM recording worked, but the first generation of CD players was very disappointing. It soon became evident that with a little bit of tweaking they could be better, but there were a lot of problems. So if I could accept that the system worked, there were obviously things wrong with the CD players, that were limiting the sound we were getting. At that time I was getting a lot of CD players through my hands because I was doing measurements for magazines, and it became obvious that they all tended to have the same problem areas, although they sounded different from each other. Initially I started researching into CD players for my own interest, with no commercial application in mind, and produced the first CD1 really as a reference for myself. One of the advantages of CD from the point of view of developing amplifiers, is that you have a consistent signal source all day long. You don't have to keep checking your record deck.

'There is no one magic answer to what makes the CD1 tick. We followed the problem logically. First of all we went for the best possible digital signal. It's accepted with analogue that garbage in means garbage out, so you must have the very best record deck and the speakers come last; and the same thing should be accepted with CD. You can play around with the analogue stages as much as you like, but you need to get a perfect digital signal first.

'When you try to do that, first of all you come up against the mechanism. The dimensions on the disc are many times smaller than the information in a record groove, and it is accepted that you must have extremely rigid turntable systems with virtually zero play in the bearings, if you are to read the smallest information in the vinyl disc. However, the majority of CD mechanisms tend to be constructed of moulded plastic and pressed steel parts. Even today, you can take the lid off a CD player and watch the disc go wobbling round eccentrically, and fluttering up and down. Now, the answer to

all this from the digital engineers is "a one's a one and a nought's a nought", but then again, they forget we live in a real world. For example, if the disc is moving up and down, through warps or mechanical inaccuracy, the laser is struggling to focus on the track of information; the focus servo is moving the lens up and down. Servo systems work on the basis that if the information is incorrect or lost, a stimulus signal is generated, which moves the actuator in the opposite direction until the signal is recovered, after which the error signal ends. Now, all this takes time: it takes time to register the fact you've lost the information; it takes time to actually move the lens to the correct focusing position and recover the information. During that time, information is either read incorrectly or not at all. Similarly, with the radial or linear servo system (depending on the type of mechanism), if the disc is wobbling from side to side, the laser light-pen will be moved in and out. As it loses the track, the servo system recognises that it's lost the track, gives a signal to the motor driving the light-pen to move across the disc to find the track, finds it's got the track, sends another finer correction signal to move it on to the centre of the track, and stabilises it. During the time it lost the track, time has passed, information has passed and is lost or garbled. Now, that's assuming defects in the mechanism. What hap-



pens if the mechanism is vibrated or shaken by external disturbance? That will cause the disc to shake and probably to wobble. So again we have the same effect, loss of information during that time. It struck me that if we wanted to read the information accurately, we had to (a) optimise the mechanics, and (b) prevent any external vibration getting through to the mechanics. We optimised the mechanics by having a little error counting tool, which eventually became the Quality Assurance Module. We read a test disc and changed the characteristics of the servo system, fine tuned the focusing, and finely adjusted a few mechanical parameters until the number of errors we were getting fell away. The degree of improvement you can get if you adjust all these things is as much as tenfold.

'That's the tweaky side, if you like. Then, on the vibration side, we had to find a suspension system. We could hardly put a heavy item like a CD mechanism on a bank of springs, because springs tend to be not very rigid in the lateral plane, and you would end up with the mechanism waltzing about inside the case. So finally we came up with a two-stage suspension; the mechanism is mounted on rubber shock-absorbers, which resonate at about 20Hz and so provide isolation above 20Hz. These are then mounted on two lead beams, which are a very simple and crude cart-spring suspension. The beams are supported in the middle and the mechanism is attached at the ends. These beams appear to be rigid, but actually they resonate at about 1Hz, so they act as a low-pass filter, and nothing above 1Hz gets through.

'The end result is that you minimise the number of reading errors on the disc; now, again, we've been told by many other companies that this isn't important, this is over-engineering, because of the error correction capacity of the player. But this is assuming you get perfect discs, and one thing we can say is that the discs have very high levels of manufactured defects; if anything, it's got worse. When you go to the Compact Disc factories, although they make great efforts with quality control, the final testing of each disc is fairly cursory. It has to be, you couldn't do a real time test.

'So one of the things we aimed to do with the CD1 was to leave virtually all the error correction capacity of the player available to correct defects that are on the disc, rather than have the bulk of the error correction capacity used to accommodate reading errors, and have very little left to correct errors from the disc. If you cannot correct the errors, you get interpolation, and the sound quality takes an immediate dive. We can quantify numbers with our QA unit, and you can correlate the effect. One of the virtues of the CD1 is that you can demonstrate it with virtually any disc you can lay your hands on. All too often, a dealer has two collections of discs; the ones that sound good, and the others. Now, he never questions why the others don't sound good, they just don't sound good on the CD players he's using. When I'm showing the CD1 to someone who has never used it before, I ask him to use the others, the ones that are "no good", and quite often he'll discover that those discs are very good musically, and play in a perfectly satisfactory manner on the CD1.

'Now, if we say we've got an accurate digital signal, we have to preserve it. Some of things we do to preserve it are now taken for granted in CD player design. We totally isolate our different power supplies; the supplies for the servos are isolated from the power supplies that drive the digital logic, they're isolated from the power supplies that drive the control microprocessors and front panel switching. And we take this isolation to ridiculous degrees, but it's still essential. We started out with two transformers, one which fed the servo systems, the second one having two windings, one for logic and one for the analogue section. We now in fact have three transformers, one for logic, one for analogue, and one for control circuits. The reason for this is not just isolation of the supplies, but also isolation of grounds. We found we were getting no interaction on the supply lines, but even with star earthing we were picking up stray signals on the ground lines; if you use separate transformers, you can isolate the grounds completely.

'All we are doing, to an extent, is what some companies have tried to do with optical coupling; that enables you to isolate the signal path and the ground path. We're doing it in a much simpler way, without all the problems that optical couplings introduce. After all, a short three-inch length of wire must be superior to a transmitter, a piece of glass tube, a photo-detector and associated amplifier.

'We then have the problem of digital-to-analogue conversion. The problem is simple: you can either have speed or accuracy. It's the same as me saying to you "Multiply 14 by 62". You're going to say "Er, it's 800 odd". You can get it approximately right off the cuff, but to get the exact answer you're going to take a few minutes or reach for a calculator. The more time I give you, the more accurate you'll be. It's the same with the D/A conversion. If you ask for a snap answer, converting a digital value into an analogue voltage, you'll get an approximate voltage. If you give the converter time to settle (the technical term is settling time), you'll get



the right voltage out of the other end.

'Now, I wanted to use the 4× oversampling system, because that means we can have very simple analogue filters; but the disadvantage is that you're hitting the conversion system with four digital signals in the time you previously allowed for one the digital signal, so you're going to sacrifice accuracy. I spent a lot of time trying to solve that problem and then came out with a simple system that I don't think has ever been adequately explained in the press (everybody seems to have a different way of explaining it). We actually use a simple sequential system. It's not as simple in its final form, but in the crudest way, sample 1 goes to converter number 1, sample 2 goes to converter number 2, and sample 3 goes to converter number 3; then sample 4 goes to converter number 1 and so on. So we give each converter more time to complete the conversion. There's a bit of additional circuitry to complicate matters, but we finish up with a very accurate transfer.

'We still have errors, but we move those errors down to the equivalent level of bits 17 and 18, instead of a normal player's bits 15 and 16. In his reviews, Martin Colloms describes different players as having resolution anywhere between 14 and 15.5 bits. Effectively, it's errors giving you inaccurate resolution at very low levels. We have almost achieved 16-bit true resolution. We still have errors, but they're pushed down out of



the way, as there are only 16 bits on the disc.

'That leaves two remaining parts of the system. The next part is the stage called integration. The signal from the converter is effectively a staircase, but what you actually want is a smoothed waveform. So the integrator uses a capacitor wired into the feedback loop of an amplifier to smooth out the rough edges. We found that these stages were nothing but trouble: if you don't have enough smoothing, you have a very jagged sound; if you have too much smoothing, you have a smeared top end.

'Secondly, the stage is very prone to high-frequency distortion, and this doesn't show in conventional CD measurements. The reason for this is that a lot of designers assume that the integrator is handling signals of effectively 0Hz to 20kHz, in other words the audio band, because the CD player is rolled off above 20kHz. But of course, you've got your sampling waveform in there as well, 176.4kHz, square-wave, with harmonics all the way up to the UHF region. So your amplifier stage is being hit with all this nasty signal, and unless it is linear up to the several-megaHertz region, you're going to get IM distortion, which is going to be audible. That IM distortion is going to get more severe with more complex waveforms. You put through 19kHz and 20kHz tones and you just get a few IM products; a musical signal will have far more, all harmonically unrelated to the music.

'In the CD1 we have a three stage integrator, where we have a very low gain (low gain limits the slew rate problems) and a limited amount of filtering; so we spread the problem over three stages, and each stage has less and less difficult signals at its input, and we integrate passively

rather than using feedback.

'Then we come to the filter section. All our filters are quite simple 12dB/octave. We have seven filters, the reason for this being that with PCM record/replay, the replay filter should ideally be identical to the recording filter; otherwise there will be audible in-band coloration. We tried to emulate the filtering or combination of filters used when the material originally went into the digital domain, and finished up with seven different filters. I think a couple are redundant now, because the recording combinations haven't turned up; but I think of the filters as being like the focus ring on a camera. If you are producing a reasonably satisfactory sound, you switch through the filters and you suddenly get depth and focus.

'The key thing is not to just redesign the analogue stages, but to start right at the beginning and try to optimise each stage.'

Refinements to the CD1 continue, with a number of recent changes adding up to a further subtle advance in sound quality which has kept the CD1 ahead of its rivals.

'The CD1 will continue to represent the best we can do at an affordable price; if we wanted to make a CD player costing £9000, it would greatly be superior to the CD1. But at the end of the day, I'm not that interested in making a player that will sell to the 25 richest audiophiles across the world. I want something that is affordable.'

The CD2 provides a CD player at a price compatible with the Cambridge amplifiers, less hard to manufacture in quantity than the CD1, yet with sound quality not too far behind it.

'We needed a technology that would give consistent sound quality, but with minimum production hassles. I looked at which stages had the most effect on degrading the sound quality, and it came back to two; the integrator, and the analogue stages. Some companies have gone to great lengths in optimising the analogue stages, even to using tubes. What could be better than a tube analogue stage? The answer is no analogue stage at all, which must be better. So I then tried to think, how do we get rid of these analogue stages. We only need analogue stages because we need analogue filters. Because the PCM system is sampling the audio wave form at 44.1kHz, that can be treated as amplitude modulation, and as a result you get a replica of your audio signal centred at 44.1kHz, 88.2 and so on. So with a conventional player, you need to filter above 20kHz but below 44.1 minus 20kHz, that is 24.1kHz; hence the brickwall filter, which really fouls up the sound quality. You go to 4× oversampling, so the sampling frequency on playback is effectively 176.4kHz, and you will still have residual spurious frequencies, but you can use a fairly gentle filter. Following that through logically, if we go to 8× oversampling, we need even less filtering, because we've pushed the spurious frequencies further up. So we built an 8× oversampling prototype, and that was hard enough.

'Then some bright spark in the company said "16×16, that has a nice ring to it, that could sell a lot of players". But, seriously, 16× oversampling shifts the sampling frequency to 705.6kHz, which is right up in the medium-wave radio area. Now, to get rid of that we only need a very simple passive filter. We also don't really need an integration stage, because if you imagine, in our staircase waveform, that for every one step we previously had, we now have 16 very small steps. In effect, we have smoothed out the signal digitally, so all we need is sufficient RC time constant just to smooth out that 705.6kHz residual. There are still problems to overcome though. Data is coming of the disc at the

equivalent of 2m bits a second; by the time you go to 16× oversampling, you are looking at a real-time processing speed required on some of the stages of 20m bits a second, and you need a Walkman-size CD player with a refrigerator-size computer plugged into it. So we had to look at novel ways of doing the processing. The simplest way of getting the speed down is to use parallel processing – as the samples come off the disc you route them sequentially to one of five chains where identical processing occurs but at a fifth of the speed, so you come down to about 4m bits per second, which is achievable. Even so, we had to have some semi-custom chips made to do it.

'Then we have so much digital data coming out of the end we haven't got a hope of converting it to analogue. Now you remember the question of speed or accuracy in the CD1; we've used exactly the same solution, but with data coming at four times the rate, we finished up having to use eight D/A converters, four per channel. To get exactly the same conversion accuracy as the CD1, we would need 24 converters, but that is not on in this price range.

'With no analogue stages, this gives us a player that is extremely consistent from one sample to the next, because all you're really looking at is a few resistors and capacitors. And we've taken care with the design of the power supplies; only use one transformer, but there are isolated supplies for each section.

'One thing that has become apparent to us with CD2 (which is the first of a new series of players, and therefore we haven't stopped work) is that to all intents and purposes there are no analogue stages, yet we can alter quite a lot of things and produce audible changes. Now, that really makes you think about how CD works, because if you've got the right digital information, and a good converter, and that's all you've got, how can anything change the sound? What I am finding is that even within a virtually digital-only system, there are within the conversion system sufficient influences to carry on changing the sound. It's quite satisfying in a way that with digital-based technology, there is room left for improvement.'

What do you think about the continuing criticism of the CD system itself?

'I think the sampling rate is inadequate, and I think the number of bits of information is inadequate, but at the moment it's the best we've got, and my approach is to make the best of it. With analogue you are almost looking at an infinite sampling rate. There is a sampling rate, though I wouldn't like to estimate what it is, because there is no such thing as an ideal analogue signal; ultimately, if you look at the vibration of air you finish up with molecules. So it's a matter of degree. But what I would like to see is a much higher performance professional system, because with CD, for the first time we have finished up with a consumer system having virtually identical performance spec to the professional mastering product. So there is no room in the chain for any losses, because any losses are non-recoverable. I do feel that the professional system ought to be 18 or 20 bits with, ideally, twice the sampling rate. If we could work at 88.2kHz sampling rate, then you would have very simple conversion to 44.1 but with a much wider bandwidth. With more bits, you could record and either truncate or use the same system Philips use to shove the errors down so you get 16 good bits. I really do hope we can see the recording industry going for a second high-band PCM system, because otherwise it is conceivable that we'll reach a point where you're reproducing the master tape and that's it, all you will hear are the defects of the chain.'

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# HANDS-ON DAT

## A FIRST REVIEW

Sony's Digital Audio Tape recorder\* tested by Martin Colloms



**M**UCH has been said and written in the British press on the subject of R-DAT, the 'Japan Incorporated' concept of a new cassette standard, with an accompanying consumer audio product range. However, at present it represents a sufficiently high investment (as well as a sufficiently difficult technology) to put it out of reach of non-Japanese manufacture, and for the time-being at least the R-DAT proponents have a monopoly. As regards marketing in the UK, these are still very early days; in fact, we owe our review to a private loan of a new machine recently bought in Japan. But by the end of the year several models will be available from a few interested manufacturers, notably Sony and Technics.

While the technology is both clever and interesting, and the package undeniably attractive, is the R-DAT 'cassette' recorder really new? It is some years since Sony established a substantially good performance for a domestic digital audio processor, one working in conjunction with a domestic VCR. Their famous 16-bit PCM F1 soon followed, partnered by the matching F1 video recorder, this pair providing the basis for a competent fixed or portable digital audio recorder which used conventional video cassettes. Following that, Technics came up with their complete console-type DAT with a built-in VHS mechanism, which has now been available for some years and comprises a 14-bit model to the old EIAJ format.

In real terms, then, R-DAT is not particularly radical, as we have had domestic digital recorders for some time now, albeit somewhat clumsy, noisy, and expensive. These machines have shown us roughly how R-DAT sounds; indeed, we used a PCM processor to predict how CD would sound long before it became available! But the processor-VCR combination did not sell in any real numbers on the domestic market. For one thing, the pricing was prohibitive, and for another, the operation was inconvenient. Nevertheless, many good amateur and some professional recordings have been made with them, including first mastering for subsequent CD release

DAT's proponents have made assumptions which lead them to believe that it can be profitable, but I wonder how true this will be. It is easy enough to point out the weaknesses of the compact cassette, its difficulties of engineering and consistency: head azimuth, dropout, tape variations, biasing, equalisation, imperfect response at the frequency extremes, HF compression, the need for a noise-reduction system, and the need (except with a few clever decks) to invert the cassette manually to play the other side. These factors are generally prejudicial, but have not prevented the cassette from becoming a useful, general-purpose and convenient music source. Its penetration in domestic hi-fi, in-car entertainment, 'Walkmans' and other portables, is complete; the tape is cheap, and surprisingly good 'miniature' players are available for as little as £30.

Now enter R-DAT. Yes, to all normal intents and purposes the audio fidelity is very good – indeed rather better than cassette, and theoretically comparable with CD. Wow and flutter, tape variations, noise, etc. have all been banished, which is a great achievement, while playing time has been extended to two hours with the likely option of double-play. As befits a new digital medium, the package is laden with modern features, including a time-code which allows accurate access to any musical track, to the second. Fast search is at some 200 times normal speed, although this still amounts to 27 seconds for a one-hour section and 52 seconds for two hours – much longer than for a CD player, where overall track search times can be as low as two seconds. Technically, the specifications are excellent, but perhaps even more importantly, the operation is foolproof – one of the main attractions of CD itself. Convenience and durability do matter (so saying, I have just dropped a friend's LP and will need to replace it!) and R-DAT certainly offers this.

Said by some supporters to sound better than CD, and to be more desirable in consumers' eyes, it has also been suggested that when widely available R-DAT will supplant CD even on the basis of prerecorded tapes – a takeover which it has been estimated may require as short a period as

# The Music Room

## NEWSLETTER

Vol 3 No. 2

### DIGITAL v. ANALOGUE

When CD was launched, The Music Room was open-minded when most other specialist dealers condemned the new medium. Then we heard the early Sony then the new Philips machines and assessed that convenient they may be, but musical they certainly were not. We were concerned that customers might be impressed by shop demonstrations of power and clarity, silent surfaces etc. but at home they would cease to listen to music and thus undermine the whole purpose and pleasure of Hi-Fi.

The machines have certainly fallen in price and risen in quality, but even last month we wrote that CD was still not the equal of vinyl. In the world of CD things move fast, and we learn with interest of CD Video and the forthcoming promotion of CD technology, no doubt timed to challenge the launch of Digital Audio Tape. Of greater interest to the true music lover however is that weeks after the last Newsletter, both in Glasgow and in Manchester we were invited to audition two future models – one from a British manufacturer and one from Japan. Both David and I were forced to believe our ears and revise our thoughts. When production versions of these machines are available we shall report further, but it now proves that the music has indeed been hidden in the numbers. We should also remind readers of the amazing increase in clarity from CD's obtained from CD Interlink cables, and from cleaning the CD with HUNT EDA's Formula P2, originally intended for vinyl and very effective there too!

### THE MUSIC

To further endorse CD, it is now becoming necessary to embrace the best of both worlds by possessing a turntable and a CDP. My wife and I have been pursuing the Czech Philharmonic's performance of Mahler Symphony No.3 ever since hearing it in Paris over a year ago. This orchestra is mainly represented on the Supraphon label, but is under appreciated in Britain. We found the double CD in Virgin, of all places, Japanese pressing by Denon and the long silent passages in this symphony



MONITOR AUDIO R-852 LOUDSPEAKERS

make the CD medium extremely valid. Look out for the Czechs – their sound is quite distinct from Western orchestras: many of their instruments have an incisive power, and the musicians generally play with more intensity. The music becomes very powerful. Czech out their Tchaikovsky Piano Concerto with a young Sviatoslav Richter as soloist and then listen to the latest recordings! Richter's speed and technique are breath-taking, and the music transports the listener into another world.

### NEW APPOINTMENT

For a few years we represented the Mod Squad, who made quite an impact on the American scene by offering audiophile modifications to amplifiers etc. and accessories, notably the tip-toes which really caught on! The rationale is obvious: to best use the customer's resources his existing equipment can be optimised often with dramatic results. The original manufacturers usually feel threatened by this, and dealers also feel that they may lose out on sales (but we know that true audiophiles will just use the money saved to upgrade something else).

In any case, you can't stand in the way of progress and at last The Music Room is delighted to have appointed a Consultant Engineer to advise us on several aspects of our work, undertake highly specialist repair work on equipment (such as my D-250 as I write) and of course modifications to all sorts of amplifiers, Quad, NAIM, Musical Fidelity etc. Already the testimonials of delighted and astonished customers more than prove the exciting dimen-

sion which this adds to our company, and we expect other dealers to follow soon.

The first accessory is a design of loudspeaker stand which instead of damping and thus wasting cabinet energies, uses them! The stand, yet to be styled, looks quite conventional: the secret is inside. The cost will not be high, only the stands! The other speciality of The Mod Squad and of our 'chap' is custom power supplies for turntables. It is no exaggeration to state that the power supply of a turntable or of an amplifier is of as much importance as the rest of the design: ask Audio Research, and others.

### FACTORY VISITS

Tomorrow, Doug, David and I are off on a tour of several manufacturers and what we see does help us to understand products, people and problems! It is all a part of being a creative dealer rather than a 'box-shifter', and we also plan to attend the Annual General Meeting of British Audio Dealers Association (BADA). As a founder member, The Music Room feels that BADA has lost its true direction and original objective to raise standards. Now almost anyone can join, and many dealers are in obvious default of laid down standards so the question is: will we put our own House in order or will we continue to lose any respect we may have left?

### MONITOR AUDIO

This month we proudly feature British loudspeaker manufacturer, Monitor Audio. The new models stand out from the pack: the £350 R-852 and the floor-standing £699 R-952. Both feature Monitor Audio's very fine Metal Dome tweeter, a pro-

duct of much research whose cost could have bought Mr Iqbal a very nice Grouse Moor in Scotland. But no, he thought of you, his customers. By tailoring the driver units and cabinets, Monitor Audio have minimised the crossover to two components and you cannot get much more simple and purist than that.

Monitor Audio have always been beyond criticism so far as excellent cabinets are concerned and they have the pick of the world's timbers because, you see, they own a cabinet-making plant. Technically, the cabinets now avoid the compromise of a ported design which could be said to be infinitely baffling. So is the quality of sound, open uncoloured and very convincing. The reviewers are right and so are our customers. Congratulations to this elite company for offering the public quality instead of mass-produced clones. We strongly urge you to "Listen to Monitor Audio then decide".

### THE EXHIBITION

We are very proud to announce that along with Edinburgh's In Hi-Fi and Russ Andrews and Glasgow's Stereo Showcase, we are sponsoring the first Festival of Sound and Vision to be held in Edinburgh on 6th-8th November this year. This will feature some important product launches, and will specialise in high quality hi-fi from all the major manufacturers. We plan to arrange 'Weekend Breaks' to enable people to travel and stay cheaply in our capital for this exciting event.

### THE NEW MUSIC ROOM/S

By the time you read this we shall hopefully be near to completion of redecoration of both Glasgow and Manchester shops. Jealous of the latter's three dem rooms, we in Glasgow are adding our second, so come and see the NEW Music Room! This month our ex-dem/second-hand bargains include Quad ESL '63 at £800, Rogers LS 5/9 at £950, Perraux Pre + Power at £1600, ProAc EBS at £1200, Decca Ribbons at £199, Meridian MCA at £199 and a Threshold Stasis Two at £1100 (bargain of the month) ... and many others at even lower Summer prices. All items fully guaranteed and have been checked by us.

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only a year or two to achieve. Personally I do not think this will be the case. CD is now solidly established and has many supporters. Unless matters alter drastically, what chance has an admittedly sophisticated system such as R-DAT got, when the initial player cost is estimated to be around the £1000 level? The blank tapes will retail at approximately £10 each, and currently the availability of prerecorded material is virtually nil. The present application in the domestic scene would appear to be limited to people using high quality fixed installations employing such machines as the Nakamichi Dragon or Revox B77. Apart from its novelty value, I cannot envisage significant sales for several years. Cheap prerecordings are said to depend on the high-speed direct print-through transfer technique, for which thin-film metal tape is essential. After a decade or so, the volume production of such tape is still a dream. Recordings will have to be done using banks of slave recorders, as in the case of video cassettes, and we all know how long it took for video cassette recordings to reach realistic price levels!

As I see it, R-DAT is a clever concept looking for customers. Obvious applications exist for real recording work – I would even welcome a machine myself – but for normal domestic duty I cannot see the point. Perhaps another three years will see the technology far enough advanced to begin offering us inexpensive cassette packages that incorporate digital, and this may ultimately replace the compact cassette for more discerning markets. Then, the metal-film tape may also be available with a prerecorded catalogue starting, etc.

I recall an analogue precursor to R-DAT, one of which I thought highly at the time and I gave a strongly favourable review to a pair of machines using its technology. Like R-DAT, it used a kind of cassette, was far better than Compact Cassette, and at the time was rated higher than a number of expensive open-reel tape decks. This was the Elcaset, pioneered by Sony and developed to near perfection for sale. However, its good performance was not to prove the ultimate commercial criterion. The public rejected it, and with the benefit of hindsight, correctly so. We simply did not need another cassette standard, and analogue tape recorders were in any case fiddly enough as regards bias equalisation, head alignment and the like. R-DAT is better and more convenient than Elcaset, but the question of a new standard still remains.

That is enough preamble – what about the deck itself? Far from being a clumsy example of new technology, the '1000 is as slick as you could wish for. This is a real working product, easy to operate, smooth, quiet, and comes complete with an infra-red remote control. In many respects it resembles a CD player more than a tape recorder, right down to its numeric keypad for track entry, its display readout in minutes and seconds, and its fast drawer loading. The R-DAT cassette looks minuscule in comparison with this full-size deck, which weighed-in at a substantial 12kg.

Analogue audio signals enter and leave via a set of four gold-plated phono-sockets on the rear panel, the input being selected by a front-panel switch. Analogue is recorded in the normal 16-bit 48kHz format without pre-emphasis, and while the machine also has a capability to record at 44.1kHz CD sampling rate, the 'copy prohibit' system prevents direct dubbing from CD to R-DAT in the digital domain, one of the original aims of the all-digital system of the future. Some clever internal reprogramming could circumvent this if a 'pirate' so desired, but as it stands one has to take the audio outputs from a CD and reconvert to digital in the '1000, a wholly illogical process which inevitably results in some loss of fidelity.

The player has digital in/out terminals (also phono-sockets), facilitating direct dubbing to other R-DAT machines at 48kHz. Accessory decoders such as the Sony 702/703 series can automatically take the 48kHz format, and provide a top-class level of replay decoding if required. The player can also cope with the 32kHz DBS direct broadcast satellite format, automatically recording in this mode via its digital input. (The single terminals carry both audio channels, multiplexed together.)

Taking the front panel (see diagram) the left-hand side carries the loading drawer, on/off switch and the timer/play control. The infra-red sensor window and the standard headphone jack socket are adjacent. The middle section comprises a large fluorescent display and some of the



operational buttons. The display includes tape time in hours, minutes and seconds, to a maximum of eight hours. Programme, overall tape, and remaining times may be obtained. Another set of indicators shows track number up to 88 and the AMS (automatic music search) progress in reaching a track. Legends show whether pre-emphasis is engaged, what sampling rate is in operation (no manual control), copy prohibit, caution (moisture on the head-drum), search, start ID (track identification), and skip ID. The headphone socket has its own level control situated on the right-hand side. The drawer loads smoothly and quietly, with only a second or two needed for tape registration.

A high-performance record-level meter is incorporated, with a 50dB dynamic window and 1dB resolution towards the upper end

of the scale, plus red overmodulation warnings. The display is peak-reading and peaks are held momentarily to aid level setting. It also monitors the replay. Off-tape monitoring is not possible, but instead, on record the analogue input signal is routed to the output via the line amplifiers and the level control. On playback, the digitally recorded signal is decoded and fed to the output terminals. The record line control is, friction-ganged for the two channels for fine control of channel balance.

A brief rundown of the audio specification is also in order. The system is 16-bit with a quoted wide-band frequency response of 2Hz to 22kHz  $\pm 0.5$ dB. The dynamic range is given as 90dB, the signal/noise 92dB, and the 1kHz distortion at full level 0.005%, or  $-86$ dB. Wow and flutter is crystal-controlled to  $\pm 0.01\%$  weighted peak. The rate on the tape is a 2.45m bit/sec, while the head rotates at a near-silent 2000rpm with a shallow 90° wrap (see 'Inside R-DAT', *HFN/RR* May p27). A linear tape speed of 8.15mm/sec compares well with compact cassette at 47.5 mm/sec.

### Technical details

Sony clearly intend setting a high standard from the outset, and have not skimped on either the design or the engineering of this deck. Physically it is well constructed, with high quality printed circuits, good quality components, and a clean layout. No shock isolation is present – possibly the R-DAT mechanism does not need it as the very thin and light tape is virtually immune to vibration. In this respect it is much superior to CD. You really will be able to jog with an R-DAT Walkman – provided you have the muscles to take the weight!

Other details include the heavily copper-plated chassis which reduces electro-magnetic effects, and the acoustic damping of the cover underside, a technique common to other Sony equipment. It does not employ the new 'Gibraltar' resin chassis, however. The transport is well made, comprising a close-toleranced metal unit that Sony describe as '4DD'. Presumably this refers to the direct-drive motors used to activate the mechanisms. The oversized transport mechanism is encompassed in overall dimensions of 6x12x18cm (HWD), so there is scope for future miniaturisation.

Separate power supplies are used for the analogue and digital sections, and there is also evidence of extra care having been taken over sections of the analogue power circuitry. Special 'Muse' and 'Cerafine' audio grade reservoirs are in evidence throughout. The processing section is interesting in that it is true dual-channel, non-time-shared on both record and replay cycles. The record A/D is 16-bit linear, the replay 16-bit being four times oversampled with digital filtering. The older PCM adaptors were often time-shared with no oversampling at all. Running through the chain (see block diagram), the input signal passes through the 50k-ohm record level control to the input op-amp, via selected back-to-back coupling capacitors. Next comes the input anti-alias band-limited filter, a Soshin thick-film model of good quality. Further op-amps lead to the Sony A/D converters, the machine using two 20018 devices. Much of the input and filter circuitry is to Esprit standard; for example, with use of selected film resistors of generous power rating.

The heart of this machine is the large custom LSI, the PCM chip itself. In conjunction with two 64k RAM memories, this processes the data in the digital domain, providing the digital in/out standard, accepting the digital feeds and housekeeping on sample-rate, copy prohibiting, error-correction, and much more. Digital data ready for replay are routed to the decoder section, which uses the Philips 16-bit dual channel chip set, the

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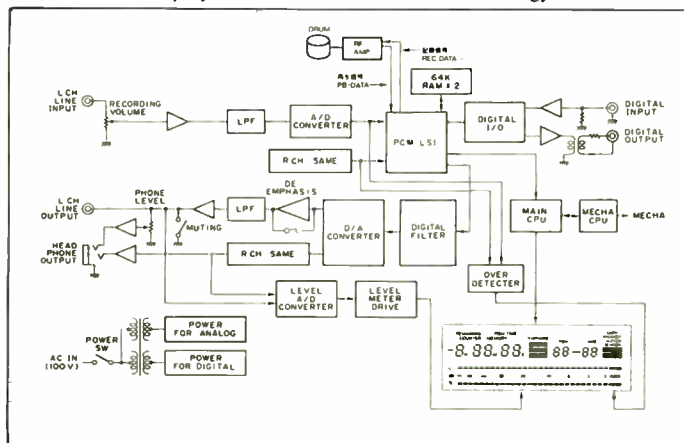
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SAA 7220P oversampler and digital filter, and the TDA 1544 dual DAC. Finally, the de-emphasis and low-rate analogue low-pass filters are reached, these leading to the line output. CPUs (central processor units) include one for digital control and one for the mechanical functions in the deck. The unit has separate headphone amplifiers, and a sophisticated level meter which incorporates another stereo A/D converter and level meter drive section to operate the wide-range fluorescent display. The main reference clock is crystal-controlled at 81.05MHz, divided down to the various control frequencies. The interior is sufficiently well packed to require mounting the power transformer in a deep drawn case on the outside of the back panel. An external heatsink is also present, which runs quite cool, while the overall consumption is quoted at 32 watts. This may be compared with a mains CD player at 8-12W, or a portable one at 2-3W. Cassette Walkmans are down to 0.2 to 0.4W consumption.

Reviewing the build technology, the replay section is comparable to that of a £300-400 CD player, but the record encode technology is somewhat



Block diagram of Sony DTC 1000

below this, and rather closer to that of an early 16-bit linear player. The overall sound quality cannot be better than the sum of these two sections, unless the recording is mastered elsewhere, and the replay diverted to a superior outboard decoder. So much for the logic of the suggestion that R-DAT will sound better than CD! This notion probably revolves around discussion of its marginally higher sampling rate, 48kHz as opposed to 44.1kHz. This results in theoretical upper cutoff frequencies of 24 and 22.05kHz respectively, limited by achievable filters to approximately 22 and 20kHz, a difference representing a very small excursion into an inaudible VHF octave. It is worth remembering that in some cases we have been living with audio frequency responses which are limited in practice to 14 or 15kHz (eg: MPX filtered cassette recorders and tuners); many highly regarded recordings have nothing at these very high frequencies.

## Testing

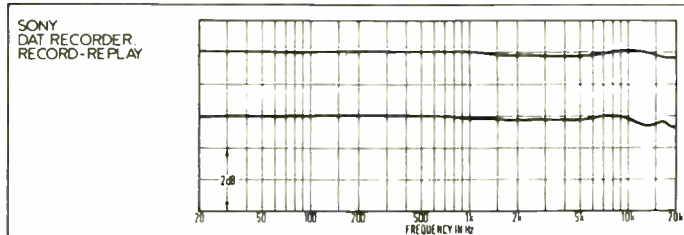
For the listening tests, the recorder was used on a live flute recording, as well as for recording top quality LP and CD material. The replay was compared with the original, using a high-resolution system including the Krell KMA100 II amplifiers and special bi-wired SL600 speakers. For the lab testing, a complete recorder measurement schedule was set up, with particular interest taken in low-level resolution – for example whether sufficient dither was available – as well as the overall frequency response accuracy. Encode linearity effects were also investigated, plus the consequences of over-modulation.

In the Philips 16-bit players the 16-bit chip set has not so far given good results below –80dB, with replay errors of up to 14dB at the 90dB level. Given the inclusion of those same chip sets in this R-DAT player, the interesting point concerned the overall record/replay linearity and whether this problem has been circumvented.

## Lab test results

In normal record/replay mode and with the sampling rate set automatically to 48kHz, with no pre-emphasis, the player delivered an overall frequency response within +0.1, –0.35dB, 20Hz to 20kHz (Graph 1). Of academic interest, the 2Hz and 22kHz points held to a  $\pm 0.5$ dB tolerance, while the –3dB points extended to better than 1Hz at LF and to 22.5kHz at HF. Fed through the 'record monitor' chain, the output was a little flatter, measuring  $\pm 0.15$ dB 20Hz to 20kHz, but the difference was insufficient to account for any significant shift of sound quality. The monitor response is filtered at 24kHz and clearly the monitor path includes the input alias filter. Channel balance was excellent, and held to typically 0.1dB.

In general terms this machine measured like a good CD player. At full level the harmonic distortion was typically –90dB or 0.003%. A figure of –77dB at 20kHz was good for an encoder, but in fact related to an 8kHz spurious tone product on both monitor and replay, being the difference

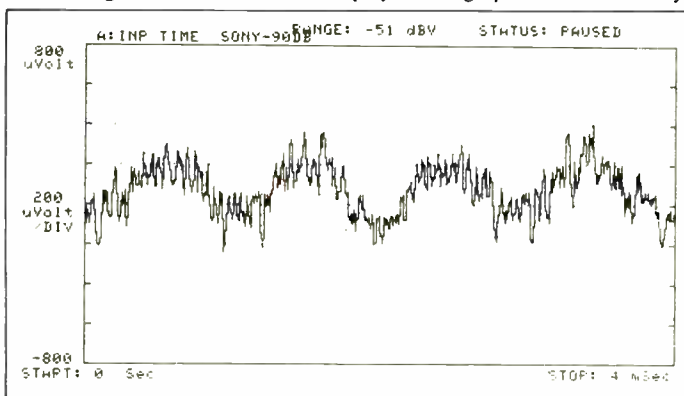


Graph 1. Frequency response

between 48kHz and the second harmonic of 20kHz. At –10dB modulation the distortion measured –82dB, indicating a full-scale linearity close to 15½ bits, which is a notable achievement. Distortion was still only –57dB at –40dB modulation, and the pattern was to improve at lower modulation levels: for example, at –80dB the 16-bit resolution allows in theory for a –16dB level of distortion and noise. The result was actually better than –30dB, a figure set by the noise-floor as read on the spectrum analysis rather than by visible distortion harmonics. Here we see the beneficial action of dither on the record circuit in linearising the low-level performance and providing a clean fade into noise, as with analogue tape. This result is backed by the 16-bit 4-times oversampled replay, which should offer a perfect 16-bit result when on form.

If anything, the linearity results were even better than this, and suggested some additional and beneficial signal processing on the part of the Sony designers. Not only did the replay provide fine correspondence right down to –80dB, but the previous stumbling block at –90dB was held to within 0.07dB, and even a –100dB signal was replayed to an accuracy of –99.2dB. At this point I have no good explanation for this excellent result, but the implication is that low-level quantisation and loss of resolution has been banished by dither and very competent signal processing. For interest's sake, a tone was recorded at –110dB (not an easy thing to do or to measure). It was coded and recovered and found to be pure, ie, the harmonics were not audible in the presence of the understandably high background noise. At full modulation the 19/20kHz 1:1 intermodulation product at 1kHz was –74dB, a very good result for an A/D (the D/A section is typically –85dB). At –10dB the 1M fell to –82dB, which was a fine result.

Although the full-scale linearity suggests 15½ bits, in practice this only amounts to the mildest compression. Normally a resolution reading would be based on the available dynamic range, but should this be on the basis of measured noise or the player's clean signal-handling ability? In respect of the latter, this player behaved more like a 17-bit than a 15½-bit system, and, mysteriously, the previously noted Philips 16-bit chip errors at –90dB and below have been eliminated or side-stepped in some way. Assessed as pure noise, the CCIR ARM result at 1kHz reference (record/replay) was –93dB. Unweighted from 20Hz to 20kHz it measured –91dB. These were very good results, the limit deliberately set by encode dither rather than by a lack of resolution. A –90dB sine wave signal was replayed (Graph 2) and this was as good as the best 16-bit CD player. The graph shows a relatively



Graph 2. Waveform from 1kHz sine wave at –90dB

pure sine wave, with an admixture of random noise. The interchannel phase drift was also checked and the result showed a close time alignment, to within 2° at 20kHz.

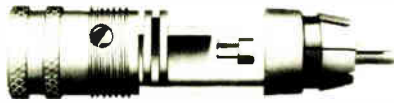
Wow and flutter measured by the DIN peak weighting method was 0.005% (reference residual reading 0.0015%), and the accompanying spectrogram displayed on a high-resolution zoomed  $\pm 12.5$ Hz frequency span at 0.24 analyser bandwidth (Graph 3), shows just how remarkable was the speed stability. The absence of jitter was most welcome, confirming the excellence of the crystal-controlled timing reinserion. No sideband 'shoulders' and almost zero modulation noise was shown by this medium. Just 1Hz away from the centre frequency, –0.033%, the sideband level was down to –78dB with no spurious.



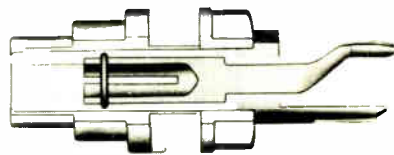
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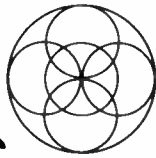
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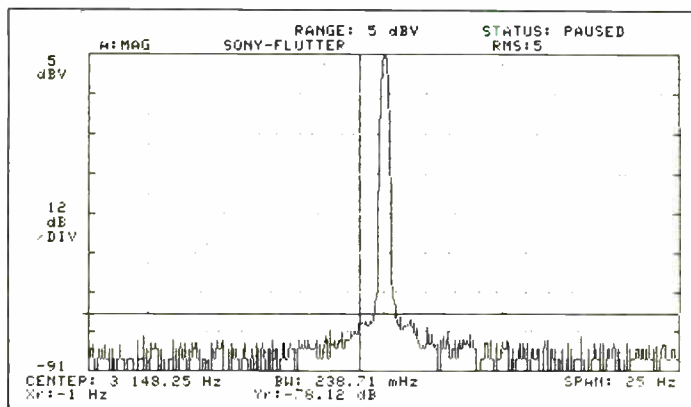
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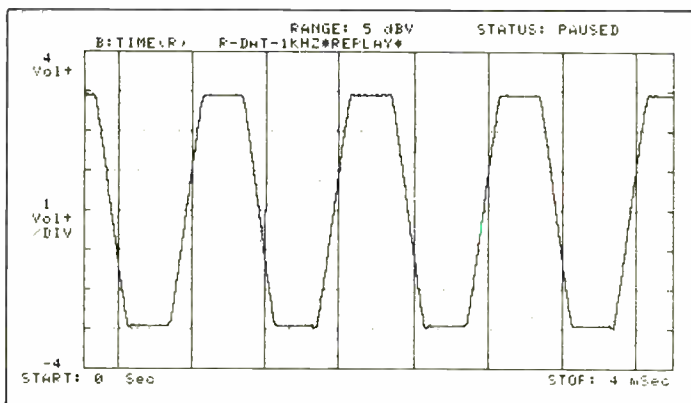
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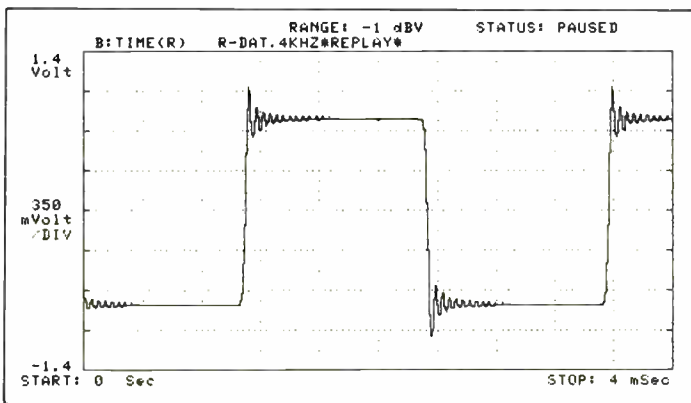




Graph 3. Spectrogram of speed stability, showing negligible wow and flutter effects



Graph 4. Clean, symmetrical analogue clipping avoids digital overload

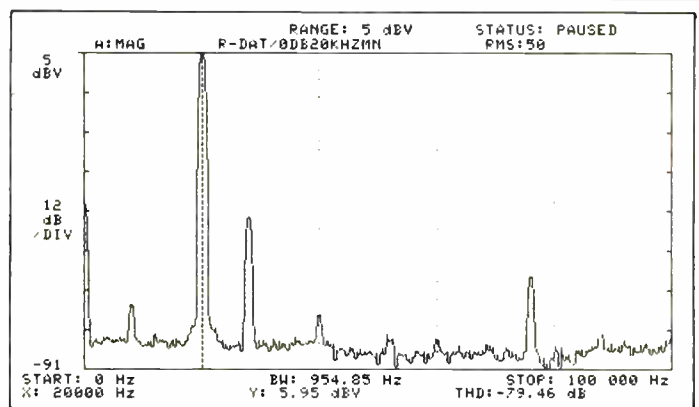


Graph 5. Ringing on 400Hz squarewave, due to input filter

In Graph 4 the replay waveform is shown, with a little over 1dB of clipping as the red overload light was just on. The normally clipped sine wave showed no signs of missing code or spurious pulses. In fact the system clips cleanly in the analogue section, so that digital clipping with its adverse affects is not allowed to occur. Momentary overload of up to +3dB is in fact relatively benign in subjective effect. Graph 5 shows the replay output for a 400Hz squarewave. Mild ringing on the leading edge was a function of the input alias filter, and was comparatively innocuous, with the overshoot measured at just 12%.

Two spectral analyses were taken. In Graph 6 the results of a full-level 20kHz signal are seen. The small spurious signal below the reference is the noted 8kHz alias, while the one above it is an inaudible 24kHz (half the sample rate) and showed a 'clean record' performance. The 1kHz replay performance at -60dB modulation was remarkable for the absence of distortion harmonics, which were below the noise floor, measuring at least 50dB down or 110dB below full modulation!

With an input frequency of known accuracy, the replay was close to exact speed, the measured error being just 0.01%. Via monitor, the total harmonic distortion was better than -95dB, or 0.02%. Conforming to CD player standards, the normal full level output was 2.0V from a moderate 364 ohms source impedance. An input of 300mV was required for full modulation into a 50k-ohm loading, but only 65mV was sufficient to advise an under-modulated IHF 0.5V output. When charted for rejection of spurious, the only significant stray signal was the 48kHz sampling clock at a barely detectable -100dB. The in-band random noise up to 22kHz, at a higher level, could be clearly seen on the graph.



Graph 6. Full modulation at 20kHz, with various spurs

Viewed overall, this was a remarkable test performance for a high quality recording device, never mind one at the 'domestic' end of the market. From a technical viewpoint it was perfectly capable of recording to a professional standard and only needs a good microphone amplifier to complete the recording chain. The 48kHz digital stereo multiplexed output will need a transcoder to format it for CD mastering, but it will not require much adaptation to interface with other professional 48kHz recorders. A terminal on the rear panel allows for synchronised starts.

Track access times were fairly quick - approximately 15 seconds to Track 8 of a recorded LP side - but rather slower than CD. A mild whirring noise was just audible from the machine in a quiet room, but this was less annoying than the sounds produced by some CD players, and if the machine was stacked with other equipment this noise would be less noticeable.

## Sound quality

Professional source material at 48kHz sampling frequency could not be obtained in time for this test, although replay was possible through domestic accessory decoders. For the listening tests we carried out an initial trial using the record monitor circuitry. This produced some impairment if compared with the source, which was no real surprise since the tests showed that considerable circuitry was then in circuit, including some of the filters. We then used the DTC-1000 to record some available material from the best sources. Selected direct-cut recordings were played through the PT TOO/SME V/MC One/Cello chain, while the Cambridge CD1 CD player was chosen for digital material (the more likely source). This latter machine was selected on the basis of its quality and linear phase output characteristic. It was worth avoiding at least one brickwall filter cascade, that of a non-oversampling player with the input filter of the R-DAT.

One can view the performance of such a recorder in one of two ways. It can be considered as a unity-gain line stage, say of a preamplifier with a long memory or delay. The replay fidelity may then be judged in the most critical light - in other words, would one willingly include it in one's own hi-fi chain? Alternatively, one can assess it in the context of recording systems, with an awareness of their defects, and judge its attainment accordingly. The R-DAT performance can be further subdivided, as the machine can be viewed as two devices. There is a replay section very similar to that of a CD player, in fact offering a very similar performance to a £300-400 commercial unit; secondly, there is a more expensive recording section, offering potentially greater sonic imperfection since encoding is harder than decoding. When recording, the signal must be converted to digital and back again for replay, two stages beyond the original. The chance of that replay accurately copying the original is low, which is certainly true in this case.

Taking the strict view, and assessing the deck as a line/storage stage, the '1000 did not do particularly well on audition. In context it is easiest to describe it as another sort of CD player, probably because I was in the middle of listening to a batch of 50 such players when the R-DAT arrived. As a 'copy' CD player the '1000 scored a satisfactory 64%, a level easily beaten by current budget 16-bit Philips players, although I immediately concede that these do not record. The sound was eminently pleasant and musical in the non-fatiguing sense, but was less musical in the involving or 'foot tapping' sense. In absolute terms, the tape replay did not deliver the subjective bass extension and power of the CD, its stability and sharpness of stereo focus, its spaciousness and depth, or its treble purity and clarity. Transients sounded dulled and 'slowed' despite the lack of any perceptible treble rolloff. Dynamic changes in the programme exhibited less contrast, and the ability of such changes to startle and surprise the listener was impaired.

A comparison was set up with the Sony PCM 70les. Here, the classic 'early generation' sound of digital audio was exposed, with the 701 sounding a mite hard in the upper-mid and a touch embrittled in the

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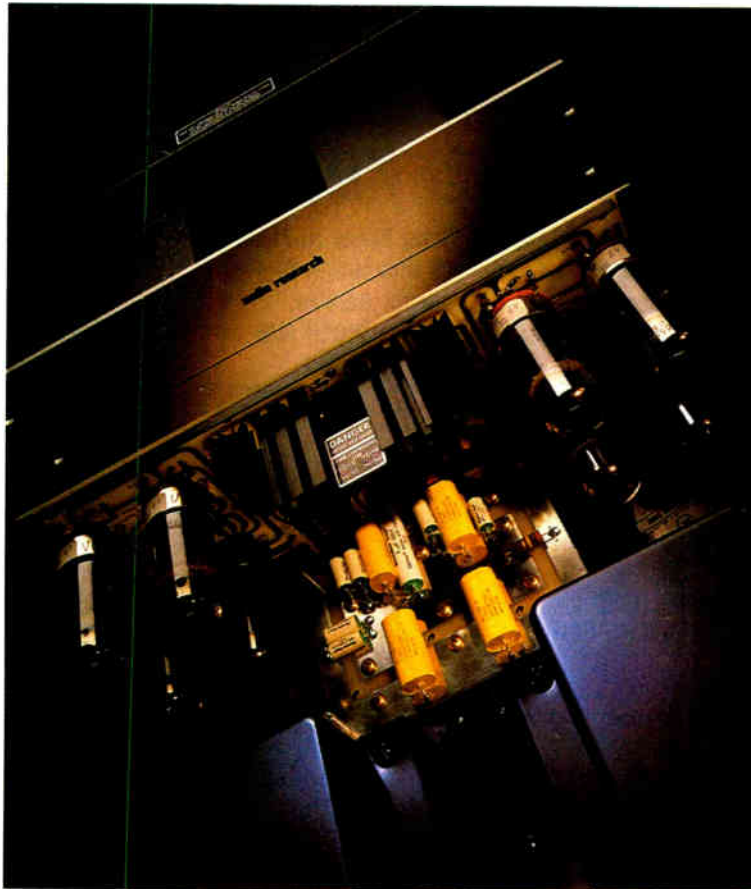
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# TUBES FOR ALL TIME

Audio Research make what may prove to be a final statement in tube power amplification with the breath-taking M300 monoblocks. David Präkel reports



**T**O BEGIN at the beginning. What makes a manufacturer seeking the state-of-the-art in music reproduction in 1987 turn to the thermionic valve? A little surprisingly, Audio Research founder/designer William Z Johnson is one of the *least* partisan of commentators on the spurious but popular *vs.* solid state' debate. Johnson's approach is to use each type of device, in his own words, 'where it performs the best'.

Johnson's Audio Research Corporation aims quite simply to make the best amplifiers your money can buy – though sadly a great deal of money is needed to buy the best. The current generation of ARC amplifiers has followed a fascinating evolution; their state-of-the-art is represented by the SP11 preamplifier and the M300 monobloc power amplifiers. This combination makes a technical and musical advance on the achievements of the SP10 and M100 pre/power units, which were unexpectedly and quickly surpassed in the ARC canon, though both of these earlier models continue in production.

The great attractions of the transistor, to amplifier designers, are its reliability and ability to be used in true low noise applications – its drawbacks, principally the way it performs near the boundaries of the performance 'envelope', tend to be overlooked. In contrast, crudely put, valves offer progressive rather than 'catastrophic', breakdown near the upper limits, and are susceptible to ageing, pair-matching difficulties in

typical push-pull configuration, interference, and inherent hum and hiss.

It has been Johnson's diligence in trying to achieve the ultimate in sound reproduction, while minimising the problems associated with the devices he uses in his designs, that has led to the surprisingly rapid appearance of new products 'replacing' the SP10/M100 at the head of the ARC league. Both pre- and power amplifier stem from the same development path – hybridisation; *ie.* the use of transistor and valve device side by side.

The SP10 took the logical step of moving the inherently noisy power supplies out of the preamplifier box. Though its power supply used some solid-state devices, in the SP10 design, the preamplifier was comprised entirely of valves.

As reviewed in its most early form (by Ken Kessler *HFN/RR* June '86 and by me in *Hi-Fi Answers* in November '86) the SP11 has steadily improved through production and a brief second look is deserved, especially now that passive component changes and the fitting of a radio frequency interference-suppression kit have advanced the unit's already substantial accomplishments – most definitely when the preamp's features are used. The performance shortfall between the unit in the Bypass mode and with the facilities 'in use' led me to describe the difference as 'the magic evaporating'. Differences in this present production sample are less obvious. And, while it is difficult relying on memory, I feel that though the absolute attainment hasn't really changed, the difference between Bypass

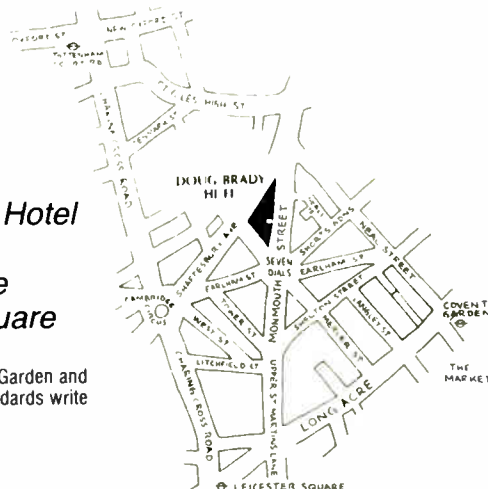
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and Normal is certainly far less striking.

The SP11 improves on the SP10 in the important parameters of noise and resolution (audible as a dramatic improvement in transparency) effectively by replacing the valve input stage with an amplification stage utilising Field Effect Transistors (FETs). The valve complement is now reduced to six ECC88s – the SP10 and power supply, in contrast, used 12 ECC88s, one ECC81 and two 6L6GC valves: 15 in all. Indeed the valves for the SP11 need no longer be selected low-noise types; Audio Research also suggests that a significantly longer time between valve changes can be expected.

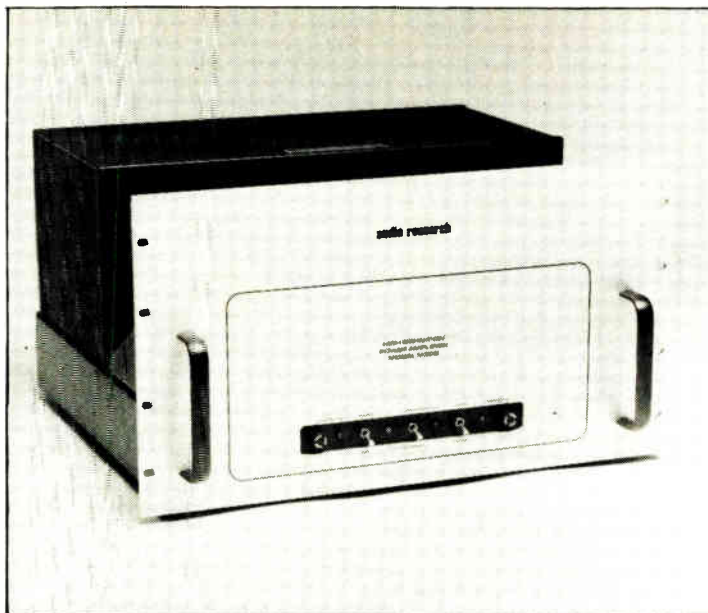
At first glance the SP11 appears to be anything but a straight-line amplification device with its cluster of knobs and switches. Closer inspection shows these controls to be comprehensive, but simple, adjustments for many basic operations. The moving-coil sensitivity input, for example, has front-panel switched loading for a wide range including 47k-ohm (which will of course accept magnetic cartridges, but it is not necessarily included for that purpose). The preamplifier has generous input switching with two Tape, Tuner, CD, Video and a sixth Spare line level input in addition to the phono input. As well as the balance control the stereo Mode switch can provide stereo, mono, reverse, left-to-both or right-to-both-speakers; full tape dubbing in both directions is catered for. The preamp has roughly as many outputs as inputs, and can provide fixed, direct, and inverted outputs (useful for inverting amplifiers to maintain absolute system-phase). Two Main Outs give switchable phase.

The only frequency-shaping control provided on the SP11 is a subsonic filter for the phono input. This provides a two stage roll-off with a gentle 6dB per octave slope below 25Hz, steepening to 12dB per octave at 10Hz. Separate Gain and Level controls are provided which gives the unit a useful flexibility for component matching, and in the words of ARC's Rich Larson 'For best sonic results run the gain at maximum. For lowest noise run the level control at maximum. Or use any combination desired'. The subtlest influence is possible over the outstanding sound stage by careful setting of the gain and level controls, though it is quite easy to replace real transparency for apparent ambience by adding just that little bit of noise.

The hybridisation route taken with the SP11 has been fed directly back into the ARC power amplifier programme. The M300 scores over the M100 in its use of an FET front end. The valve complement of the M300 has been reduced to a bank of eight 6550 output valves. The M100 used only four 6550s but had an additional seven valves making up its front end. The M100s used 6550s in a configuration that reduced ageing and pair match problems – this cross-coupled circuit is retained in the M300s. Additionally the efficiency of the power output banks has been improved by tying the screen grid signal voltage in precise phase with the cathode voltage. The valves are operated as pentodes, retaining the traditional benefits from partial cathode coupling (as all previous ARC designs).

The M300 fascia betrays the circuit simplicity behind it compared with the M100 fascia with its bias trimmers and LED tell-tales. The M300, despite its awesome power and valve output stages, requires no adjustment in use and must be one of the first audiophile products which you can really switch on and forget. The only front panel controls are a Standby/Operate switch and a setting switch for the two low-noise fans to operate at High or Low speed. Line and screen voltage fuses are accessible on the front panel. The back plate carries a gain sensitivity potentiometer (for use in multi-amp systems where amps need sensitivity matching to speaker sub-systems). Loudspeaker connections continue to be via a tap block with screw terminals, the new circuitry now allowing Audio Research to offer a true 1ohm tapping on the M300s (Apogee Scintilla owners take note). Behind the intimidating 10.5in. high face-plate the chassis carries two massive frame transformers making a major contribution to each unit's 110lb weight. The perforated rear section carries the output valves in two banks of four used on their sides, as only in this way can the cooling air from the twin fans beneath be really effective.

One of the nicest features of this new generation of Audio Research equipment is the totally fuss-free manner in which it can be installed and used. Of course, considerations like keeping power supply and preamplifier at a sensible distance still apply, but now noise no longer presents complications, except at the very highest gain settings,



while general perceived hiss and hum levels are now as low as could be expected from a solid state system of comparable sensitivity/power. The current SP11 slipped into the same system as the previous review sample, yet despite identical hookup there were no problems this time with switching thumps from external equipment – no noise, hum or interference complications whatever. Both power amplifiers and preamp have soft start and Auto Muting on power up and are quite 'tame' when switched on. The power amplifiers were simply powered from the mains and turned on. They too gave no problems whatever with noise. The M300s were used with a long preamp lead set (RS twisted data transmission cable) driving Celestion SL600 loudspeakers, with signals from the SP11 fed by a Linn/Koetsu front end and a

Marantz CD94 CD player. There was no transformer hum, while in their Lo position the fans were both efficient in dissipating heat and keeping quiet about it!

The M300s do generate copious quantities of heat, but the Standby position allows the amps to be kept ready to operate without generating the heat they do when running. Because of the 330 watt potential of these amps, they will draw 450 watts while idling and up to a kilowatt on peaks. The Standby switch increases the bias on the output valves and reduces power consumption to 130 watts; the sonic result is a disgusting 'Class C' non-linearity! Thankfully, Audio Research does not make a fetish of any aspect of operation or installation of its products and advises that these amps are not powered on a 24-hour a day basis but that half-an-hour is sufficient warm-up before serious listening. The Standby feature allows you to return to full listening pleasure almost immediately after a necessary interruption.

Similarly, the review SP11 required a few hours' running-in from new, but increased in sweetness and clarity after 20 minutes or so of playing. A first-run warm-up period of 90 minutes is suggested for the M300s.

Auditioning these amplifiers is a revelation. Hearing the M100s for the first time I was impressed by the dramatic effect on the contrasts, textures and dynamics of reproduced music wrought by the colossal energy store of these amps. More so with the M300s. Loudspeakers are at the whim of these monsters. Like an ever-full hopper the amp feeds the loudspeakers as if under the unstoppable force of gravity – whatever the amp determines in terms of dynamics the speakers respond to without exception. This awesome authority is confined to a very select group of amplifiers.

An absurd experiment was tried by hooking up a pair of prototype midi-system speakers (of around £70 pretensions) to the M300s, which still produced tangible imagery, and astonishing dynamics and detail, without appearing to jeopardise the life of the tiny two-way speakers. All of which led to one listener's understandable observation that the M300s would make unconnected banana plugs sound good! The M100 could claim more energy storage 'per output watt' than any other ARC amp: each M100 power supply stores 280 joules (watt seconds). The M300s each offer 350 joules of power supply energy storage (a reader in *HFN/RR* July 1985 calculated the energy storage of a 'typical transistor' stereo amplifier with  $1 \times 10000 \mu\text{F}$  capacitors at 60V as 36 joules – by comparison 500-1000 joule flash systems are used in the average photographic studio; the most powerful hammerhead flash is rated at 200 joules). Magic happens when this muscle can be put to musical ends.

When the ARC amps were first installed, Audio Research importer/distributor Ricardo Franassovici was initially concerned that I would miss the bass extension of my regular two-amp Celestion System 6000 set-up. He needn't have worried. The M300s drove the SL600 six inch mid/bass units down to unexpected frequencies and with masterful command.

The most unlikely sources revealed musical qualities previously hidden. Elton John's *Tumbleweed Connection* could hardly be described as an audiophile recording of overwhelming dynamic range. The Nimbus-produced CD, in particular the track 'Come Down In Time', caused a few raised eyebrows among visiting listeners when reproduced via the SP11/M300 amplifiers. Elton John's voice had a focus and clarity that seemed barely credible given that this is a conventional commercial pop record, some 17 years old. The level shift and stability of the sound with the entry of the orchestral strings was quite unexpected; the exact placing of the oboe in the sound stage in dramatic contrast to the bleary image of

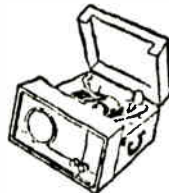
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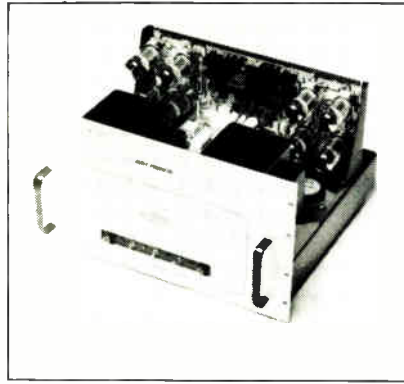
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this instrument produced even with other highly rated products where the instrument seemed to peep nervously from behind the block of strings and guitars. Simply because a 'pop' recording of this vintage is not supposed to have 'image' and perspectives of this quality, *Tumbleweed* became something of a showpiece, and established the M300s as capable of producing a larger sound stage with the passive SL600s than any other amp I've tried or heard them with. It is easy to be 'wowed' by modern recordings replayed on even quite humble equipment; the real trick, however, is to reproduce a wide range of material with real musical fidelity, irrespective of the age or the source.

Bruno Walter's 1961 taping of Mahler's *Symphony 1* is a splendid account, made even more so with its inner details uncovered by the 'hear-through' qualities of this Audio Research combination. Such reproduction can transport you from questions of sound quality, and genuinely suspend the faculties which are offended by the vast majority of supposedly 'good' hi-fi. Walter's interpretation was made as fresh as if hearing it as a live broadcast.

Results from LP were exceptional. A Deutsche Harmonia Mundi disc of Rameau's *Pygmalion* reproduced with a firmness in the low strings and with a fine resolution of the instrument placement and recording acoustic; the articulation of the choir, as with all spoken and sung voices, was precise with a natural and unforced quality. If voices are well treated, so too will be 'music'. The SP11/M300 amps introduced a remarkable clarity into FM radio signals from a Marantz St-7 analogue tuner. Background noises and ambience of continuity suites, equalisation on voices, perspectives in chat shows, vivid effects from radio drama, the use of



different microphones and mixing desk noises were all effortlessly distinguished. The explicit phrasing and enunciation of voices from sources as widely varied as Loudon Wainwright III's *More Love Songs* or Len Cariou and Angela Lansbury, by this amplifier in the original cast recording of Sondheim's *Sweeney Todd* were immaculately handled.

The accuracy and purity are of the highest order – copious listening notes made that apparent. Fractional ensemble lapses and the distinct string bowing qualities even in the quietest passages are vividly portrayed (here I'm thinking of the first chords of the recent Israel Chamber Orchestra account of Schoenberg's *Verklärte Nacht* on Teidec). At the other extreme: in the thickest Mahlerian climaxes, or

the densest textures of The Who's *Quadrophenia*, the ARC product retains its openness – never was there a sense of the equipment intruding.

It is no exaggeration to say that these amplifiers re-educate the ear to the potential of reproduced music and that it readily established a new standard. The Audio Research Corporation SP11/M300 amplification delivers a consummate clarity and resolution. Though valve amplifiers they require no adjustment in use and no fanatical matching of valves when replacement time comes. The amplifier is a higher efficiency design than before with greater linearity and considerably lowered noise. Offering 'valve' sonics with transistor convenience, the Audio Research amps are certainly a way of having your cake and eating it, and on this combination of outstanding sound and convenience of operation and maintenance Johnson is to be congratulated. The only trouble is the entry price to the cake shop! The M300s cost £4998 apiece; the SP11, £5150. ●

## HANDS ON DAT

49 treble, the latter perceptibly 'forward' and 'zingy'. Nevertheless, the old 701 was rated a little higher overall than the '1000. Looking at the results, the PCM 701 was judged better and more stably focused, with a tighter and more dynamic sound, preserving a little more of the musical interest of the original. An interesting and informative contrast with the new medium!

From a practical viewpoint, we then rated the deck in the context of other domestic systems, namely a quality cassette deck or the less commonly encountered open-reel tape machines. I will now put my neck on the block and state my judgement of good compact cassette replay on the scale of values applied here, namely 35%. A good semi-professional high-speed open-reel machine without processing, and with no allowance for a barely satisfactory 65dB dynamic range/signal-to-noise ratio, might reach 55%, but tape hiss would still remain a major flaw. The above rating of 64% should be seen in this context, and judged as a recording system the DTC-1000ES was pretty good. A subsidiary test involved a critical recording of solo piano at a deliberately low level. In fact the level meters did not move above the -50dB mark, but I can report that apart from a slight hiss the replay quality was clean and devoid of quantisation harmonics or spuriae. The signal could be faded into the noise floor without perceptible changes of timbre or fidelity.

## Conclusion

Sony have showed great competence and engineering skill in the design and build of this the first R-DAT recorder. The controls worked well, tape handling was excellent and track access satisfactorily quick. Even in this respect, it put compact cassette in the shade. As a recording system it was also clearly very good, and approached the standard set by professional systems. But given the claimed digital promise of audio perfection, it was disappointing to find that its audible losses were identifiable and quantifiable. To put it bluntly, a keen CD machine owner would not use it to make copies of CDs, since the originals sound better. However, it is likely that with some evolution of the system its *replay* performance could potentially equal that of CD, although the quality loss over the record/replay cycle will remain. The predicted likely starting price in the UK is around £1000 for the basic machine; ours was £800 in Tokyo's Akihabara. But the present replay potential is no greater than that offered by a current £350 CD machine, and to obtain a better sound an accredited decoder such as the Sony DAS-703es becomes a necessary addition.

The 'copy prohibit' demanded by the record industry to prevent digital CD transfer is a major drawback, in that it prevents the domestic user from realising its full potential in a digitally interfaced hi-fi system. Sales are likely to be price-limited for a year or two which in its turn will offer no inducement to the record companies to make programme available. At the same time, CD machines are becoming more and more competitively priced, and more widely disseminated. The new development of CD Video and CD Interactive can only add to the appeal of this medium,

working to R-DAT's disadvantage. Even the tape is unlikely to become much cheaper than £10 for some time to come – a poor match for a good quality C90 at a typical £1.50 or so.

The lab results have shown that a high performance is achievable, even to an apparent 17-bit resolution at lower signal levels. Quantisation effects, one of the major objections to digital systems, have been eliminated by this sensibly designed machine. We have yet to see oversampling at the encoding stage and perhaps this will ultimately bridge the present performance gap. Indeed, the pressure on development that results from the consumer application of R-DAT may well help to speed progress in the encoding area.

So we are left with the final conclusion, namely that this R-DAT machine is a successful example of rather limited application. The most interested parties are likely to be amateur and semi-professional recordists. It could provide useful backup in studios and perform good service for jingles and advertisements in the field of local radio. One can see a stack of machines synchronised to a common time-code and control panel (or a single remote control) and operating as a low-cost multitrack digital recorder. However, as regards high volume domestic sales I cannot see that R-DAT, elegant as it is, satisfies any real market need. ●

## TEST RESULTS

Record replay response	+0.1, -0.35dB, 20Hz to 20kHz -3dB at <1Hz, 22.5kHz
Monitor Response	0.15dB, 20Hz to 20kHz (see graph)
Channel balance	20Hz      1kHz      20kHz 0.1dB    0.1dB    0.15dB
Distortion at 0dB	-92dB    -89dB    -77dB*
at -10dB	-82dB    —
at -40dB	-57dB    —
at -80dB	-30dB    —
Level accuracy/linearity	0, -10, -20, -40, -60, -80, -9, -100dB 0, -10, -20, -40, -60, -80.03, -90, 07, -99.2dB (see spectrograms)
Intermodulation 19/20kHz	0dB, -74dB; -10dB, -82dB (see spectrogram)
Record/replay noise	(CCIR ARM 1kHz ref) -93dB A-wtd -93dB, un-wtd -91dB
Phase difference between channels	1kHz 0°; 20kHz 2°
Wow and flutter	0.005% (Sigma 2) DIN pk wtd (see spectrogram)
Speed accuracy	0.01%
Monitor line thd 1kHz	>95dB down (0.002%)
Outdoor level/impedance	2.0v, 0.364k-ohm
Sensitivity (for full modulation)	300mV/50k-ohms; for 0.5V out 65mV input.
Spuriae to 100kHz	-100dB
Wind time	27 seconds for 1 hour tape
Track access time (tr.8)	typically 15 seconds
* spurious signal at 8kHz, monitor and replay	

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# RUGGED ROKSAN

Heavily built and cradled in a massive frame, the Roksan Darius has some truly radical design features. Martin Colloms puts them to the test

**L**OUDSPEAKERS represent a perennial source of interest. There might be a degree of uniformity, even conformity, about some classes of equipment, but speakers remain surprisingly diverse in design. The fundamentals are well established, but the opportunity remains for innovation, and many audio designers seem prepared to try their hand. This month's group includes the costly Roksan Darius, which may be regarded as a model incorporating new ideas; the London-based company is of course already well known for its fine Xerxes turntable.

Some kind of split is evident in the approach of UK designers to their various products. There are those who work to classic standards, building up the BBC inheritance, a legacy for defining the criteria for tonal balance, response smoothness, homogeneity and coloration. Interestingly, while these are powerful arbiters of loudspeaker sound quality, they do not tell the whole story. Stereo focus, stage width, depth, clarity and transparency, are all harder to define technically and we rely on listening experience here. In addition, the concept of dynamics – the ability of a speaker to hold one's attention, to startle or excite as the music demands, and to expose contrasts of level even in the more subtle sections of the musical score – is all-important, but this aspect is still harder to quantify technically.

Add to the question of dynamics the more descriptive aspects of sound quality (treble 'grain' or 'fizz', exaggeration of sibilance, and in the bass, such aspects as a lack of articulation or transient 'speed'), which can be identified by listeners in subjective tests, and the assessment problem increases.

The other group of designers seem to disregard the primary classic factors, indeed a number of them do not even use acoustic measurement as an aid when evolving their designs. Instead, they rely on aural judgement alone and exhibit an almost obsessive interest in the more fashionable aspects such as dynamics and 'speed'. One of the problems which occurs when assessing this type of design concerns the psychoacoustic effects of a biased tonal balance. Anyone who has played with a 1/3-octave or similar parametric response equaliser will be familiar with the extraordinary range of aural effects which may be induced. For example, upper-treble boost adds air and sparkle, but on some recordings such treble lift may also result in an increase in grain, fizz and fatigue. Lower-treble lift adds presence, immediacy and speed; transient edges are exaggerated, appearing livelier and more exciting, but at the expense of a natural tonality, excessive 'metallic' or 'brittle' effects, and a loss of stereo perspectives. Upper-mid lift makes most bass sound flatter and tighter, projects and focuses vocals, improves intelligibility, but results in mid hardness, shouty or clanky effects, and a serious loss of inner balance as well as timbral accuracy.

So, is a 'forward' speaker faster and more dynamic because it really is so, or is it because it is simply 'mid forward' in frequency response terms? In review it is possible to use a low-coloration high quality equaliser such as the Cello Palette to correct tonal imperfections, to balance a given test

loudspeaker and thus weigh separately the contributions of inner dynamics and the psychoacoustic effects of a non-uniform response.

## Testing

The Roksan Darius and the three smaller speakers also tested in this issue were used as recommended – essentially in free space on rigid open stands with low-resonance properties. The primary sources comprised KMA 100 II, Cello Audio Suite, Cambridge CD1, PT TOO-SME V-MC One, backed by a Cambridge Audio A75/Philips CD360. References included the SL600, Spondor SP1, Quad ESL63 and DM100.

Anechoic testing was not possible for this batch, and instead semi-anechoic and room measurements were undertaken, using a computing spectrum analyser. A critical and often misunderstood measurement is the room-averaged response (or RAR). This is a picture of the sound intensity in the listening space presented in 1/3-octave frequency bands from 25Hz to 25kHz. With typical loudspeakers it is possible to generate a response extending from 25Hz to 8kHz  $\pm 2$  or 2.5dB, and it is one which relates closely to the listening experience. Above 8kHz this measurement should not read flat; rather, a smoothly falling output is required, one which decays without lumps or sharp corners, and with significant output to at least 16kHz. This shape is a result of the room response at HF: comprising greater room absorption and the falling off-axis power of most tweeters of finite size. The Roksan Darius is unusual and is dealt with here on a feature basis, with the remaining models forming a separate group of three. (See 'Three Steps to Heaven', p71)

## Description

Of Iranian (Persian) origins, the Roksan company principals have named their loudspeaker after a famous Persian king (548-486BC) who was ultimately defeated by the Greeks at Marathon. In their descriptive material, Roksan quote a substantial passage in which King Darius asserts that: 'What is right, that is my desire'. Whether the use of this passage is merely pretentious, or relates to the hoped-for character of the loudspeaker, is not clear. But by implication the Darius should be strong yet balanced, neutral in the sense of 'right' and with all aspects of its performance held under thoughtful and powerful control.

Setting such matters aside for the moment, here we have a well-engineered and finished loudspeaker, costing £1525/pair in the review sample's rosewood veneer. This price does include the external passive crossover priced at £135, but an active crossover is under development, and with this option the passive one may be deleted. The frame/stand is also included in the asking price, and the lowest costing would be for a black-ash finish which comes in at £1255 inclusive of crossover. Walnut and teak both cost an extra £65 with white-ash around £150 extra. Oak and mahogany are also available to order. These prices place the Darius in company with such models as the Naim SBL, Quad ESL63, and SD Acoustics three-way SD1, and it is approaching Linn Isobarik territory. It is also in competition with such panel speakers as the MG1c, Apogee

Caliper and Martin Logan CLS.

The 'Barik makes for an interesting comparison. Both speakers are built to provide a 'dynamic' performance founded on great structural integrity, although the Darius offers a much smaller box containing only one KEF B200 (modified) 220mm frame bass/midrange unit and one 25mm SEAS plastic-dome tweeter against the Isobarik's plethora of drive-units. Indeed, the Darius driver panel mirrors the two-way line-up of the much less expensive Linn Sara, and even lacks the second B200 driver included inside that design.

But the Darius is certainly an unusual looking loudspeaker when fitted into its matching large rectangular frame. Then it stands 98cm high on floor spikes, with base dimensions of 33cm wide by 51cm deep. The front of the stand tapers as it rises to 43cm deep at the top, the front vertical of the upper deck section intersecting the line of the rectangular speaker enclosure.

The speaker alone measures 27cm wide by 49cm high, by 41cm deep, a rather squat proportion. The frame is of matt-black enamelled rectangular steel tubing, in the form of a double box-frame. The speaker enclosure fits within the upper box perimeter, spaced from it by eight torqued bolts which align with the strong internal corners of the enclosures. The appearance is more professional/industrial than domestic. A slim black grille is fitted, and is covered with a stretched polyester weave. The veneer finish is excellent, as it should be for the price! Electrical connection is made via two sets of 4mm sockets, one for the upper treble section and the other for the lower bass section. They may only be used bi-wired, owing to the remote crossover.

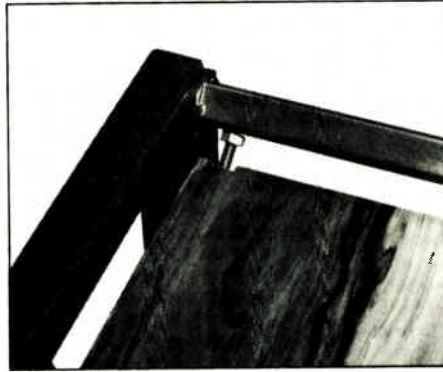
## Technical details

As already mentioned, the bass and midrange are handled by a 220cm steel-frame Bextrene coned unit, with a 25mm magnet pole. The centre dust-cap has been removed and replaced with a concave circle of thin white plastic, embossed 'Sweetheart', the name of a plastics container company. This is hand-cut and is a Roksan addition to stiffen the centre area of the B200 cone. To aid central absorption and damp the inverted cap, a thick felt disc is cemented over it. Similar felt is also used as an annulus fitted around the tweeter dome to reduce diffraction. The system is sealed-box loaded in the bass, with the interior (which has an enclosed volume of approximately 26 litres) being damped by a filling of long-hair animal wool.

A number of features distinguish this model from the norm, perhaps the most interesting being the so-called 'frequency locked tweeter'. Several designers have discussed the effects of cabinet vibration and overall movement in the context of the tweeter and its reference plane. Clearly, if the structure on which the tweeter is mounted vibrates, then spurious information will be added to the tweeter's output. For example, a midrange vibration at 1kHz will be added to a tweeter output at say, 5kHz via the spurious components of frequency modulation, producing extra tones which blur the prime signal. In theory this 'doppler' modulation could be audible, although proving this might be more difficult, as would be the supporting measurement due to the very low amplitude of the midrange vibration.

Roksan decided early on that it *was* an audible problem, and have taken steps to solve it in the Darius. Their solution involves mounting the tweeter, a conventional 25mm soft polyamide dome, centrally on a floating sub-baffle, an MDF square of 12.5cm sides, hanging on four diagonally located coiled steel springs. These are undamped and the modes of vibration complex, with the fundamental set at around 2Hz. Four long woodscrews provide the support points for the springs, and the angle of the tweeter may be adjusted by moving the decoupling bushes along the shafts of the fixings. Via this turntable-like suspension, cabinet vibrations above a few Hertz cannot arrive at the tweeter, though it will still be somewhat susceptible to air-borne energy direct from the mid driver. The decoupled tweeter is free to set its own internal reference radiation plane, and it hangs asymmetrically in its picture-frame recess, with the opportunity for acoustic reflection/resonance around it before the cabinet edges are reached. The tweeter frame walls are straight-sided, and the recess is arranged with its rear panel providing further reinforcement for the enclosure and driver baffle.

The question of radiation 'point' is also addressed in the enclosure design, which in addition to featuring very substantial 25mm thick walls of high-density fibreboard, also incorporates three cross-braces set at energy dissipation points described by Roksan as 'modes'. In vibration or acoustic parlance, this is normally referred to a point of minimum excitation. One of these three transverse braces is of aluminium, and is also bolted under tension to the magnet plate of the bass unit, reinforcing its frame and reducing vibration. This drive-unit is also firmly fixed into



position with socket-head bolts on a bed of silicone rubber adhesive. In case of servicing, this could make life rather awkward.

The enclosure possesses very strong and rigid corners due to its great wall thickness and internal reinforcement. These are the corners which are located by the fixing bolts of the space frame, the latter thus locating at the points of minimum vibration. This improves coloration and resonance behaviour, while the overall reference plane of the enclosure itself is established and supported. Certainly the result is a rigid, stable construction which exhibits negligible vibration or rocking during operation. For the crossover, a simple 12dB/octave second-order network has been used with air-

core inductors and simple 5 $\mu$ F electrolytic reversible capacitors. To achieve the required value, two inductors are used in series for the bass section, although this is not the ideal way to achieve low series resistance. Small 6.8ohm damping resistors help shape the upper corner of the midrange. Response equalisation as such has not been incorporated; instead, the network conforms quite closely to a textbook form at approximately 3.5kHz, with incorrect assumptions of an 8ohm resistive termination and a flat axial response from the drive units. In fact, such networks are generally subjected to heavy modification in practical speaker systems.

However, attention to detail is shown in acknowledgement of the interaction of connecting wire and crossover, and indeed of crossover and enclosure. Roksan's solution is to hard-wire the drive-units to the rear terminals and remotely place the crossover in a separate case, preferably near the power amplifier and joined to it by short link-wires. Bi-wired connections then run from the crossover to the speaker enclosures. By this means, the speakers may be readily updated for active operation, the relevant power amplifiers connecting direct to the speakers without further modification.

## Installation

On delivery, it is expected that a trained dealer will install the enclosure in the frame and organise the crossover interconnections. Roksan have learnt how to obtain the best from this system and defined two possible locations in my room. One was a broadside arrangement with the speakers overspaced on the side wall and close to it, angled in by some 60° for the axes to cross some way in front of the listener. The listener angle was some 45° off-axis to the front of the speakers. An alternative, using the room's long dimension, involved bringing the speakers about one third of the way down the room and placing them close to the side walls, again angling the enclosures so that the listener was placed at 45° off-axis to the speaker median.

Our tests confirmed the worth of these locations and showed that Roksan are using the compensation afforded by an off-axis placement to help equalise the strongly forward mid-treble response of the system. Such a scheme does have the advantage of throwing more mid and treble energy into the reverberant sound. This was quite beneficial in my well damped room, but could be inappropriate in a livelier location with expanses of plain plaster walls.

In such an environment, the Darius is likely to sound rather hard and bright, and will need very careful handling. By adopting a '45°' listening axis, Roksan have exploited the narrower aspect of the speaker front thus subtended to the listener, with consequent improvement in stereo focus. In addition, the axial upper-treble peak of the tweeter is also minimised at off-axis angles greater than 35°.

## Sound quality

Once fully set up, mechanically and electrically, the Darius was checked in our standard stereo position. The results were dire, and would have resulted in instant failure on a sequenced audition by a listening panel. On axis it was overpoweringly mid-forward and bright – almost to a point where it sounded like a three-way with the bass driver switched off. The speakers were then pulled forward to 2m from the rear wall and brought out almost to touch the side walls, to reinforce the lower-mid energy. Finally, the two loudspeakers were both rotated until the listener was strongly off-axis, the exact angle being 'tuned' for the optimum mid/treble balance.

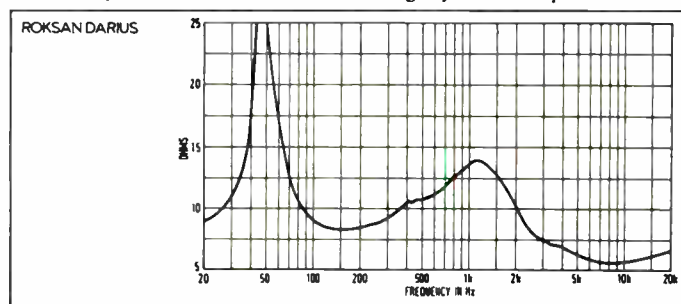
This wrought a transformation and brought the sound quality nearer to believability. However, it remained very dry, upper-mid forward and bright throughout the subsequent sessions. Incidentally, these balance characteristics reinforce good representation of bass harmonics; but the mid, while of fine clarity, suffered from both an upper-band exaggeration and some coloration of a 'Bextrene' cone type. The latter took the form of a sharp nasality which aided the transient effect of rim-shot percussion and the like, but which hardened the upper range of soprano vocals, classical

or rock. The treble was held in quite good proportion with the midrange and was considered to be of exceptional quality. The usual fizzy axial sound of this tweeter model was suppressed, while the mounting system appeared to endow it with a remarkable degree of clarity, stability and purity.

There was no question that the speaker was preferred on analogue sources. A first try with Miles Davis's *TuTu* on CD produced a shattering effect – far too forward and brittle. Richer balanced classical material survived on CD, but I preferred a diet of old LPs. This finding reinforced the view that this speaker has a specific character and bias which takes it out of the mainstream of neutrally balanced, monitor-derived designs. It would require careful auditioning prior to purchase, preferably in the home, and with one's own records and sources.

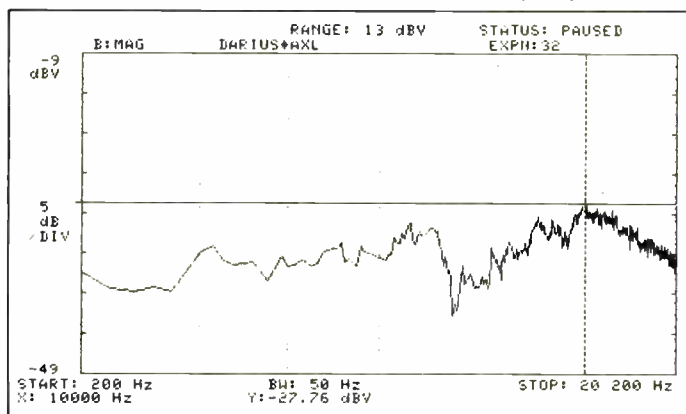
### Test results

With this design the midrange is unequalised and runs almost 'flat out', and in consequence the Darius returned an above-average sensitivity of 89dB/W, 1m. From the impedance curve (Graph 1) it can be seen that the main frequency range averaged 10ohms, falling to 6ohms in the 5-15kHz region; as a result, this speaker would be regarded as an easy amplifier load. The system resonance was at 49Hz, slightly underdamped.

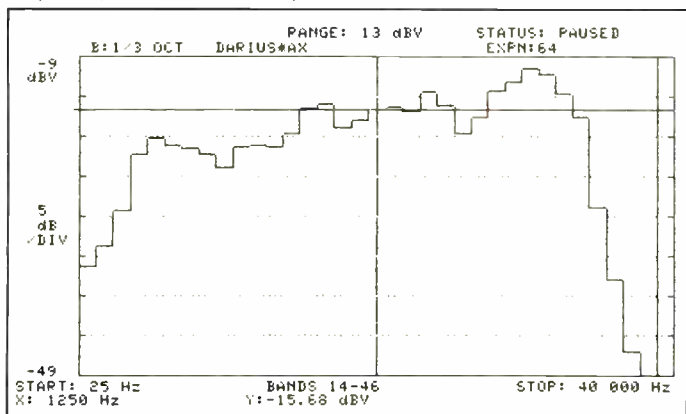


Graph 1: modulus of impedance

The initial response measurements were taken on-axis for the sake of consistency, remembering that the recommended listening axis is at 45°. With aural evidence of some treble peakiness, a high-resolution response was taken (Graph 2). This shows some crossover problems at 3.3kHz, and a rising uneven treble reaching a maximum at 10kHz. The midrange as a whole shows a rising trend with frequency. Graph 3 shows the axial response in close to anechoic conditions. From a relatively level region spanning 60Hz to 300Hz, the response rises quickly, the mean trend reaching a maximum of +10dB by 10kHz – a severe frequency imbalance.



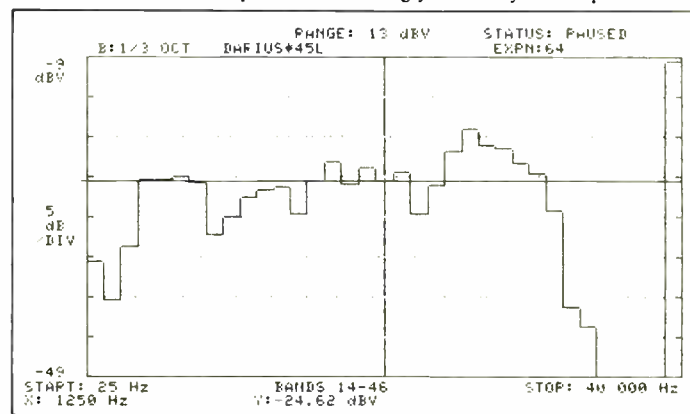
Graph 2: high resolution on-axis response



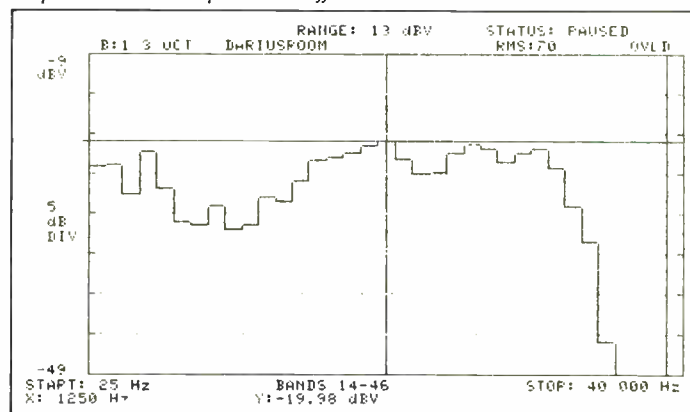
Graph 3: third-octave response on-axis in near-anechoic conditions

(At 15° above axis the output was rather lumpy, with serious loss in the crossover region.) At 30° off-axis some improvement in balance is seen, but the phasing and diffraction effects were responsible for noted peaks in the treble. By 45° off-axis (Graph 4) the mid balance is more tolerable, with the overall rise halved; but the treble is still prominent, with excess energy in the 4-5kHz region.

The room-averaged response (Graph 5) gave a clearer view. Off-axis and room integrated, the treble was clearly still emphasised, but the rising midrange looked somewhat improved. In the low bass the output was 2-3dB deficient relative to the midrange – accounting for the dry but extended LF. But the output was still strongly flawed by lack of power in



Graph 4: third-octave response at 30° off-axis



Graph 5: room-averaged third-octave response

the upper bass to low midrange, this being quite characteristic of the system as a whole. An octave averaged room response revealed the same broad spectral imbalances and an energy maximum in the 1kHz region.

The speaker's power handling was good to 100W, above which the bass region began to show some compressive distortion. But given the forward nature of the system and its high sensitivity, the resulting levels were almost shatteringly loud.

### Conclusion

This was an awkward product to assess. By rights, its poor frequency response, mid coloration and peaky treble should rule it out completely. It has little regard for accepted standards of neutrality or tonal balance, and offered a sound which in this context some will hate, while others will, if not love, at least tolerate for the sake of its virtues. It proved to be strongly programme- and source-dependent, a sure signature of an unbalanced speaker design, and it certainly favoured moving-coil vinyl to CD and the other alternatives. In fact, for myself, even with vinyl some records remained unplayable.

Physically substantial and visually dominant, the Darius speakers required very careful placement and angling to achieve a reasonable tonal balance. Once this is done, and ignoring the final balance problems, the Darius rewards the listener with a strong, forceful and clear sound, with high resolution of detail, very good transients, and a pure transparent treble. Sharp stereo focus and good sound-stage scale are further attributes, and it could well be that if properly set up, this model is one which some listeners could not be without. It is also well engineered and built for the price, but the remote crossover was rather primitive and made use of unexceptional parts, rescued by the bi-wiring advantage. The active version is likely to perform better, and may even be better balanced.

I cannot recommend the Darius, but nevertheless found it to be an interesting creation, successfully making some good technical points and certainly worthy of more than passing consideration. ●

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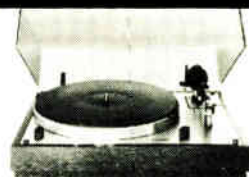
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THE GREAT TRADITION ►

# IN THE GREAT TRADITION

Paul Crook reviews three models from Thorens' current turntable range, the budget TD280, the TD320, and the classic TD166

**T**HORENS have been one of the most famous names in the hi-fi business for many years now and have produced such classics as the still sought after TD-124, the super value TD-150 and the tweaker's delight TD-160. They are renowned for having defined the basic formula for high-quality turntables employing a spring-suspended subchassis and belt-drive motor system. Indeed, the TD-150 is often quoted as the progenitor of the British high-end turntables that had such a profound influence on systems, and system sound, over the past decade. Thorens have survived various major assaults on their market position over the years including the Direct Drive drive from Japan, Linnism, and the anti-suspension movement. They now face their greatest challenge yet, in the guise of the almost overwhelming flood of budget CD players. This month we look at what they have in their armoury with which to survive the onslaught of the digital era.

On offer are three integrated models: the TC-280 at £160, the TD-166MkII at £180, and the TD-320 at £280. All three come equipped with in-house tonearms, remote mains transformers, captive tonearm leads and automatic cueing. The TD-166MkII is clearly different in styling from the two new models, being a revival of the popular budget version of the outstanding TD-160, the TD-166. All the supplied tonearms have interchangeable detachable headshells, a convenience for those who like to use several different cartridges.

The turntables were subjected to the usual range of laboratory tests with all measurements being conducted at the same calibrated levels for each player using the same test cartridge – listening tests were also carried out using the same cartridge for each unit. On this occasion an Ortofon MC30 Super was employed (see KK's report *HFN/RR* March) for its excellent neutrality and ability to resolve stereo depth, something I feel is vitally important in assessing turntable sub-tonearm performance. This might seem like overkill to those who would like one to use a cartridge more realistically priced with regard to the turntable, but I feel that it is important to energise a component with as much musical information as possible in order to determine accurately what it will do in the very best circumstances. This then allows one to predict more successfully what the effects of the turntable will be on the other elements of the system, so that a more informed view can be taken of system matching.

## Technical details

**TD-280** 'Very Audi/VW' as befits a West German turntable, being finished in austere black with a touch of silver/white trim, a tinted lid completing the dark overall effect. It is, surprisingly for Thorens, a solid plinth design, employing 14mm chipboard with a vinyl veneer and an unfinished hardboard base which sports four rubber feet, with internal rubber springs to provide environmental isolation. The bronze main bearing is reinforced with a plywood block under the plinth and exhibited relatively little play when coupled with the well finished 7mm spindle. The inner hub is plastic, as is the motor pulley, but the main platter is a

substantial Mazak casting topped by a typical flat rubber mat. The drive is provided by a 24-pole synchronous motor.

The TP28ES tone arm is a very simple straight tube design with an offset headshell that can be removed by loosening its collar screw and detaching the cartridge leads from the cartridge or the fixed pins protruding from the end of the tube. The aluminium bearing housing is quite strong and the lateral bearings relatively free of play. The vertical bearing is not so good, however, and exhibits noticeable movement when only lightly stressed. Anti-skating is provided by a dial spring system. The counterweight is slightly decoupled and moves on a thread to adjust down force.

Turntable and arm are operated by means of controls located at the front of the unit: a switch to select speed (33 $\frac{1}{3}$  or 45rpm), a push button to start the motor, and a switch to cue the arm. The arm is raised automatically at the end of the record by means of an opto-electronic sensor. This also prevents the arm being lowered when the platter is stationary. All in all it is a convenient device to operate.

**TD-166 MkII** Very similar in styling to its famous ancestor, the TD-150, although it now sports Thorens' contemporary black and silver. The basic belt-drive, suspended-subchassis formula is also adhered to, with some care being taken. The plinth is vinyl covered MDF, reinforced with softwood corners, supporting a fairly substantial top-plate, and is both well made and well finished. The subchassis is a single sheet of alloy bent at the periphery for increased rigidity, and suspended on three conical springs – which still come fitted with foam inserts after almost a decade of enthusiasts removing them as their first step in turntable tweaking! The main bearing is again attached by means of a circlip and is of good quality exhibiting very little play. The inner hub is made from the same plastic as that on the TD-280 but the main platter is a much more weighty affair at 2.7kg. The same rubber mat is supplied. The TD-166 MkII motor is a 16-pole synchronous low voltage model powered from the same remote transformer as the other models reviewed here, and speed change is achieved by means of a belt shift lever and two-diameter pulley.

The arm fitted as standard is the TP-11 MkIII, which has the same tube, headshell and counterweight as the TP-28ES (fitted to the TD-280) but suffers from a less substantial bearing housing. Both the vertical and horizontal bearings exhibit some degree of play. In addition to the disappointing bearings the arm includes a highly resonant system for applying anti-skating involving two notched rods and a weight suspended on a thread. Unfortunately arm height is not adjustable and one must use shims between the cartridge and headshell, as on the cheaper TD-280.

The turntable controls forego the Start button of the other two models but employs the same 'clunky' levers for speed change and arm cueing. Auto-stop is also included.

**TD-320** As one would expect from the top model in Thorens' range of integrated turntables, this is a solidly built device, clearly designed to give good acoustical and vibration feedback rejection. The plinth is a solid



block of MDF some 40mm thick, mounted on a pressed steel plate which houses the electronic speed control circuitry for the 16-pole synchronous motor, the whole assembly standing on small, hard rubber feet. The subchassis is another block of 40mm MDF suspended on three leaf springs which are height adjustable from above by removing black clip-on plastic covers revealing screwdriver slotted bolts. The main bearing is a large 9mm diameter spindle in a bronze housing, supporting a Mazak inner hub which is well toleranced and exhibited no play and low friction. The total platter mass is a considerable 3.1kg: this time topped with a heavy, solid rubber mat rather than the more flimsy ribbed examples found on the other two models. Power for the motor is again provided by a remote transformer unit, but on the TD-320 this supplies an electronically synthesised two-phase power supply.

The arm this time is the TP-16 MkIV, which seems to be a more sophisticated version of the TP-II, incorporating a clamped counterweight with separate stylus force adjustment and a magnetic anti-skating system. It is a pity that Thorens did not follow through their low resonance approach fully on this arm, by employing a spring for stylus force adjustment, when they have gone to the trouble of clamping the counterweight and avoiding a spring, or lever and pulley system, for anti-skating. Happily the arm bearings are virtually play-free although the bearing housings do not seem to be any more substantial than with the TP-II. The arm tube and headshell are identical to those on the other two arms.

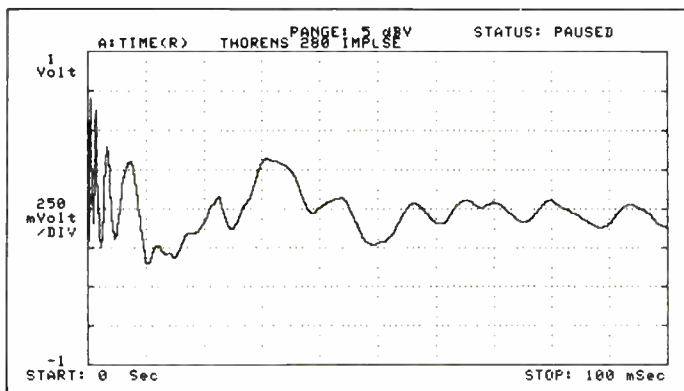
The TD-320 is, to my taste at least, a very much smarter package than the cheaper models; the one I was supplied with being finished in an attractive Redwood veneer. It is equipped with the same controls as its budget brother and shares the same styling strip, looking modern and elegant by comparison with the TD-166. The lid is mounted with spring loaded hinges on this model only, and was very much more convenient in use although made of the same rather 'clangy' plastic.

### Lab report

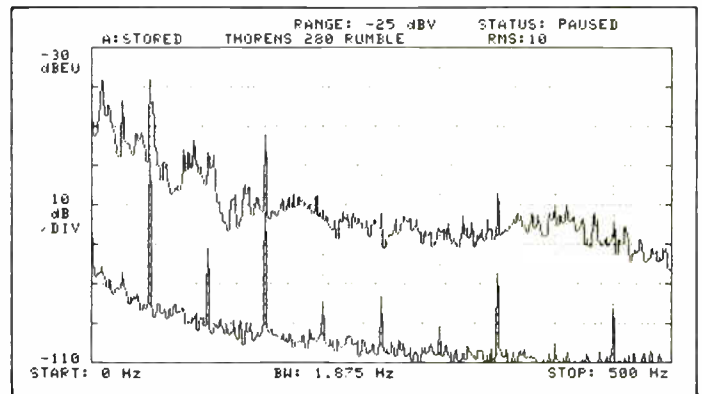
**TD-280** Quite good results for wow and flutter, producing an excellent DIN figure of 0.03% for the combined measurement. The speed was spot on at 33.3rpm and did not drift significantly during the lab measurement programme. The only failing, as far as the motor is concerned, was the still acceptable 0.3% slowing under load and the lengthy 6.5secs start up. Rumble was commendably low. The spectrogram shows some evidence of motor breakthrough at 50 and 150Hz but this is not serious. Both the acoustic and vibration breakthrough spectrograms indicate that careful siting of the '280 is required. There is clearly a considerable amount of lid-borne breakthrough on both responses in the 200-500Hz bands and this was only marginally controlled by closing the lid (these tests were carried out with the lid open representing a 'worst use' situation). There was also some plinth boom in the 0-150Hz bands on the vibration response indicating that the sprung feet are not sufficiently effective to allow one to place the turntable close to the speakers.

The arm resonance result was pretty good for an arm of this price. The main mode is at around 500Hz indicating a fairly stiff tube and, apart from an energetic mode at 3kHz, is well controlled above this, the linear resonance response being particularly clean. The friction results for the arm are also pretty good, although these will have been aided by the slight play, particularly in the vertical bearing. The bias worked well and was set to a sensible level. Downforce calibration was rather vague and produced a consistently light result, suggesting that one should always check with a good set of stylus scales before using a newly fitted cartridge.

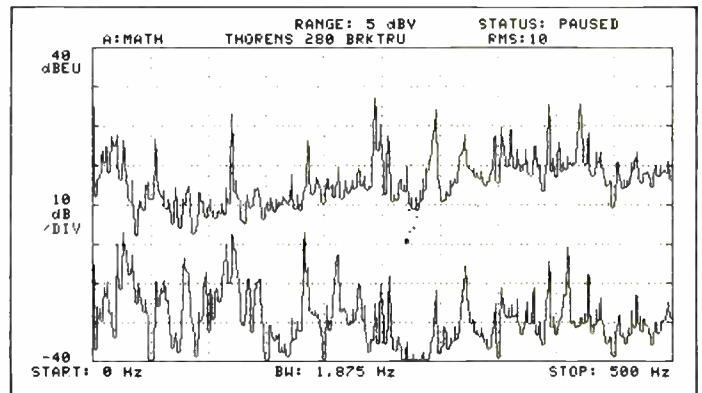
The disc impulse was not too well controlled but did appear to settle fairly quickly. Tapping the platter directly produced no significant ringing. The ribbing under the mat is likely to have contributed to some of the lack of control of the impulse and seems a ridiculous economy when a solid mat would undoubtedly have produced a better result.



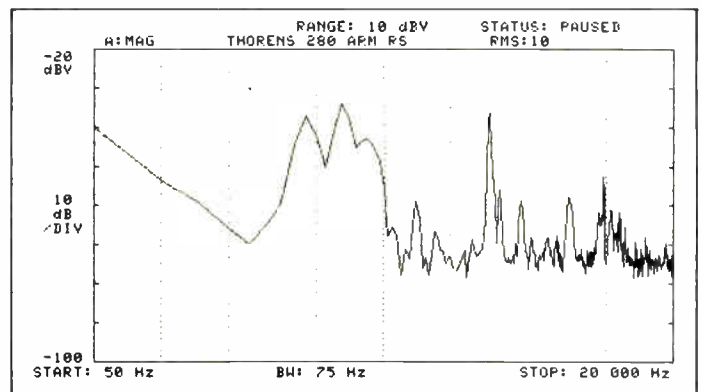
Thorens TD166II: Disc impulse response, vertical scale 250mV/div, over 100mS



Thorens TD280: Rumble spectrum (upper trace total, lower trace electrical only)



Thorens TD280: Isolation (upper trace acoustic, lower trace vibration)



Thorens TD280: Tonearm resonances, 50-20kHz

Tap testing the turntable produced some interesting results. Apart from a slight boom the plinth was commendably dead. The lid, however, was very 'clangy' and boomed, albeit in a deadened manner. There was also some counterweight boom in the arm and the anti-skating spring rang clearly. This is unfortunate as the arm was otherwise relatively non-resonant, apart from a muted 'tinkle' in the pillar.

**TD-166 MkII** This matched the 280 figure for figure on wow and flutter and must therefore be judged a success. It coped a little better with the load, scoring a reasonable -0.25% and coming up to speed in a moderate 5secs. Interestingly, the '166 required a little warming up to settle again at spot-on speed. Rumble was again low, producing the same average figure as the 280, and the spectrogram is very similar - although the '166 is arguably a little cleaner between 25-150Hz and the motor harmonics slightly lower, as one would expect on a suspended subchassis design. Both the acoustic and vibration breakthrough results are very much better on the '166. The lid is much less damaging in feedback terms thanks to the isolating effect of the sprung subchassis, but there is evidence of some plinth resonance on the acoustic trace. The vibration result is also not as clean as one might expect between 25-250Hz, above which the suspension clearly works well: this perhaps due to the foam inserts. Unfortunately there was not time to investigate the removal of the foam but previous experience suggests that this would have produced a cleaner result in these bands at the expense of a little spring ringing.

The results for the TP-II MkIII are clearly better than those for the TP-28ES. The resonance spectrogram revealed a main mode at 650Hz, with some fairly well controlled modes at 3kHz (possibly a headshell mode,



given its similarity on all three arms; though not shown here, the '166 and '320 spectra were comparable) and 7kHz. Interestingly the TP-23 is a little cleaner at the extreme top of the 20kHz chosen bandwidth, the TP-11 being smoother between 8-14kHz. Friction was very low, but again play was a contributing factor, suggesting that Thorens need to exercise some care in adjusting their cheaper arm bearings. The anti-skating system worked well and stylus force calibration was commendably accurate.

The disc impulse result for the '166 was again an improvement over the TD-280/TP-28 combination showing more control and better damping of the impulse. This result can be explained by the higher mass of the TD-166 MkII platter, and the lower energy storage to be expected from a well executed suspended subchassis turntable.

Tapping the TD-166 proved the effectiveness of the suspension as there was very little boom from the plinth and almost none of the 'clang' from the all too resonant lid was audible. This good result for the turntable should be balanced against the disappointingly obvious 'dong' to be heard from the anti-skating rods. The arm tube also sounded a little 'colder' and more brittle, perhaps due to the looser bearings.

**TD-320** Surprisingly, was less good on wow and flutter than its cheaper brothers although the result obtained is still very good. In contrast to the TD-166 this model needed to slow a little to an accurate 33.3rpm but then remained constant, slowing an acceptable 0.25% under load. The more substantial bearing of the TD-320 produced a slight improvement in rumble giving an average of -77dB. The spectrogram is a little cleaner than that for the other models and shows fairly good suppression of hum components. The breakthrough spectrogram is clearly the best result of the three, the acoustical result being particularly good. Some vibration still

gets through and is pretty energetic, although much better suppressed than with the TD-166. I suspect this is a lateral mode of the suspension as the subchassis is a little whippy whereas its vertical motion is well controlled.

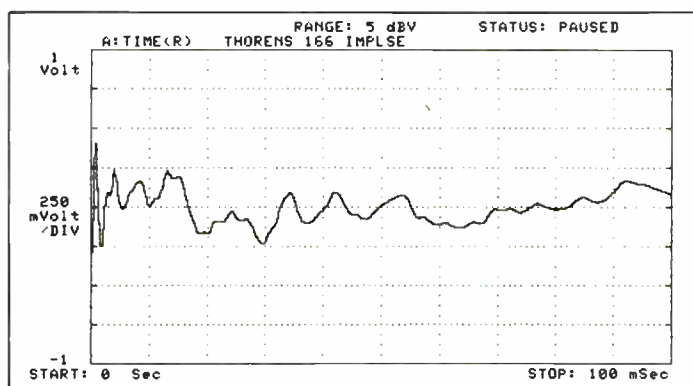
The arm resonance results indicated a similar main mode to the TP-II but with a more complex structure, perhaps due to the more sophisticated counterweight assembly. The 3kHz spike was there again but a little cleaner this time. Indeed the resonances to be found on the TP-16 were generally cleaner than those on the substantially similar TP-II.

Tighter bearings on the TP-16 did not compromise the friction performance, indicating a well adjusted arm. The frictionless magnetic anti-skating system worked well but was set a little high. The only serious failing of this arm was the poor stylus force adjustment which was both poorly calibrated and difficult to use, as the markings on the dial were coarse and did not correspond to the force applied.

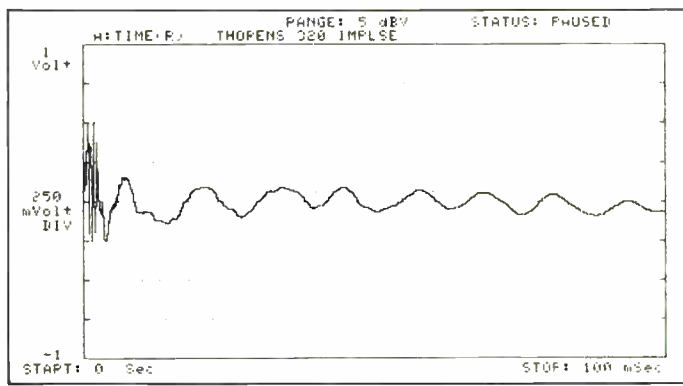
The disc impulse result was the best of the three, the TD-320 benefitting from a much better mat and more substantial platter with its metal inner hub. The initial impulse is well damped and the after-ringing clearly decays away relatively quickly. The tap test was largely satisfactory, the substantial plinth sounding quick and dead. There was some slight boom from the metal base and a mild 'dong' from the suspension but the noisy lid was almost totally suppressed. The arm acquitted itself well too and was noticeably less 'steely' than the TP-II.

### Sound Quality

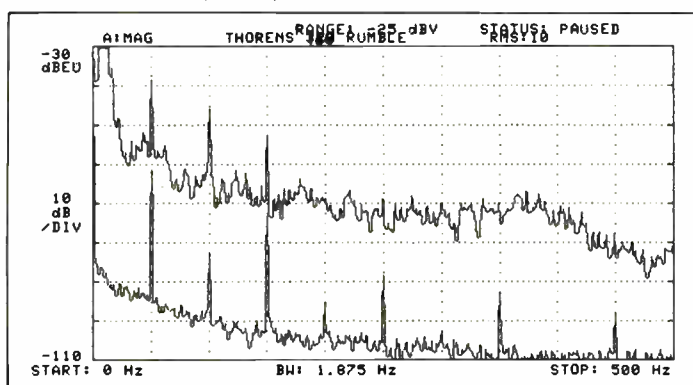
**TD-280** Gave a quite pleasant laid-back sound with fairly good tonal rendition. It seemed to perform fairly consistently on a wide range of program without undue emphasis or exaggeration. It was also fairly dynamic and lively, if lacking the last drop of 'bounce' and rhythm. There



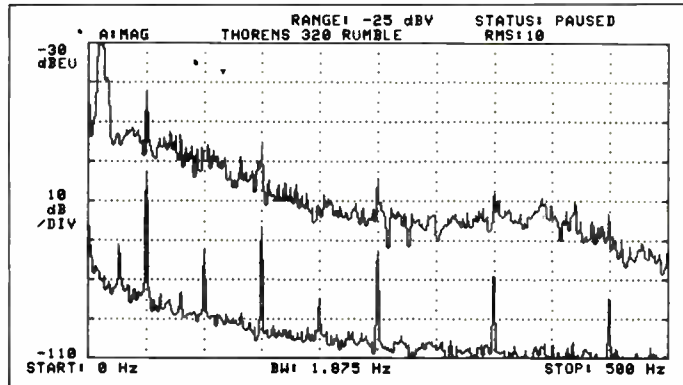
Thorens TD280: Disc impulse response, vertical scale 250mV/div, over 100mS



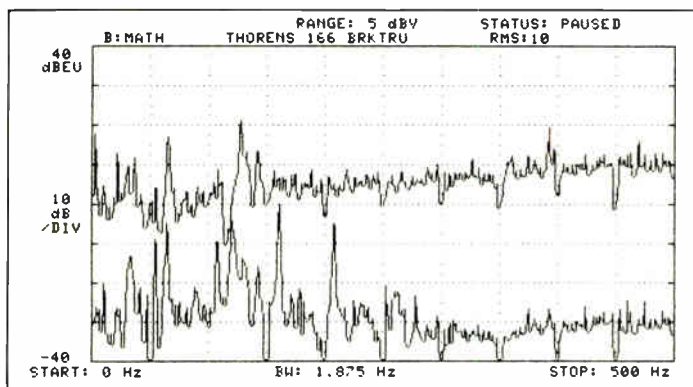
Thorens TD320: Disc impulse response, vertical scale 250mV/div, over 100mS



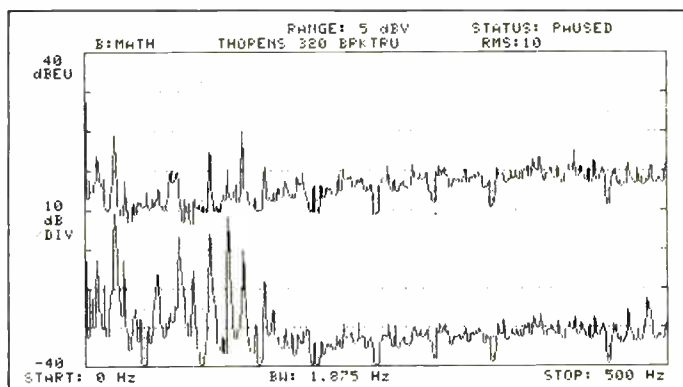
Thorens TD166II: Rumble spectrum (upper trace total, lower trace electrical only)



Thorens TD320: Rumble spectrum (upper trace total, lower trace electrical only)



Thorens TD166II: Isolation (upper trace acoustic, lower trace vibration)



Thorens TD320: Isolation (upper trace acoustic, lower trace vibration)

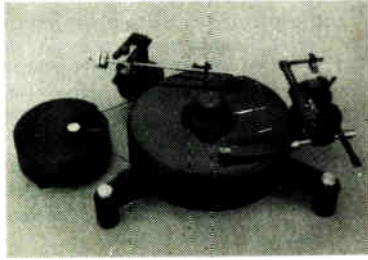


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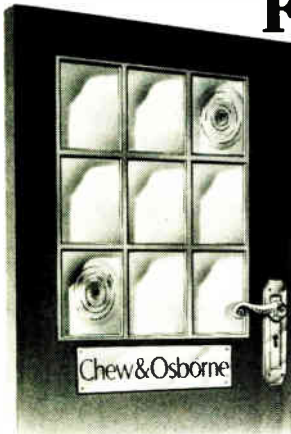
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Also on offer is the **Voyd/Audio Innovations/Snell** system, and in this context the word 'system' is appropriate: a range of components designed to do specific tasks over a range of price and specification. The benefits of consistent design principles have been emphasised for some years but their practical advantages are still widely ignored. Ex-demonstration units from the Meridian and Musical Fidelity ranges, analogue equipment from **Alphason**, **Pink Triangle** and **SME** and a selection of quality used cartridges are our last stand against seasonal distractions.

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was no evidence of pitch instability.

The stereo image was fairly well presented with quite good depth and focus. There was, however, a lack of air and sparkle, the silent spaces between instruments being subdued in effect. The image was also noticeably narrowed with fairly strong central focus.

The bass was a trifle boomy but not in a leaden, oppressive way; it was rather rubbery on drums and a bit 'fruity' on cello. The mid-range was commendably neutral, if a little bland, and voice was well reproduced. The treble was a mite muted and distant but easy to listen to. There was a touch of lispiness on sibilants and a mild 'ticky' quality to fine edges.

Overall the sound was pretty good at this price level, offering a neutral tonal rendition and a pleasant overall effect. It was a little lacking in 'life' in the treble and did not have the 'slam' in the bass of some of its more 'punchy' rivals. It did, however, perform consistently allowing one to focus more attention on the programme rather than the turntable or arm.

**TD-166 MkII** Clearly a bigger more powerful performer in the bass than its solid-plinth brother. This was at first impressive and overall the '166 provided more music and more information. However, as listening progressed certain aspects of its performance began to become annoying, although not sufficiently to cause one to prefer the '280.

The '166 was more extended and powerful in the bottom octaves giving more scale and grandeur to the overall sound. It was also dynamic and had plenty of 'slam'. It sounded quicker and had more 'go' than the '280. The mid was less laid back and relaxed in tonal terms, however, and could sound rather 'shouty' at times. Tonal colours were more 'contrasty' than the '280 but somehow less integrated in their presentation. The treble was noticeably brighter and though not sounding aggressive was a little ragged at times. Percussion also had a tendency to be a little 'clangy'.

The soundstage was quite well proportioned, with a better sense of space and openness. This was somewhat marred by a lack of focus which limited the depth and added a slight sense of vagueness to the positioning of instruments. In an odd way the '166 was quite detailed but a little muddled and not quite 'tied down'.

Overall, the amount of information retrieved for the price was good, and the TD-166 MkII is still a capable performer. It did, however, sound a little vague and did not grab your attention. It was fairly dynamic but seemed to lack the cohesiveness necessary to be really likeable and self-effacing.

**TD-320** This immediately set itself apart from the two other models in overall sound quality. One was immediately aware of getting much more

from the grooves, and the Ortofon MC30 Super began to sound special again. A large, spacious soundstage appeared, sounding – curiously – louder and more powerful than before.

The stereo performance of the '320 must be one of its strongest features. It lays out a well founded stage with precision and depth, and then locates instruments within that stage in a stable focused manner. It does not quite match the holographic ability of the £500 models but is definitely a strong performer in its class in this respect.

The bass was strong and firm and stopped and started well. There was a slight growl to the upper bass, but it was inherently clear and uncoloured elsewhere. Good mid-tonality was also evident, with massed voices sounding clear and unforced. Treble information was well presented if slightly untidy at times, lacking the subtlety of the best models at this price level, but only just.

Overall the sound was dynamic, detailed, spacious and enjoyable, giving a clear insight into the recording and musical performance. One was never distracted by the player but rather impressed by the scale and power of the music when the recording had it to give. The stereo, with its fine depth and focus, immediately set it apart as a significant turntable at any price and one clearly in a different league from its budget brothers.

### Conclusion

Thorens are evidently still fighting hard in the turntable forum and have produced three commendable models here. They are all well engineered and well finished and would do any system proud. In absolute terms the '320 is probably the winner as it represents one of the best turntables available in its price territory, and consequently offers very good value for money. I suspect that the arm is the weaker of the two elements but it is nonetheless a more than capable partner for this turntable. The substitution of the super-value Rega RB300 would make for a combination of truly outstanding merit surpassable only by units costing nearly double.

The '166 is a very fine turntable for the price and should undoubtedly be on the shortlist for units up to £200. It could, however, be improved, I feel, by a change of mat and some attention to the suspension. Indeed, with some tweaking it would be possible to take it to a level where the '320 would be the only logical next step; there is no doubt whatever that this capable motor unit could do justice to a better arm.

The TD-280 is a fine budget performer and offers an excellent 'fit and forget' alternative to the '166. If you want a straightforward turntable that is easy to use and sounds good, the '280 is a good solution. It may not offer the ultimate in refinement but is enjoyable to listen to and good value. ●

TEST RESULTS	THORENS TD280	THORENS TD166 II	THORENS TD320
<b>Motor section</b>			
Type	solid plinth, belt drive	subchassis, belt drive	subchassis, belt-drive
Platter mass/damping	1.2kg/good	2.7kg/quite good	3.1kg/good
Finish engineering	very good/good	very good/good	excellent/very good
Type of mains lead/connecting leads	remote psu/phonos, earth	remote psu/phonos, earth	remote psu/phonos, earth
Speed options	33½, 45rpm	33½, 45rpm	33½, 45rpm
Wow and flutter (DIN peak wtd sigma/2)	0-03%	0-03%	0-05%
Wow and flutter (LIN peak wtd 0-2-6Hz/6-300Hz)	0-09%/0-05%	0-099%/0-05%	0-13%/0-07%
Absolute speed error	0%	0%	0%
Speed drift, 1 hour/load variation	0%/0-3%	+0-1%/ -0-25%	-0-1%/ -0-25%
Start up time to audible stabilisation	6-5secs	5-0secs	5-5secs
Rumble: DIN B wtd L/R av. (see spectrum)	-74dB/-77dB/-76dB	-73dB/-79dB/-76dB	-74dB/-79dB/-77dB
<b>Arm section</b>			
Approximate effective mass inc screws, excl cartridge	12-5g	12-5g	12-5g
Type of headshell	detachable	detachable	detachable
Headshell mass	7-0g	7-0g	7-0g
Geometrical accuracy	very good	very good	very good
Adjustments provided	height, overhang, lateral, azimuth	height, overhang, lateral, azimuth	height, overhang, lateral, azimuth
Finish and engineering	good/average	good/average	good/good
Ease of assembly/setting up	very good/very good	very good/very good	very good/very good
Ease of use	very good	very good	very good
Friction: typical lateral/vertical	30mg/20mg	10mg/10mg	10mg/15mg
Bias compensation (set to 1.5g elliptical)	dial, spring	thread and weight	magnetic
Bias force: rim/centre	170mg/120mg	120mg/150mg	170mg/200mg
Downforce calibration error: 1g/2g	-0-15g/-0-25g	0g/0-025mg	-0-25g/-0-30g
Cue drift	very slight	negligible	negligible
Cue rate: ascent (8mm)/descent	1-5secs/3-0secs	1-0secs/2-0secs	1-5secs/3-5secs
Arm resonances	see text	see text	see text
Subjective sound quality	see text	see text	see text
Damping method	counterweight decoupling	counterweight decoupling	none
<b>System as a whole</b>			
Size (WDH)/clearance for lid rear	44x35.5x13.5cm/6cm	43x36x15cm/8.5cm	44x35x17cm/6.5cm
Ease of use	very good	very good	very good
Typical acoustic breakthrough and resonances	average	above average	very good
Subjective sound quality of complete system	above average	above average	very good
Hum level/acoustic feedback	good/average	good/above average	very good/very good
Vibration sensitivity/shock resistance	average/quite good	good/good	very good/fairly good
Typical price inc VAT	£160	£180	£280

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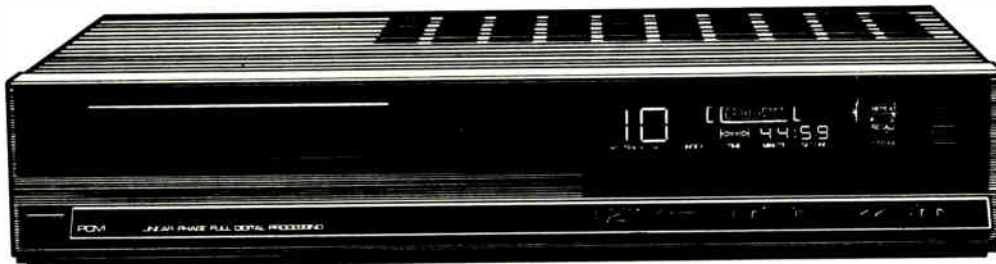
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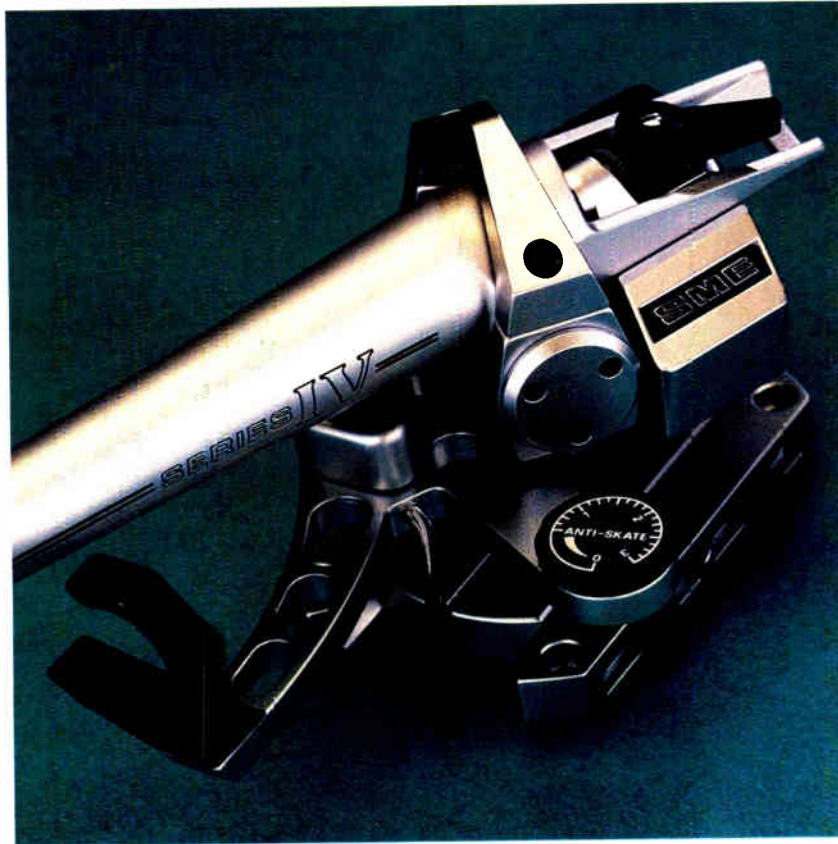
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# YOU GOT THE SILVER

SME has followed up the satin-black Series V tonearm with the new silver-finished IV; as Paul Miller reports, there is more to it than a change of colour



**W**HEN the SME Series V tonearm was finally launched last year, the jump in postscript from III to V was taken, quite literally, as an indication of the huge differences between the old and new products. However, having established the market and a reverent – some would say cult – following for the 'V' during its short existence, SME have shrewdly decided to plug the gap with a 'budget' magnesium tonearm. For the tidy sum of £675 much of the technology and aesthetics of the Series V may be acquired in the form of this latest tonearm, predictably dubbed the Series IV.

At a glance the most distinctive feature of the 'IV' must be the luxurious satin chrome finish, applied to all the major surfaces except for the armtube (which is satin silver enamelled to match the chromed parts) and the armrest. Further inspection reveals the absence of the 'V's tracking force dial and adjustable fluid damper, although the latter will be available later in the year as an optional extra. So, by all accounts, even though the price of the Series IV is certainly not cheap, it represents a considerable saving on the £1180 or so required for ownership of the Series V. Indeed, the basic labour costs for both arms are virtually equal; only the concerted inspection, tighter tolerancing and expensive black chrome finish separates the two models – but it appears this is more than enough to sweep aside the law of diminishing returns and thoroughly justify the additional £500.

Many of the one-piece pressure die-cast tonearms that just fail to meet the Series V criteria are employed in the construction of the Series IV analogues. The use of a magnesium alloy for the main beam results in a structure that is potentially 25% more rigid than a conventional aluminium cast, whilst the continuity of material between the headshell and counterweight track ensures an uninterrupted path for the transfer of unwanted energy. Furthermore, the tapered but essentially large diameter of the beam reduces the bending and torsional resonances inherent in such a structure. As if this were not enough, the tube is also damped internally by a silicon-rubber compound surmounted by a fibrous layer – this

'three-ply' arrangement deals with residual or non-linear vibrations.

The remainder of the structure, and especially the massive yoke surrounding the bearing assembly, is equally rigid where a high mass zinc-alloy has been employed for the precision casts. A stainless-steel cross shaft supports the main beam with 10mm high-load ballraces situated in the sides of the yoke to control the vertical arm movement. Larger, 17mm ballraces are carried inside the heat-treated steel pillar that forms the support for the entire arm; these races are widely spaced and pre-loaded to reduce any trace of slack during lateral movement. Both yoke and pillar are coupled by a stainless-steel vertical shaft that rotates within the 17mm bearings and provides passage for the internal wiring, itself terminated with the same damped 240° swivelling output socket currently fitted to the Series V. These radial shielded bearings ensure that the arm is only free to move in two of the possible six degrees of freedom, where in an ideal world the arm is supposed to act as a 'pure mass' – an ideal impossible to attain in practice, due to the relationship between the cartridge compliance and effective mass of the arm, but one most closely approached by the 'V.

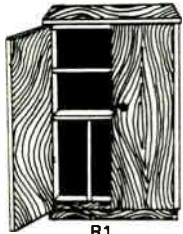
The bearings in both the Series IV and Series V tonearms are assembled in laminar-flow cabinets so that a dust-free environment is maintained. However, those in the 'V' are built to ABEC 7 tolerances whilst ABEC 3 suffices for the cheaper Series IV. As a point of interest, ABEC 9 is the highest rating although such tolerances are more likely to be arrived at by chance than by design! In general, the vast majority of 'super arms' adopt the ABEC 3 specification so this is certainly not a failing of the 'IV, rather an indication of the extreme care and unique accuracy that accounts for much of the higher price of the Series V.

In common with the 'V, the Series IV incorporates the same tungsten alloy counterweight, which is optimally proportioned and slung under the main beam to lower the overall centre of gravity. With the lever clamp released the angled weight is free to move along the mitre-ways on a

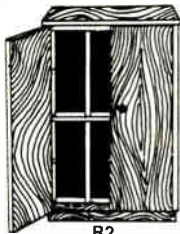
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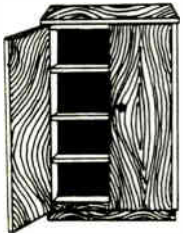
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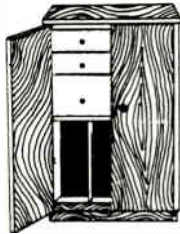
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damped two-point suspension by simple manipulation of the attendant thumbwheel. Once the longitudinal balance of the arm/cartridge has been established, the appropriate tracking weight is 'dialed up' via the thumbwheel – each quarter turn representing an increase or decrease of 0.125g, that is,  $\pm 0.5g$  per full turn. SME have not calibrated this wheel in the numerical sense but have included the legends 'A, B, C, D', separated with small arrows to indicate the application of tracking force.

This arrangement represents a significant departure from the dynamically-balanced system opted for in the Series V; the use of a resonance-controlled spring in the 'V' offers several theoretical benefits, not least the fact that the tracking 'weight' is applied as a *force* as opposed to a *mass* in the case of the Series IV. The upshot of all this lies in the low frequency trackability of the tonearm, which should show marked differences between the Series IV and V – especially when record warps are thrown into the equation! A

dynamically-balanced arm (V) should demonstrate a linear and predictable 'motion pattern' as the warp is traced, this contrasting the conventional counterbalanced arm (IV) which will not enjoy such a controlled and speedy low-frequency recovery. However, because the lateral bearing axis (vertical movement) has been orientated at the mean record level and the counterweight coupled firmly towards the pivot point, any problems due to the inertia of the arm will be minimised, so aiding the tracking of warps. This is in spite of the slight increase in effective mass (nearer the 11g mark compared to the 10/11g of the Series V). For convenience, SME have retained the spring-loaded bias control which includes a finely-calibrated scale and positive zero-position.

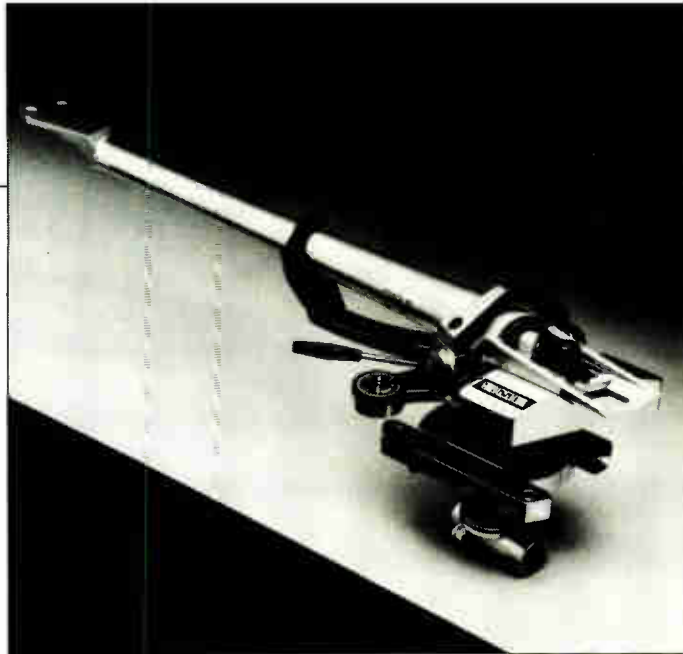
With the current resurgence of interest in cables, the changes in internal and external wiring for the IV may well prove significant. LC-OFC wiring replaces the internal silver-litz and external vdH cable of the 'V' whilst the audio lead itself is terminated in cheaper, gold-plated phono plugs. Nevertheless, SME claim that the capacitance and resistance of each conductor remains the same, even if there are other parameters affecting cable 'sound'.

SME's highly original dual-lock base is fitted to the Series IV, allowing the stainless-steel pillar to move vertically between the two jaws and horizontally along two slideways. This base may be conveniently bolted to any armboard with four high-tension allen-bolts, the exact positioning determined by the mounting template which is supplied with the 'IV'. Before the settings are locked into place the horizontal tracking angle may be adjusted via a special key that drives the bedplate, via a rack and pinion, along its guides, although the pillar height (and therefore the cartridge VTA) must be adjusted by hand – the 'V's VTA tool is not included, unfortunately. One practical consideration that has materialised during my time with both the Series IV and V concerns the limited clearance between the rear of the arm tube and the outer edge of a record (especially when warped); with a relatively shallow-bodied cartridge the arm may actually foul on the rotating disc with disastrous consequences! Addressing this potential problem, SME do provide a magnesium shim that locates between cartridge and headshell, thereby raising the height of the arm once the main beam is re-aligned parallel with the platter surface.

## Sound quality

Auditioning the SME Series IV on a Pink Triangle TOO turntable proved unexpectedly eventful, for having grown accustomed to the neutrality of the Series V its stablemate displayed a definite 'character'. These results were confirmed over a period of five weeks or so, with recourse to several cartridges including models from Koetsu, Clearaudio, Ortofon and the MC10 produced by van den Hul.

The 'IV' enjoyed the same expansive bandwidth as the 'V' but specific areas were undoubtedly accentuated. This was particularly true of the bass where the lower octaves were strongly reinforced – additional richness was imparted to the rhythm of bass guitars whilst the natural authority of a well-recorded drum was underlined with an uncommon weight. As a direct consequence most material urged forth with a strident and lively gait that contrasted with the austere neutrality of the Series V. For the most part



Contrast with the IV – the SME V's black finish

this zestful bass was suitably controlled, rarely impinging upon the delicate transparency of the midrange; however, some cartridges (particularly those of the Koetsu Black genre) required some considerable fine-tuning if a vague, but nevertheless disturbing, 'bloom' was to be avoided. Once a satisfactory balance was obtained (by altering both VTA and tracking weight), the positive and solid LF performance ensured that all modern recordings were delivered with a punchy, foot-tapping rhythm.

The introduction to 'Sleepwalkers', from Level 42's latest album *Running in the Family*, provided a succinct example where the accomplished drumming and resonant *thrum* of the bass guitar would punctuate the ambience of the recording with startling impact. Despite such an emphasis, the midrange was rarely compromised, as suitably recorded vocals appeared clear, stable and thoroughly 'believable' with no undue highlighting of sibilance or hardness at high levels. This buoyancy aided the illusion of a

broad and deep soundstage, although in truth the resolution of far depth was restricted by comparison with the Series V – however unfair this comparison might seem! Some forwardness and imprecision in the midrange was aggravated by the close-miked vibraphone on Gary Burton's 'Olhos de Gato' (ECM 1030) as the overwhelming energy of the lower octaves spilled over into what was previously a delicately poised and balanced soundstage. This was virtually the only occasion where the integration and overall lucidity of the 'IV' was compromised by a difficult track – but it was noted nonetheless.

Thankfully, the treble registers remained untarnished, portraying the most filigree of harpsichord passages and dynamic cymbal-work with equal regard. Timbral relationships were faithfully preserved with no hint of grain or fatiguing coarseness whilst the delightful ease and uniformity about the upper octaves always encouraged extended periods of listening. With some cartridge combinations this relaxed treble perspective might appear slightly reticent, however this would not be a true reflection of its capabilities – the information remains intact but does not employ the aggressive, bright characteristics so often confused as impressive 'detail'.

## Conclusion

Reflecting on the obvious similarities between the SME Series V and IV tonearms, it is quite remarkable that a reduction in tolerance levels (from unequalled to extremely good!) and a change in the application of the tracking force should result in such noticeable subjective disparities. Several trains of thought emerge; certainly it would seem that many of the competing 'super arms' may harbour additional qualities just waiting to be discovered once the bearing tolerances are increased. But more importantly, it demonstrates that the original Series V is not simply a 'flashy' tonearm but a thoroughly refined piece of engineering that benefits from every second of inspection during its precise assembly.

At £675 the SME Series IV faces no real competition as it easily holds sway over analogue products below, and some way above, this price level. Nevertheless, the Series IV should not be mistaken for a Series V 'on the cheap'. It is a finely executed and tastefully finished design in its own right, possessing a vibrant and lively character that will doubtless appeal to those listeners who find the revealing neutrality of the 'V' too explicit to contemplate. But with a saving of £500, who's complaining? ●

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Effective length (pivot to stylus)	233.15mm
Effective mass	10/11g
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Tracking force range (at minimum cartridge weight)	0-3g
Maximum tracking error	0.012°/mm
Null points, inner/outer	66.04mm/120.9mm radius
Auto lead length	1.2m
Capacitance	140pF/channel
Resistance each conductor.	0.145ohms
Output plug type	DIN 5 pole 240°
Weight	700g
Typical price including VAT	£675



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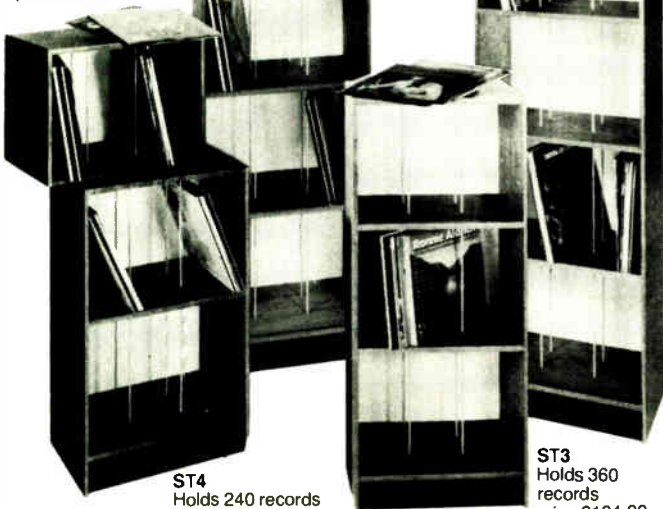
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# THREE STEPS TO HEAVEN

Martin Colloms reviews three British speakers, all strong contenders at their price points: Monitor Audio R352MD, Ruark Sabre and new Rogers LS7t

**T**HIS GROUP of three speakers covers promising new or revised designs at the important price points of £279, £299 and £359. The middle model in this trio comes from the young company, Ruark, who have supplied us with the Sabre, comprising a medium-sized two-way model, and two industry stalwarts weigh-in with new versions of well-established models, now equipped with metal-dome tweeters: the 352MD from Monitor Audio and the LS7 T from Rogers.

Test procedure for these three models was as described in the introduction of the Roksan Darius feature review (p57); the three models are dealt with here in ascending price order.

## MONITOR AUDIO R352 MD

I reviewed this speaker in its original form some four years ago, and remember it as a good value model, one of remarkable power and good sensitivity, with a generously-sized box and fine finish for the money. Now, just when it is beginning to show its age and when some obvious criticisms could be levelled concerning its modest performance, a new version has arrived, entitled 'MD' which refers to the metal-dome tweeter. Not all metal domes are good performers, however, and this one was developed by MA in cooperation with SEAS, the noted Scandinavian drive-unit manufacturer, to meet specific standards. Properly handled, metal-dome tweeters are capable of making a fine contribution to speaker performance. Ideally, they are consistent and well matched between channels, and free from tizz or other similar audible breakup. They are also capable of good transparency and resolution of fine detail.

The generous dimensions of the R352 box are unaltered, and the cabinet is veneered in real wood, measuring 64 × 25 × 32cm (HWD). Of 36 litres volume, it uses bass-reflex loading with a 62mm diameter port only 40cm deep, thus ensuring good air flow symmetry as well as low coloration. The two drivers are mounted vertically in line, the bass/mid driver being a 210mm steel-frame design, with a light flared-pulp cone and a synthetic termination surround. Its fundamental resonance is high to ensure good power handling as well as optimum tuning with this enclosure's bass design. A special magnet system offers reduced distortion.

Vertical braces stiffen the long sides of the enclosure and distribute resonances, the result being relatively light and rigid for the size. A slim rebated grille panel with good acoustic properties is fitted, and the second

driver is a 25mm aluminium dome unit which replaces the original 19cm plastic model. The crossover uses a single inductor for the bass unit, designed to suit a simple network, while the treble section employs a second-order arrangement with an attenuating resistor to balance its level against the bass. 4mm socket/binding posts are fitted, while the base is pre-drilled to accept a matching MA stand (not supplied).

## Sound quality

First impressions were of a promisingly sweet, articulate and well-ordered sound, with only mild coloration, and in fact this character was maintained throughout the auditioning. Slightly mid-forward, this helped to offset the character of the bass, which might otherwise have sounded a touch boomy. As it stands, the two were in good proportion. The bass was powerful and clean, strong down to about 50Hz and weakening quickly at lower frequencies. In the midrange some moderate coloration was evident – some 'paper cone' sound, mild boxiness, and a touch of congestion and muddle on more complex material. Nevertheless, the '352 sounded clear, with good resolution of detail. Still more impressive was the smooth transition to the new tweeter, which was inherently musical and neutral. In fact, the treble was exceptionally pure, and only the most critical would notice the merest hint of 'zing' in the highest reaches.

Stereo images were well resolved, with a generous scale and fairly good depth. Image focus was well above average. There was no feeling of a forced or unnatural tonal balance, and the speaker sounded quite lively and dynamic, proving easy to get on with, and was fair to both analogue and digital sources. This sensitive model appeared easy to drive and produced high sound levels, with a suggested maximum of 100W/channel.

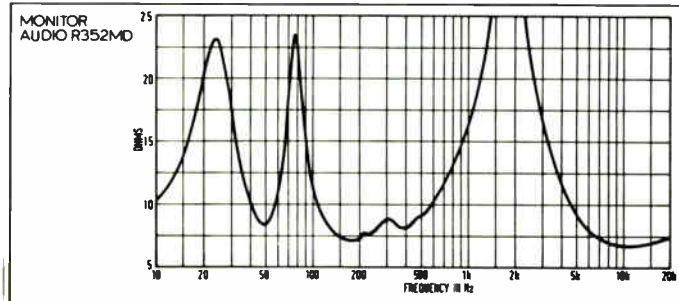
## Test results

The sensitivity was high at 90dB/W, 1m, and as such will make the most of amplifiers from as little as 10W/channel upwards. It also offers a mild amplifier loading, with a minimum value of just under 7ohms at 10kHz (Graph 1). System resonance (reflex) is at 50Hz, with a hint of the slight mid coloration appearing in the impedance graph ripple at 300-400Hz.

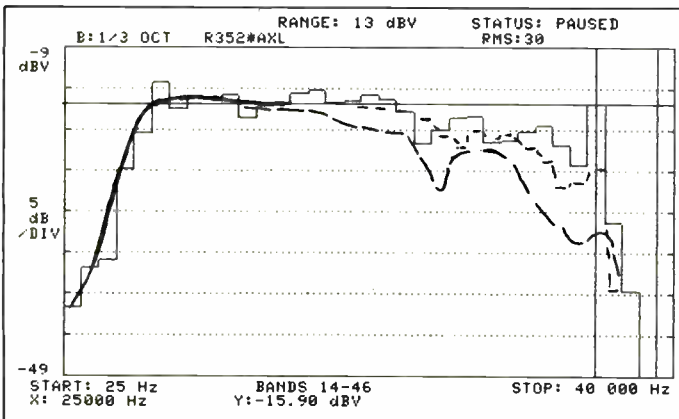
On-axis at 1 metre, the semi-anechoic 1/3-octave responses (Graph 2), show a smooth curve with a mildly depressed treble. At 30° the output is well maintained; while at 45° some loss is inevitable in the upper frequency

range. This response grouping was more than presentable, while the bass was held to 50Hz, below which point it rolled off quite steeply.

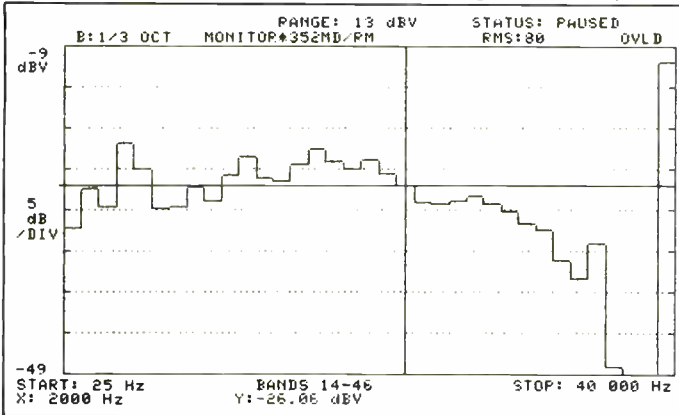
Turning to the computed room average response at the listening position (Graph 3) the bass was indeed prominent at 50Hz, but in balance with the broad, relatively well-proportioned mid plateau. The treble is slightly depressed, but remains well integrated with the midrange and was well behaved to the edge of audibility. The small peak in the extreme treble was in fact the upper dome resonance, at a relatively harmless 25kHz. When averaged in octave bands (Graph 4), this speaker's overall character can be seen: slightly bass lumpy, with a broad but mild mid



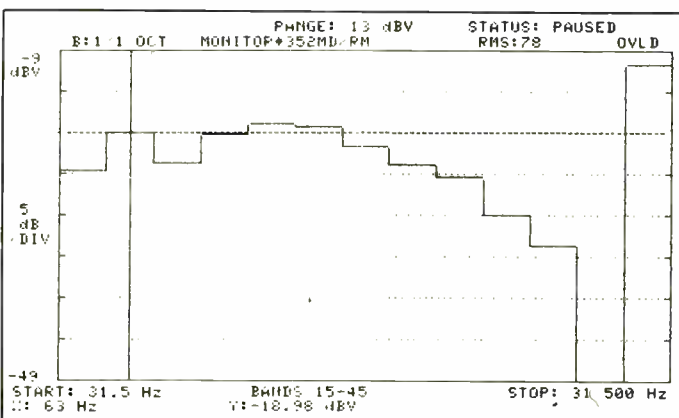
Monitor Audio Graph 1: modulus of impedance



Monitor Audio Graph 2: set of forward responses derived from third-octave plots (solid trace, axial; dotted, 15° above; dashed, 30° lateral; long dash, 45° lateral)



Monitor Audio Graph 3: room-averaged third-octave response



Monitor Audio Graph 4: room-averaged response in one-octave steps

emphasis and a well-integrated treble decaying with frequency, the right trend on this room graph.

## Conclusion

This modestly priced speaker is both large and unusually well finished. The new tweeter has endowed it with a degree of refinement which was lacking in the original, and the result is both musical and unfatiguing. Nevertheless, it could pack quite a punch in the bass and its high sensitivity allowed for easy cruising at high sound levels; it also offers an easy amplifier load. Colorations were relatively mild and it could deliver good stereo for the price. In fact, the R352MD can now be said to be restored to a fully competitive form, and wins a comfortable recommendation.

## RUARK SABRE

Built by a man with considerable cabinet experience, the Sabre has a superb enclosure. Finish is in real wood, in this case black-ash, with fine detailing and a distinctive rebated edge style. This is a miniature design, comprising a sealed box of 10.5 litres internal volume, driven by a 170mm doped-pulp cone bass/midrange unit built on a pressed-steel frame, with a modest magnet designed to offer better than usual bass extension for the size, in the manner of the Celestion SL6S. Sensitivity is correspondingly on the low side. The bass/mid unit and the 25mm soft plastic dome tweeter are of Scandinavian origin, and there is more than a passing resemblance to the Diesis Solitaire.

The driver baffle is made from 18mm thick MDF and the interior is foam-lined for absorption. Gold-plated socket-head bolts have been chosen for fixing the drivers – for decoration perhaps? The inside is plain except for a half-brace to the rear panel, locking in the side walls. 4mm socket/binding posts provide electrical connection, these being recessed in the rear panel with somewhat limited access. A fairly thin 10mm rebated grille panel is fitted, which stands clear of the front panel by a few millimetres and is covered in stretch polyester weave. The hardwired crossover is essentially second-order, using commercial grade components. Good workmanship is evident.

Such a modestly-sized speaker is a possible candidate for shelf-mounting, but the Sabre is also suited to stand-mounting. For test, Stone 'Foundations' 46cm high were used, clear of the rear and side walls.

## Sound quality

First impressions were of a lively and open performer, with competent bass but some lack of warmth and body in the low midrange. A trace of 'zing' was evident in the treble, but overall the sound was encouraging. The tonal balance was basically fine – bass, mid and treble ranges were in good proportion, though the midrange was itself somewhat unbalanced. It was correct in the upper range, but a touch dry and thin in the lower, the cello band if you like. In the bass it proved to be fluid, articulate and surprisingly extended. The mid, while a little depressed in the lower range, also showed some congestion and mild coloration. Past this transition, the mid improved, delivering a clear, detailed sound and a clean transfer to the treble. Generally good, the latter was not to metal-dome standards, and was marred by a 'sszz' effect – an exaggerated breathiness in the highest range, its severity depending on the programme, and to some extent on the listener's acuity. In fact, older listeners may not find this a problem since it lies above 11kHz.

While the Sabre was considered quite dynamic it was not really transparent, and the stereo images produced possessed only modest depth. Strangely, while the stereo focus was quite good, it was not as sharp as that obtained from most good speakers of this small size. The Sabre showed good power handling, sustaining up to 100W of heavy bass input gracefully, though quite large amplifiers are necessary to generate decent sound levels.

## Test results

The sensitivity was measured at 84.5dB/W, which was rather below average. 100W/channel will allow for maximum sound levels of 99dB. The system resonance was identified as 72Hz, with an impedance minimum of 6.7ohms at 160Hz, and an average value of 8ohms representing an easy amplifier load (Graph 1).

In Graph 2 the set of axial frequency responses are seen to be quite well ordered, with one exception: the marker shows an isolated 3.5dB treble maximum in the 12.5kHz 1/3-octave band. Excluding this peak, the response extends from 60Hz to 10kHz,  $\pm 2.5$ dB. At 30° off-axis laterally (and also at 15° vertically) the treble aberration is ameliorated and the overall frequency balance is maintained. Thus a 40cm stand with the speakers 'toed in' by about 20° will give the best results, as we found on audition. Good integration was shown by the set of forward responses, while the bass rolloff rate was sufficiently shallow to allow for some extension by means of room augmentation.

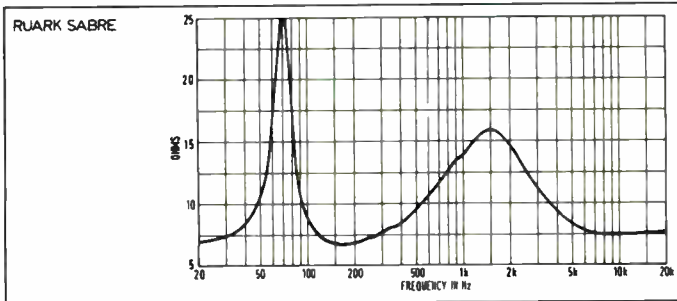
Turning to the room response (Graph 3), the bass does continue to 30Hz at the expense of a 2dB of lift at 50Hz. A mild mid plateau can be seen, with a well-proportioned treble except for a remaining trace of the 12.5



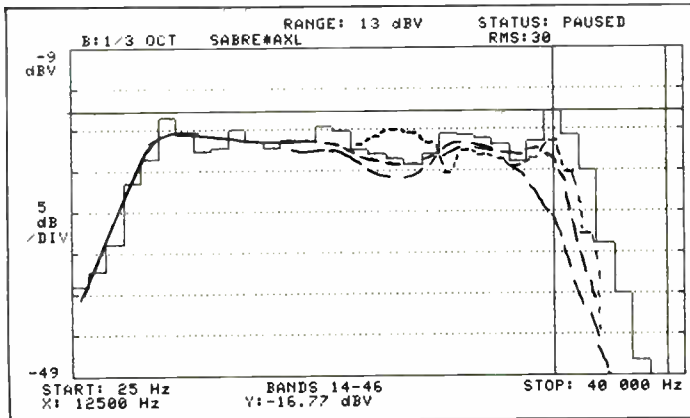
kHz prominence. Ideally, the rolloff should continue smoothly here. Assessed in octave bands (Graph 4) the 50Hz lift is still evident, as is the mid plateau, but the basic shape is correct.

**Conclusion**

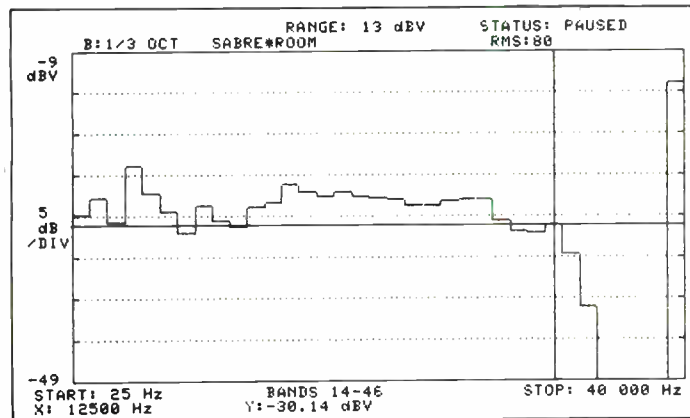
This well made and excellently finished speaker was pretty well balanced tonally and rewards the listener with good bass for its size; but this performance is obtained at the expense of sensitivity. The stereo was good but not exceptional, with some loss of focus and depth. In addition, the



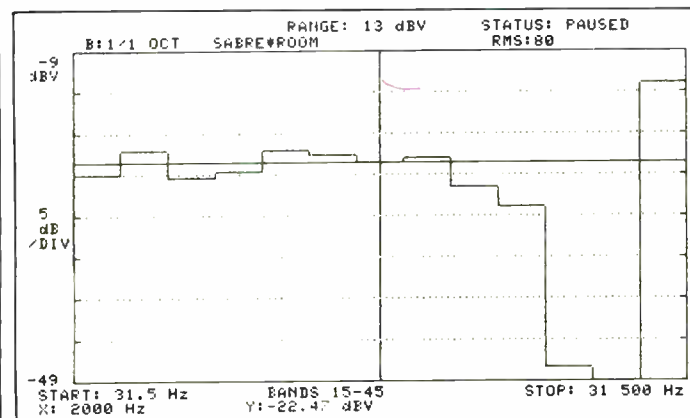
Ruark Graph 1: modulus of impedance



Ruark Graph 2: set of forward responses derived from third-octave plots (solid trace, axial; dotted, 15° above; dashed, 30° lateral; long dash, 45° lateral)



Ruark Graph 3: room-averaged third-octave response



Ruark Graph 4: room-averaged response is one-octave steps

upper treble was less than perfect with its 12.5kHz aberration, but the importance of this must be estimated by the individual purchaser. A good effort, but only a cautious recommendation is possible at this price level.

**ROGERS LS7t**

The original LS7 attracted very good reviews; for example, it held Best Buy rating in *Hi-Fi Choice* for a number of years. It was conceived as a compact, wide-bandwidth monitor, with no concessions as regards quality of enclosure, finish, or other ingredients such as drivers and crossovers, and from the outset of this review it was apparent that these basic aims were still in force. Our LS7t came in a black-ash veneer, looking very tidy and including a flush-fitting, black polyester weave grille. Some significant changes have, however, been made in the new version. For example, the original used a Bextrene coned bass/mid unit with a fabric-dome tweeter, but here a completely new polypropylene-coned driver has been fitted, this being a derivative of the LS6 unit. A new titanium metal-dome tweeter is also used. The single pair of input terminals fitted to the original speakers have here been replaced by two, linked by jumper wires. Remove the jumper wires and the LS7t is ready for bi-wired operation, with consequent benefit to sound quality.

The 30-litre enclosure is bass-reflex loaded by a long 120mm duct, with a generous 65mm aperture, radiused to aid air flow and minimise 'chuffing' noises. MDF is used for the front panel, unlike the carcass, which is of chipboard well damped by an interior covering of bituminous pads. Quite a complex and high quality crossover is installed, using selected film capacitors in nearly all positions. In the bass it is third-order, with damping resistors and a voice-coil impedance compensator. The treble section is also of third-order, with a damping resistor, setting the treble level via an open-core auto-transformer whose leakage inductance is deliberately exploited to provide some equalisation of the tweeter's upper-range lift caused by its protective phase-plate. An aluminium plate is used for the 210mm bass/mid unit, and the whole speaker is built to a very high standard. It is suited for use on rigid stands 40-50cm high in free space, directed to the listener for sharpest stereo focus.

**Sound quality**

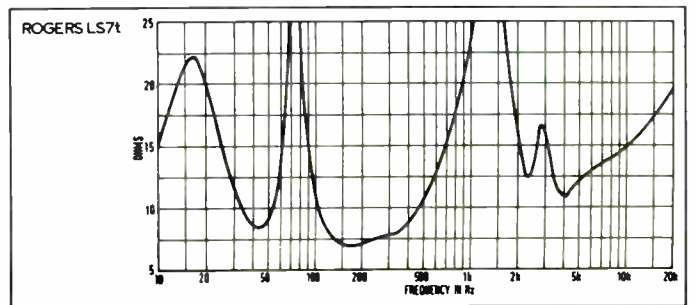
On first hearing we thought that the new '7 had hit the jackpot. Our impressions were of a topnotch quality – a rich sonorous treble, excellent mid clarity, fine stereo depth and sharp stereo focus. Its character was open, with excellent transients and a lively dynamic quality. The bass was well above average, sensitivity good, and the power handling an easy 200W/channel. However, these good results were marred by an aberration in the upper mid/lower treble which eventually came to dominate this speaker's perceived performance. The midrange was mildly up-tilted, but also tended to hardness and glare in its upper reaches, a region which is difficult to separate from the low register of the treble. The treble itself was exceptionally clear, but too dry in the upper range – and too strong, almost 'metallically nasal' in its lower range. In the bass the LS7t showed power and extension, slightly heavy but with good articulation.

Normal and bi-wired connections were compared, but the overall character remained unchanged. However, the good qualities of definition, focus and clarity were certainly enhanced in the bi-wired mode. As the listening progressed, it became more evident that the low treble was amiss, and this sonic flaw dropped the performance rating from verging on 'very good' to 'average'. No disgrace in itself, this was nevertheless a disappointment in view of its exceptional initial promise.

**Test results**

This design's good sensitivity has been maintained, with an above-average reading of 88.2dB/W at 1m. A reflex resonance point of 44Hz was noted, which is quite low for the size of box. The minimum impedance (Graph 1) was 7ohms at 160Hz, while the average value was nearer 15ohms, clearly representing an easy amplifier load.

From the semi-anechoic axial responses (Graph 2) the picture looks rather promising, with little evidence of the subjective anomaly save a mild rise at the 5kHz marker frequency. 60Hz to 20kHz was charted to within ±2dB on axis. Some clue was obtained from the off-axis responses, ▶ 77



Rogers Graph 1: modulus of impedance

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# MIDNIGHT SPECIAL

Marantz UK burned the midnight oil to create the Special Edition of its CD273 Compact Disc player; Martin Colloms tests both versions

**M**ARANTZ claim an up-market position for their range of CD players, and aim to distinguish them from the common herd by specific features of internal design and componentry. These budget players come in at £200 for the standard version and £249 for the SE or 'Special Edition' of the CD273. However, in common with their brother, the CD65 (also now available in SE form) neither of these machines has remote control, except in conjunction with the Marantz system remote interlink for matching rack systems. The first machine with remote is the £450 CD75, then the highly featured flagship CD94 at £800.

The '273 is built at the Philips Hasselt factory in Belgium to unique Marantz specifications. Specific grades of components and an additional regulator for the DAC are incorporated, the design using the budget Philips CD transport, which has suffered from some reliability problems over the past year. This drives the 16-bit four-times oversampled decoder with its digital filtering, linear phase response and dual converters in one chip, the '1541'.

In the SE version, many electrolytic capacitors are replaced by costly Cerafine audiophile-grade components, and are also increased in numeric value. The polarised output electrolytics are replaced by a bi-polar unit made from back-to-back Cerafines, while in the filtering and de-emphasis sections, damped copper-foil polystyrene capacitors have been substituted for the normal polyester film types. In addition, the LM 833N output amplifiers are replaced by copper lead-frame JRC 5532 units. This is a nicely finished, mid-sized machine, and would constitute an inexpensive and unobtrusive addition to an audio system.

## Sound quality

The basic '273 was recognizably of Philips 16-bit origin, which is meant as a compliment. In sound terms it was lively and dynamic, proving well-focused and showing good stereo depth. It has a good resolution of detail and a relatively neutral mid-band, but in the treble some 'laziness' was evident, with a mild spurious 'sszz'. However, this was less noticeable than in the case of the Philips CD160, which rated 65.4% while the '273 scored 67.7%, undoubtedly fine in view of the price.

Moving on to the SE version, the improvement was unmistakable, with the score advancing to 74.5% and little removed from the CD75 itself. (As a reminder, the recently reviewed Philips CD360 scored 72.3%.)

The SE showed some improvement in treble tidiness and focus, together with a clearer and more dynamic midrange. The bass was firmer, with greater power and slam, while stereo depth and focus were significantly advanced, and well worth the extra cost.

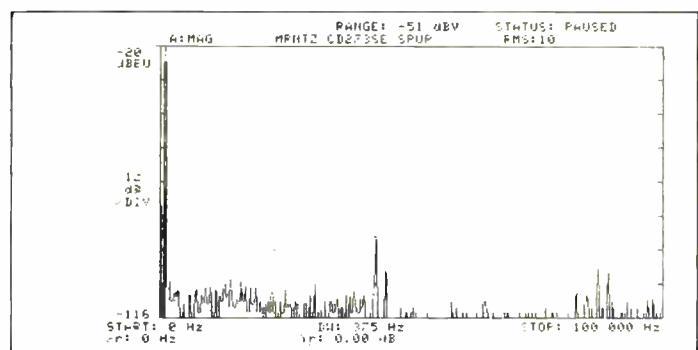
## Lab report

The test results were very similar for these two machines, with both continuing to show significant level errors at the bottom floor of the dynamic range. Comparing the two directly, the results for channel balance were similarly very good, while the SE showed slightly improved channel separation (98dB up to 102dB) at 20kHz. Both gave perfect time correspondence between channels and offer a non-inverting, linear-phase pulse response. The SE gave better results for full-scale distortion,

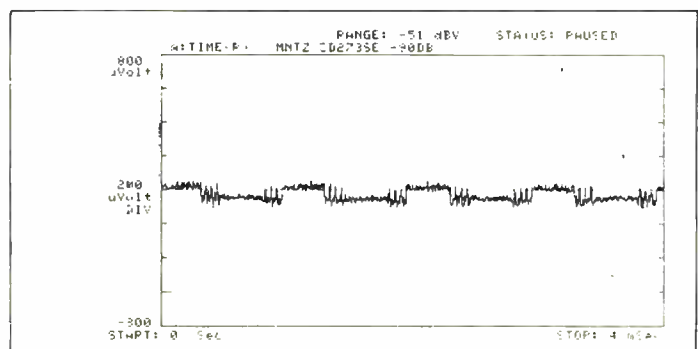
particularly so at 20kHz, with -87dB recorded (0.0045%) as compared with -80dB for the plain '273'. At lower signal levels the results were similar, noting that both showed poorer than average distortion at -80dB and significant level-errors at -90dB modulation; eg, -8.4dB L and -29dB R for the SE and -11dB L and -14dB R for the '273.

The frequency responses were almost identical (Graph 1), as were the de-emphasis results, so these cannot be held to account for the sonic differences. An output voltage of 2.11V, close to specification, was delivered from a low source impedance of 200ohms, track access was quite rapid at 3.5 seconds for the standard test, and mechanical noise was held to low levels. The electrical signal/noise ratios were excellent, typically 105dB, and were identical for the two machines.

An overall linearity of 15-bits was indicated, but this performance was clearly amiss at the 16-bit level, in common with many current Philips machines. Note the -90dB 'sinewave' reproduction (Graph 2), which was at a very low level and with poor resolution. [See Sony R-DAT results, p49, with the same '1541' converter.] The spurious responses were identical for the two machines, as were many other graphs. With a 1kHz fundamental, the main spurious signal was at 44.1kHz, 75dB down. Good results were also obtained with the two-tone 19/20kHz modulation test,



Spuriae associated with 1kHz tone, -20dB



Waveform from 1kHz sinewave at -90dB

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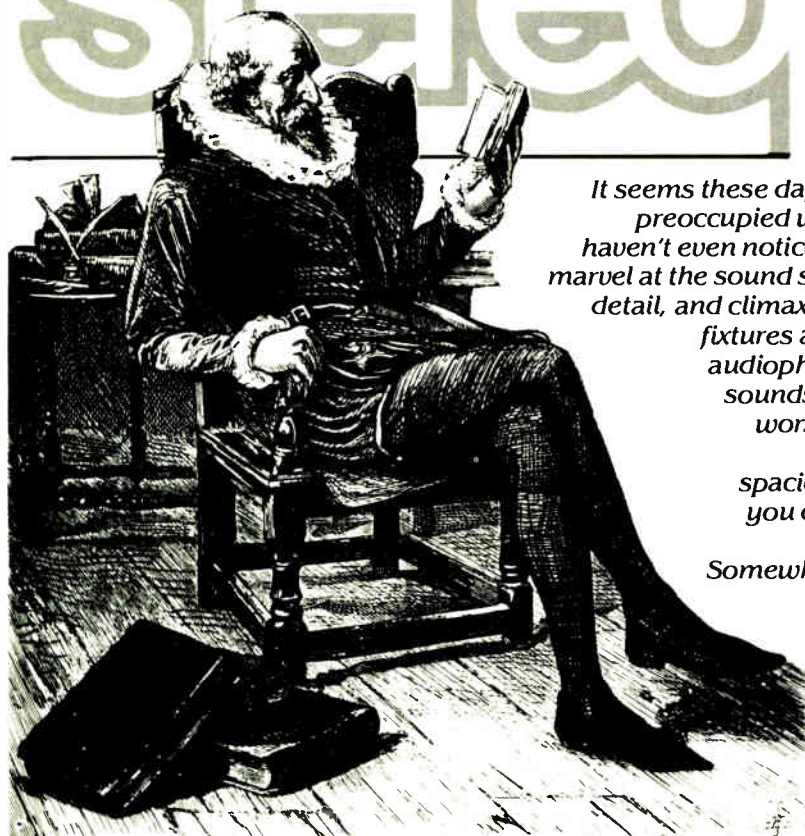
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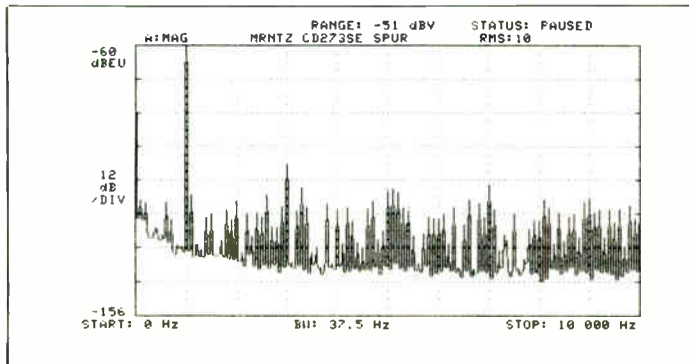


*It seems these days that many of us Audiophiles have become so preoccupied with the minutiae of sound reproduction that we haven't even noticed that it doesn't sound like music anymore. We marvel at the sound stage presentation, lose our continence over the detail, and climax over our systems ability to rattle the lighting fixtures and scramble our otoliths. But ask your average audiophile if his super system reproduces instrumental sounds realistically and he'll give you a blank stare, or worse, tell you that it must because it's so accurate.*

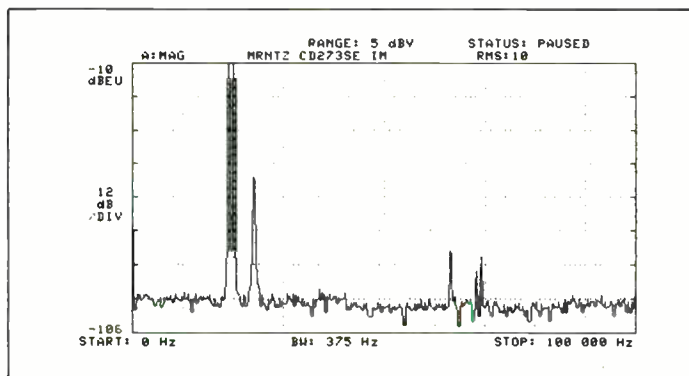
*What makes it accurate? Well, listen to that spaciousness, that detail, that seismic bass! How can you doubt?! (How realistic is it? Whaddya mean how realistic? What's that got to do with anything?) Somewhere along the line we lost track of what Audio is all about: **The Reproduction of Music.** J. Gordon Holt, **Stereophile**. Vol.8 No.7 December 1985.*

*Stereophile, The oldest 'Underground' Audiophile Magazine currently being published in the United States, is available (£4.95) from Moth Group, 47 Armstrong Close, Wiltstead, Bedford MK45 3EJ, 10234 7411521, and from selected Hi-Fi stores throughout the UK. Stereophile is published monthly (except Jan-April:July-Oct). Please write for subscription details.*

where the difference-signal at 1kHz was buried in noise (Graph 3).  
 At -60dB, the harmonic distortion spectrum is shown in Graph 4. Here, the dominant harmonic was the third at 42dB down, 0.8%. The 'spray' of digital products seen here is normally buried in the higher noise floor of average players, and shows the discontinuous nature of a digitised noise spectrum. The fundamental frequency was based on multiples of



Spuriae associated with 1kHz tone at -60dB



Intermodulation, 19/20kHz tones at -10dB

100Hz; in fact a multiple of the periodicity of the display lines themselves. Aside from the poor results at -90dB, the lab tested performance of both machines was considered very good.

### Conclusion

The '273 acquitted itself well and gave us a pleasant alternative to the CD160 at a rock-bottom price and with marginally better treble. The '273 SE provided a substantial improvement, making it one of the finest players at the price. In a sense, it usurps the position of the more costly CD 65 SE, and the logical next step up in the Marantz range is to the remotely-controlled CD75. One cannot ignore the good sound of the Philips CD360, with its FTS feature and remote control. The 273SE takes on that model, and offers a clear choice: for the maximum fidelity select the 273SE, and for good sound and features, the '360.

Regardless of the above, all the Marantz machines, including the '273 itself, are strongly recommended as offering excellent value. ●

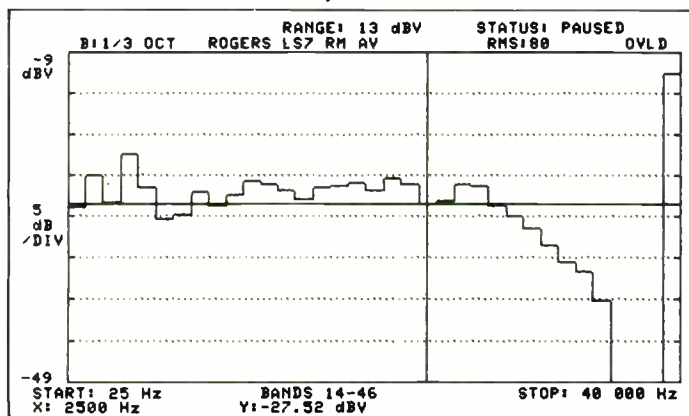
TEST RESULTS	MARANTZ CD273	MARANTZ273 SE
Channel balance	20Hz 0.03dB, 1kHz 0.02dB, 20kHz 0.02dB	20Hz 0.08dB, 1kHz 0.07dB, 20kHz 0.04dB
Stereo separation	-121dB	-108dB
Channel phase difference	0°	0°
Total harmonic distortion, 0dB	-88dB	-84dB
Total harmonic distortion, -10dB	-	-81dB
Total harmonic distortion, -60dB	-	-42dB
Total harmonic distortion, -80dB	-	-14dB
Intermodulation, 19kHz/20kHz, 0dB	-	-105dB
Intermodulation, 19kHz/20kHz, -10dB	-	-99dB
Frequency response, left channel	+0dB	+0dB
Frequency response, right channel	+0dB, -0.03dB	+0dB, -0.03dB
Signal/noise, 20Hz-20kHz unweighted	-111dB	-111dB
Signal/noise, CCIR/ARM, 1kHz ref	-106dB	-106dB
Output level, 0dB	2.11V	2.12V
Output impedance	200ohms	200ohms
De-emphasis	correct	correct
Track access time	3-5secs	3-5secs
Error correction capability	gap>900µm, dot>800µm	gap>900µm, dot>800µm
Mechanical noise	moderately low	moderately low
Spuriae up to 100kHz	-86dB	-87dB
Resolution at -90dB, left/right	-11/-14dB	-8.4/-29dB
Headphone socket	no	no
Dimensions (WDH)	31.8 x 31 x 8.6cm	31.8 x 31 x 8.6cm
Estimated typical purchase price	£199	£249

73 particularly in the case of the 45° lateral measurement. Here, and in terms of the general forward response trends, it was clear that the tweeter showed an intensity maximum at 4-5kHz which coloured the off-axis and reverberant sound. In this case it is not enough to design just for a flat axial response, as the off-axis response also requires assessment.

The computed room-average (Graph 3) provided further evidence. The midrange shows a mildly rising trend from 100Hz to 2kHz, while the main treble is somewhat prominent in the 4-5kHz range. But in other respects the curve is quite well balanced, and shows good bass extension - though with more than a hint of lift in the 50Hz region. Assessed in octave bands (Graph 4), the mild bass 'boom' is exposed, with an almost imperceptible rise through the mid. In my view, on this graph the upper-mid is too well extended and should have been rounded off a little earlier.

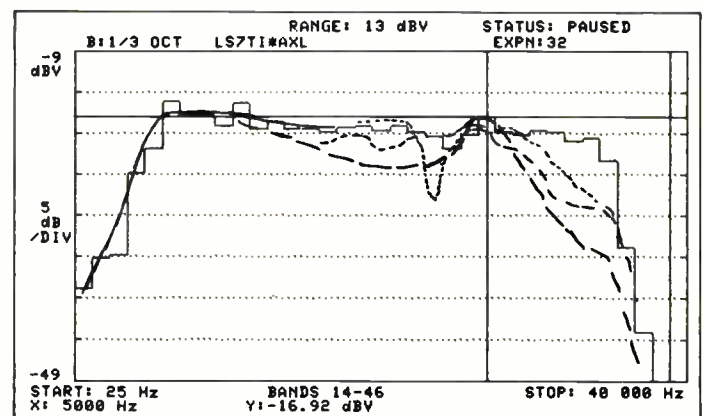
### Conclusion

In many respects this was a fine speaker representing a radical advance over the original LS7 in terms of clarity, transparency and stereo focus. It was quite well balanced overall, but we found the lower treble prominence a problem, holding back the final score. You may like it as it stands, however, but at this time I can only offer a reserved recommendation. ●

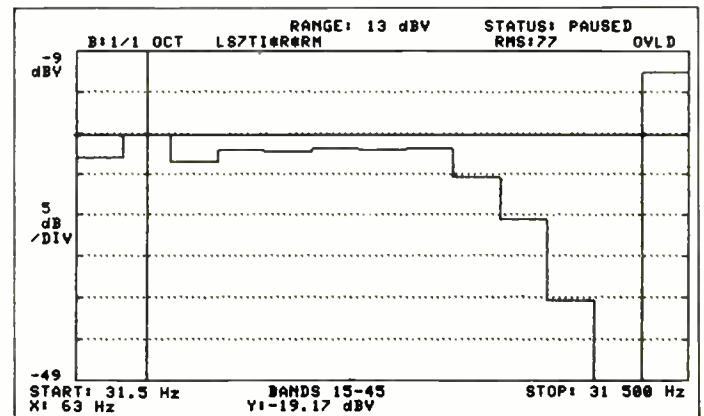


Rogers Graph 3: room-averaged third-octave response

### THREE STEPS TO HEAVEN



Rogers Graph 2: set of forward responses derived from third-octave plots (solid trace, axial; dotted, 15° above; dashed, 30° lateral; long dash 45° lateral)



Rogers Graph 4: room-averaged response in one-octave steps.

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*Ray Lumley*

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# CALIFORNIA PEARLS

Ken Kessler picks the most promising gems from Infinity's budget speaker range

**C**OINCIDENCE, to be sure, but Infinity named their one-from-the-bottom loudspeaker with the same tag Ford used for a very hairy car based on a mundane saloon. The goal is the same: big results from a small package. In Infinity's case, it was a desire to endow the affordable models with some of the dynamics of the near-legendary giants at the other end of their model line-up, no mean feat when the box is only a couple of inches taller than an LP sleeve.

Though slightly larger than an LS3/5A – and a lot larger than Infinity's outrageous Infinitesimal – the RS2000 is still small enough to classify as a 'mini', and easily fulfils the design criteria for a manageable enclosure. Add to it a price tag of only £189 per pair, and you can see that in terms of size and price Infinity has come up with a realistic budget offering. In light of its status as an import, the price is no mean feat. (Infinity also offers a slightly smaller model, the RS1000, for £139.)

The size and price, though, are not particularly uncommon here, and we have homegrown speakers galore which can match the RS2000 for those statistics. This leads us right to the crucial point: has Infinity managed to produce a loudspeaker for fans of the marque who can neither house nor afford the traditional models?

Nobody would for a moment imagine that the company has cooked up an HO-scale version of the near-mythic IRS for a mere half-percent of the cost. Rather, this is an attempt at providing a small box with the aforementioned outstanding dynamics – the trademark of the larger Infinity models – and exceptional clarity. The latter would be the trickiest quality to ape, because the larger models have treble provided by the very quick and relatively costly EMIT planar drivers, while these smaller units sport dome tweeters.

Infinity has years of experience with polypropylene bass and mid drivers, so this expertise was used to create a dome tweeter they've labelled 'Polycell'. Okay, so over here it means DIY home-decorating adhesives, but in Infinity parlance it refers to domes made of ultra-light plastic foam. It doesn't take hours of intense listening to appreciate that the RS2000 produces very fast, crisp highs, and the family resemblance is well-maintained.

This also carries over to a character trait of Infinity speakers which is partly responsible for the luke-warm treatment they've received here in the past. Infinity speakers can sound very bright indeed, a far cry from either Quad ESL or BBC-inspired highs, and the RS2000 shares this. It creates the first compromise you must face – compromises being a part of the ownership of any affordable hardware – and you have to choose between listening to them with or without grilles. If the grille is removed, the sound becomes more transparent, but the trebles splash. Leave the grilles in place, and the spitty sound is virtually eliminated, but slight thickening occurs in the midrange. I preferred the RS2000s with the grilles in place, but I hold that it's a matter of personal choice.

The RS2000s are beautifully styled and constructed, with the dark grilles 'floating' in front of the baffle to eliminate diffraction problems. The edges of the cabinet are curved for the same result, looking very much like the woodwork on the AR Legend turntable. Just about the only economy evident through an empirical examination is the use of a vinyl wrap, but it's quite 'authentic' as far as pseudo-wood goes. The back houses heavy-grade spring clips, with orifices large enough to accept banana plugs.

I used the Infinitys with the Marantz PM4 integrated amplifier in Class-A mode. It had no problem whatsoever driving this 6 ohm, 89dB-for-1W load to horrendous levels, so fear of compromising the dynamic potential of the RS2000 was eliminated. Sources included Thorens and AR turntables, Denon DL-103 and Audio Technica AT-F3 cartridges, and the AR CD player. For speaker stands, I used the Cliff Stone Designer models, which – despite the Tokyo pricing (£299!!!) – do more for small speakers than anything I can name. I arrived at optimum positioning of 0.5m from the back wall, and 1m from the sides, with slight toe-in.

The RS2000s have just enough of the built-in excitement, so cherished by spiv retailers, to frighten off the UK/BBC-indoctrinated listener. Even with the grilles in place, they have the kind of sparkling top end which remains anathema to many UK speaker designers, for the very good reason that it smacks of hi-fi 'sensationalism'. With lower registers which contain an exaggerated zone to create the illusion of large enclosure bass, these speakers – on the surface – give the impression of hi-fi hard sell. 83 ►

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# A SMOOTHER PANEL

Alvin Gold assesses the latest version of the Dutch-built Audiostatic ES200 electrostatic loudspeaker

**M**ODEL ES200 from the Dutch firm Audiostatic is an exacting audiophile electrostatic loudspeaker with one or two unusual features, including what appears to be a form of KEF-style conjugate load matching (using extra transformers), to produce a more efficient and less reactive amplifier load than most electrostatics. The ES200 stands about 142cm high, 48cm side to side and is just 3.5cm deep, except in the area of the feet. Audiostatic have sensibly avoided any strong styling ideas, preferring a plain baffle and side cheeks of unadorned strips of wood. The review model was finished in beech and black, and looked both low-key and elegant. But they also have a large visual 'footprint', and from experience with visitors, this is not universally popular.

The full range electrostatic panels take the form of a long, narrow vertical section in the middle, the larger part of the system acting simply as a baffle to extend the LF cut-off point. To ensure they operate as near as possible to true line sources, only a narrow vertical centre strip reproduces high frequencies, though it is not immediately obvious how the division of labour occurs. (The importer didn't know either.) The matching electronics including the transformers are fitted to the rear bottom of the speaker, and enclosed in a moulded housing. Finish is good and build-quality substantial.

One pleasing point is that this is the first panel loudspeaker I have seen that comes close to supporting itself with reasonable mechanical integrity. Stopping a tall, flat panel from flapping about is not easy; the solution chosen is the one recently adopted for the Magnepan range – a pair of heavy spiked feet, purpose-made by Cliff Stone. They look like afterthoughts, but finished production versions are promised to look much better, and they really do work. I can even take part of the blame – not for the Audiostatic stands, but as a catalyst for the original Maggie ones, which inspired Audiostatic distributor Presence Audio to approach Cliff Stone for something similar. These stands make the speakers sound tauter, more directed in the way they distribute energy, and more powerful. The effect is dramatic, even when compared with a pair of speakers mounted conventionally but with a similar-sized gap underneath. The physical problems are the same with the Audiostatic of course.

To assess the ES200s I first plugged them in and left them running for about 48 hours, with no audio signal applied. Even so, the speakers improved in sound quite obviously during the course of the first hour or so

playing music. They became smoother through the frequency range and the bottom octave 'breathed' a little better.

As I have used a number of panel speakers in the past, setting up the Audiostatics held few fears. Like all such designs, they needed plenty of room behind; they also liked plenty of open space in between. Orientation needs to be directly towards the listener, which means plenty of toe-in, as the loss of HF when listening any more than a few degrees off-axis is severe. Likewise vertically. The sound you hear when standing up is a shadow of what you get when seated. Tilting the speakers back will help here, but tends to defocus the sound for the seated listener. Even more than some other panel speakers, the Audiostatics are anti-social, and best adopted for personal listening, like outsize headphones.

With an 85dB/watt/metre sensitivity figure, the low efficiency might suggest that bucketloads of watts are going to be required. Not so, partly because the figure-of-eight dispersion pattern means that SPLs don't fall off with the inverse-square characteristic expected of a point source, but mainly because the speaker is incapable of sustaining high sound pressure levels anyway. The 50 watt Krell KSA-50 I used for most of the listening was perfectly capable of embarrassing the Audiostatics, given the right kind of music. Predictably, bass transients gave the ES200s the greatest difficulties.

The review samples as received differed in sensitivity from each other, and using a split volume control arrangement, as on my DNM preamp, caused some problems. The test system – which also included Roksan turntables with Rega and Mission arms and a Koetsu Red Signature cartridge, plus various CD players as they came and went over the two or three month review period – was wired with DNM solid core interconnect and loudspeaker cable. After experimenting briefly with more conventional cables, that is. I should add that sensitivity and pair-matching can be tweaked using an internal pre-set by the dealer, of course. Mine just happened to be un-tweaked.

The only real surprise during the initial messing-about stage was how well the ES200s suited both available listening rooms, one of which can normally be relied upon to cause panel speakers real problems. It is generally necessary to tune the distance to the rear wall almost to the inch before the sound snaps into focus. In this case, the distance was relatively uncritical, at least within a margin of a few inches. This points to the easy-going nature of the Audiostatics, and so quite obviously is



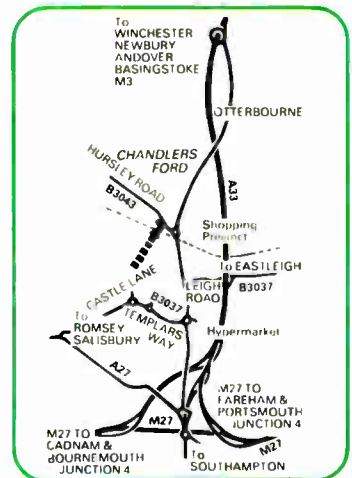
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a plus point, but the reason isn't quite such good news. The ES200 is shy in the bottom octave.

On most wide-range material, the lack of bass won't necessarily draw attention to itself. However, the first orchestral recording I used – the Gibson/SNO Elgar *Enigma Variations* (on CD), caused total constipation of the bass line, and the almost complete absence of real LF, apart from a vague grumbling sound.

The obverse of this was what turned out to be a finely judged mid and top. The overall balance favours the midband, upper midband especially, and in a lesser loudspeaker this would have led to an unacceptable degree of artificiality in the sound. This is, after all, where the ears are particularly sensitive, and where the greatest concentration of musical action occurs. The ES200s were almost achingly sweet and pure here, the top end complementing the sound without any exaggeration. Stereo soundstaging was perhaps the most explicit and convincing I've yet heard from a panel speaker. There was none of the exaggerated scale, or foreshortening of depth cues, and an almost complete absence of phasiness – the bane of panel loudspeakers. The image size was compact and precise in all planes. I was surprised more than once by the way a brass or percussion section would appear from a tangibly different plane from the other players', but the spatial separation between nearby instruments was equally impressive, and probably more pertinent. But the bright, light balance will be a problem for many listeners. The Audiostatic works with much chamber music where the lack of a bottom octave doesn't matter too much, and where the Audiostatic's speed and presence are just the qualities required. But they meet their Waterloo with anything much bigger in scale.

The number of truly worthwhile electrostatic loudspeakers available in this country can be counted on the fingers of one hand, and still leave enough over to cause offence to unsuspecting passers-by. Best known, and conceptually the most sophisticated of the lot, is the Quad ESL-63 – which is no less controversial now than it was the day it was unveiled. Although it is unrivalled for its holographic stereo imagery (partly due to its emulation of a point source by using annular rings and delay lines to reproduce a window on a circular wavefront) there is a wide disparity of views on this model which underlines its system and user dependence. More or less universally acknowledged, however, are severe bass and headroom limitations, with all that this implies for image-scale and dynamics, and



limited resolving power. And the first two limitations are also characteristics of the Audiostatic, in my experience.

The most recent addition to the sparse ranks of electrostatics, and one that has excited a good deal of attention and controversy – normally a good sign – is the Martin Logan CLS. This easily betters the Quad and Audiostatic alike in its clarity, LF extension and general transparency. But here too there are problems, including a fierce and rather phasey top end and an artificially bloated bass – which I believe is a deliberate artifice to please an American public reared on flat anechoic responses at all costs.

The other obviously comparable loudspeaker is the Magnepan MG1c, which is a *dynamic* loudspeaker, not an electrostatic. I would judge this model to be rather slower and more coloured, but the bass is an order of magnitude more authoritative, and the large Magnepan design's power handling is much better than the Audiostatic's.

So where does the ES200 fit in the general scheme of things? In view of the faults of the competition, there is clearly less pressure on the Audiostatic to behave as

though it was perfect in every respect. In fact it does well, though there is no question of its rising to the heights of the Quad, the Martin Logan, or even the Magnepan, in the areas in which they excel. The ES200 is a more rounded loudspeaker than either electrostatic, and will give more predictable and usable results across a wide range of systems, and with a wider spectrum of music than most, notwithstanding the lack of bass. But qualities like the holographic imagery and obvious neutrality of the Quads, and the resolving power of the Martin-Logans, as well as the weight and authority of the Magnepans, lie well beyond the range of abilities of the Audiostatics. If you want all the virtues of the others with none (well few) of the vices, you're going to have to pay Apogee Duetta prices for the privilege. And that really is a privilege reserved for the privileged. ●

*Distributed by: Presence Audio, Eastland House, Plummers Plain, Horsham, W Sussex RH13 6NY. Tel: (044485) 333.*

*The Audiostatic ES200 costs £1465 in standard finish (beech side cheek and black cloth). Alternative finishes £100 extra. Cloths are available in cream, grey and dark brown. Sides cheeks are in mahogany, cream, grey, brown, black. Cliff Stone supports cost £149/pair.*

CALIFORNIA PEARLS

◀ 77 It's only when the listener is prepared to go beyond the instant demo (especially of the A/B variety) that they reveal subtlety and finesse easily missed by focusing on the 'trick' areas.

The RS2000s are not the boom-tizz speakers which grab you in the shop and dissatisfy at home. These characteristics are noticeable only because you don't expect them in a British context. If partnered with something better than 30 watt receivers and cheap sources, as they probably are Stateside, the RS2000s emerge not as show-biz punter-traps but as high-definition, wide dynamic range speakers in cheap, er, sheep's clothing.

Using the LP of my own tapes as provided by Tim de Paravicini, live blues in a small club atmosphere, the RS2000s did a helluva good job portraying all three dimensions as contained in the recording. With only the slightest increase in the echo-y feel of the venue, the tiny Infinities resolved the room's width and depth with delightful accuracy – on a par with the LS3/5As in every dimension bar absolute height. The net result was a speaker which 'disappeared', as all good speakers should. This was despite a cabinet which seemed less than inert, the hollow sound it yields upon receiving a sturdy rap being somewhat ameliorated by solid mounting on the Stone supports.

This ensured that the imaging, too, was of a high calibre, with instruments placed precisely within the soundstage. More 'air' was apparent with the grilles removed, but the slight thickening was a small price to pay (for me, anyway) for the reduction in treble splash.

Coherence from top to bottom was remarkably consistent, with only the frequency extremes standing out for criticism. The bump in the bottom, while suggesting that the RS2000 yielded more bass than it really could, produced a slight lumpiness, too underdamped for modern bass of the synthetic variety, for example. When playing CDs from the Blow Monkeys, certain heavy metal acts, and most modern dance/funk performers, this loss of precision took away the edge which is part and parcel of contemporary studio issue. On acoustic material, the effect was far less obtrusive – a reminder that Infinity main-man A Nudell finds non-classical to be one of 20th Century man's most invidious perversions.

The midrange and treble – once you decide for or against the grilles –

are clear and detailed, with few rough edges to remind you that this is, after all, a very inexpensive design. On the most demanding of vocals, Ronstadt backed by Riddle, for example, the Infinities conveyed the right amount of texture as well as the vocal power. (Ronstadt's voice can be as muscular as the material requires.)

When listening at reasonable levels, I could not detect any squashing of the dynamics or break-up which would indicate the speakers' limitations. Coupled with the RS2000s' ability to work well even at background levels, I'd have to say that these speakers are the answer to an impoverished headroom fanatic's prayers.

I'm not yet ready to give up the LS3/5As, despite their failure to come anywhere near the Infinities in terms of headroom, maximum SPLs, or bass information. Why? Because those criteria don't impress me as much – at this price point – as absolute refinement, which the LS3/5A has in abundance. On the other hand, the most oft-cited complaints people have about budget designs are the limitations traditionally associated with size; the usual partnering equipment rarely demands transducers of utter refinement. For extracting the most out of affordable amplifiers – no matter what the claims about current yield – I'd find these hard to beat. Add to that the ability to sound so much bigger than they really are, and you can't help but regard the RS2000 as exotica for those of limited budgets or limited space. ●

MANUFACTURER'S SPECIFICATION	INFINITY RS2000
Bass driver	6.5in polypropylene
Tweeter	35mm Polycell dome
Crossover	4500Hz
Sensitivity	89dB @ 1W, 1m
Power rating	15-75W
Nominal impedance	6 ohms
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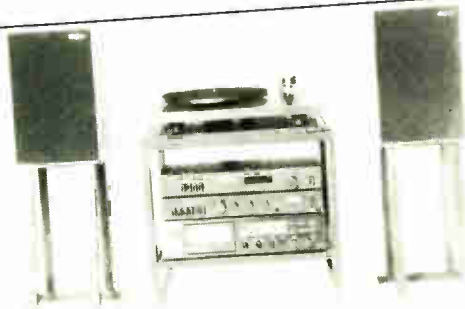
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**THE SPECIALISTS**

## Telarc International

AT A RECENT lunch-party, kindly hosted by Conifer, journalists were able to meet Jack Renner, founder of the Telarc label. An able trumpeter, he played both jazz and symphonic music; having secured a degree at Ohio State University he began teaching music. But he was keenly interested in recording techniques and, starting at the bottom, he began taping school and church groups. Then his reputation brought approaches from professionals, eg, members of the Cleveland Orchestra, who wanted to make what Renner calls 'vanity records': discs to show their prowess in solo or small ensemble work. The records he had cut from such material were worth sending to the American magazines for review, and marketing in a small way. His Advent Records earned high marks for sound.

By 1971 Renner was working with Robert Woods, and they shared the ambition to capture top-class performances by major artists, that would be sonically thrilling too. In 1977 Telarc was set up to do just that. By then Lorin Maazel was working in Cleveland. He was approached and the suggestion made that he should conduct for a direct-to-disc album. Renner was asked to set up a cutting lathe for the maestro, to see just how it worked. Trying to conceal reactions to the mental arithmetic that was going on in his head, Renner said yes. He now thinks that the end result was pretty awful, for technical reasons, but an impression was made.

The way to go seemed to be as an audiophile label, at first, and the arrival of digital recording led to the premiere US digital production (1978), featuring the Cleveland Winds under Frederick Fennell. Renner was a devotee of Mercury sound, and with the stunning qualities of the Eastmann wind records in mind he called up Fennell, who was delighted to be asked to record once more. The first orchestral recording, with the Atlanta SO under Robert Shaw (Toscanini's long-time NBC chorus director), was followed by the Maazel/Cleveland *Pictures at an Exhibition* within a couple of months. But probably - in this country at any rate - it was Tchaikovsky's *1812*, made at Cincinnati, that put the name Telarc into the minds of hi-fi enthusiasts. Here was an LP with microgrooves like plough furrows, levels to set your electrostatics arcing, and something to make owners of moving-magnet pickups recover pride, when most fashionable moving-coils leapt off the record as cannon and bells rolled around the room.

Since then, Telarc productions have achieved the more serious recognition warranted (though in Europe the tag 'audiophile record' has tended to stick), with a roster including artists like Serkin, Ozawa, Mackerras, Previn, Slatkin. Renner and Woods have remained personally involved at all stages of quality control, listening to masters, checking pressing standards. Now the demand for CDs has reached proportions where for the latest releases it would not be cost-effective to run parallel LP copies.

Renner still favours three wide-spaced microphones across the front of the orchestra; in some difficult halls one or two spot-mics are set up, and perhaps one placed in the auditorium to capture ambience. Like all producers nowadays, he is experiencing difficulties in locating and booking quiet venues: at Croydon's Fairfield Hall, last year, they found the stage was directly over the restaurant kitchens, and the tinkling of spoons on saucers was filtering through. Tracking down a noisy fan exhaust also wasted precious session time. . .

This year Telarc will undertake a new recording every fortnight. James Mallinson is now

acting both as producer and as Artists & Repertoire consultant to the Corporation (conversely you'll find Renner named as engineer on some of the CBS Boston and Berlin Mallinson projects). Renner is constantly searching for improved sound. Initially a 'cable sceptic' he was convinced by a demonstration set up by AJ van den Hul at one session, and now Monster cable is used throughout. In this country, mixing equipment modified by Tony Faulkner is generally to be seen, but when we met, Renner had just been auditioning a new and impressive digital setup. They are particularly proud to be associated with André Previn - fingers crossed for the forthcoming Walton 1 remake - and Charles Mackerras. We could do with more Prague Mozart!

## Matt Haimovitz & Emerson Qt

Sixteen year old Israeli born Matt Haimovitz, discovered at California six years ago by Perlman, who introduced him to Leonard Rose, will record exclusively for DG. His contract includes concertos by Lalo, Saint-Saens, Haydn, and Boccherini, popular chamber works by Schumann and Schubert. Now studying with Yo-Yo Ma, Haimovitz started playing at five; he has on loan Casals's Matteo Goffriller instrument.

Making their debut at this year's Salzburg Festival, the Emerson String Quartet was



formed a decade ago. They take their name from the American philosopher Ralph Emerson; the two violinists alternate as leader. For DG they will record a Bartok cycle, *Death and the Maiden*, the Mozart *Hunt* and Haydn *Emperor* quartets, and Beethoven's Op.95.

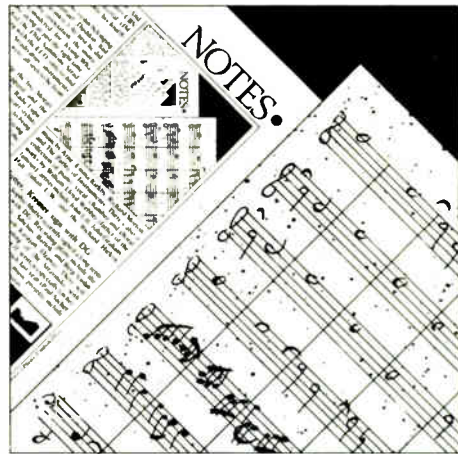
## Conductors

Simon Rattle has extended his CBSO contract to August 1991; the Arts Council and City of Birmingham are committed to fund the first phase of the Orchestra's development plan.

Speaking of 'joyfully rededicating us all to that love of music we have shared since 1966', Leonard Bernstein has accepted presidency of the LSO (previous Presidents include Karl Böhm, Bliss, Walton). His next concert with them will not be until October '88. John Mauceri will conduct the LSO's August '88 concert celebrating Bernstein's 70th birthday. Tilson Thomas has been appointed to succeed Claudio Abbado as Principal Conductor, from September 1988.

## Nimbus Records Award

Nimbus Records have won the Queen's Award for Technology, in recognition of pioneering work (under Gerald Reynolds and Dr Jonathan Halliday) in laser mastering. The systems developed by Nimbus will give a lead in consistency and cost-effectiveness. Currently producing 28 million CDs a year, they are also expanding their own catalogue: recent projects include recordings by the LSO under Frühbeck



## CHRISTOPHER BREUNIG

and Rozhdestvensky. Menuhin, Cherkassky, and Perlemuter will be represented in future Nimbus releases.

## G&S videos

AMT Video Gems are releasing twelve Gilbert & Sullivan opera productions, the *Savoy Series*, on 11 VHS videos at £9.99 each. Casts include Keith Michell, Frankie Howerd, Eric Shilling, Vincent Price, Joel Gray; with the LSO and Ambrosian Opera Chorus under Alexander Faris. But there will only be one CD/chrome cassette 'Best Of' selection.

## Burnett James

Known to his friends as 'BJ', David Burnett James, record critic and author of many books on music, died early in April at the age of 67. He intended to pursue a naval career, but a disabling attack of polio while at the Nautical College Pangbourne radically changed the course of his life - which, he once said, was touched and illuminated by music at every point.

The whole of his adult life was spent in an iron lung or a wheelchair, but this disability did not stop his prodigious written output, ranging from books on Beethoven, Brahms, Wagner, Falla, Ravel, Sibelius, and Mahler, as well as acting as Assistant Editor of *Gramophone Record Review*, then *Audio Record Review*, leading to *HFN/RR* and, briefly, *Practical Hi-Fi*. His other books included *Hi-Fi for Pleasure*, and two autobiographical texts: *Living Forwards*, and *An Adventure in Music*. His musical interests included jazz, and he collaborated with Peter Gammond on a four-volume series *Music on Record*.

His handicap meant that he learnt much of his music from recordings, and he always acknowledged the influence of the 'gramophone' and radio.

Donald Aldous

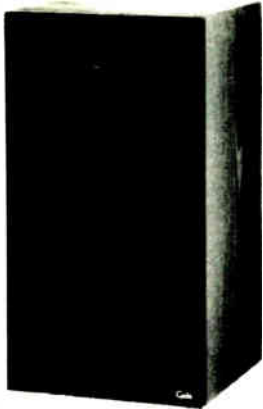
'Ah! Toscanini. Review it today, listen to it tomorrow.' The joke, which he would deliver impishly, is pertinent because it was just what BJ would not do. He approached the most predictable of records with the attitude 'what's the significance of this - am I persuaded by this interpretation?' Around 1970 he wrote a monthly column on some topic: *Musical Chairs*. These articles were full of common sense, thought provoking, and colourful; BJ called himself a 'sea dog manque' and if he was a naval gazer he certainly was no navel gazer. He took on more than the lion's share of the *Music on Record* feature, but was never possessive about repertoire. He didn't allow that wheelchair to get in the way of his determination to socialize, and his continuing inquisitiveness and cheerful, practical manner were exemplars. CB ●

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- 89 Sonatas & Partitas BWV 1001-06 (Shumsky)
- 89 Organ works (Isour)
- BAX**  
91 Piano Trio in B-flat (Borodin Trio)
- BEETHOVEN**  
91 Piano Trio Op. 1-1, etc (Mondrian) ●  
89 Christ on Mount of Olives (Baudo) ●
- BENNETT**  
91 Piano Concerto 4, etc (Binns-Wetton) ●
- BOUGHTON**  
91 Immortal Hour (Melville)
- BRAHMS**  
91 Piano Quintet (Qt Italiano/Pollini)  
91 Violin Sonatas (Mordkovich/Oppitz) ●
- BRIDGE**  
91 Piano Trio 2 (Borodin Trio)
- BRITTEN**  
91 Piano/Violin Concertos (Richter Lubotsky/Britten) ●  
91 Cello Suites (Rostropovich) ●  
91 Phaedra, etc (various) ●  
91 Folksongs, etc (Kenny/Watkinson/Crone)
- BRUCKNER**  
92 Symphony 2 (Karajan)  
92 Symphony 8 (Karajan)
- BURGON**  
92 Cathedral Music (Thurlow)
- CAMPRA**  
92 Tancered excerpts (Zaffini)  
92 French Cantatas (various)  
92 Arion, etc (Christie)
- CHARPENTIER**  
92 Maunday Thursday Lessons (Jacobs)  
92 Andromède Circé, etc (Medlam)
- CHERUBINI**  
92 Medea (Gardelli)
- COATES**  
93 Songs (Rayner Cook/Terroni) ●
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93 Orchestral works (Beecham)  
93 Violin Sonatas 1-3 (Wilkomirski/Garvey)
- DURUFLE**  
93 Requiem, etc (Best)
- DVORAK**  
93 Serenade in E, etc (Camerata Bern)
- ELGAR**  
93 Music Makers, etc (Hickox)  
101 Romance (Lloyd Webber/Mackerras)  
93 String Quartet, etc (Chilingirian Qt)
- FUCIK**  
93 Orchestral pieces (Neumann)
- GLAZUNOV**  
93 Raymonda suite, etc (Butt) ●
- GLUCK**  
94 Alexste (Baudo)
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94 Piano Concerto (Ousset/Marriner)
- HANDEL**  
94 Tamerlano (Gardiner)  
94 Rodelina (Bonyngé)  
94 Silete venti, etc (Pinnock)
- HAYDN**  
94 Symphonies 22/24/30 (Shepherd)  
94 Symphonies 88 & 104 (Thomas)  
91 Trio in A (Mondrian Trio) ●  
94 Nelson Mass (Willcocks)  
94 Heiligmesse, etc (Guest)  
95 Stabat Mater (Helaty)
- HERBERT**  
101 Cello Concerto 2 (Lloyd Webber/Mackerras)
- HUMMEL**  
95 Sonata Op. 50, etc (Holmes/Burnett)
- LEONCAVALLO**  
95 I Pagliacci (Muti) ●
- LISZT**  
95 Piano Sonata, etc (Ousset)  
89 Dante Sonata (Douglas)  
95 Lieder (Fasshaender/Gage)
- MACDOWELL**  
95 Piano Concertos 1 & 2 (Amato/Freeman)

- MAHLER**  
95 Symphony 4 (Inbal)  
95 Symphony 5 (Inbal)
- MASCAGNI**  
95 Cavalleria Rusticana (Muti) ●
- MENDELSSOHN**  
96 Symphony 3, etc (Maag)
- MOZART**  
94 Piano Concerto 1 (Ousset/Marriner)  
96 Violin Concertos K269/271a (Kantorow/Hager)  
96 Violin Concertos K216 219 (Zukerman) ●
- 96 Horn Concertos (Williams/Schneider)  
96 Divertimento K563, etc (Grumiaux Trio)
- 96 Divertimenti (BPO Winds) ●  
96 Wind Serenades K.375/388 (Jarvi)  
96 Clarinet Quintet, etc (Zahradnik et al)  
96 Horn Quintet, etc (Mannheimer Qt et al)
- 100 Dissonance Quartet K465 (Berg Qt)  
97 Piano Trios K502/564 (London F-pno Trio)
- 97 Lieder (Mathis/Engel)
- SUFFTAT**  
97 Sonata 5, etc (Medlam)
- MUSSORGSKY**  
89 Pictures at an Exhibition (Douglas)
- ORFF**  
97 Carmina Burana (Hickox)
- PRAETORIUS**  
97 Christmas Music (Hill)
- PROKOFIEV**  
97 Peter & Wolf, etc (Prokofiev/Jarvi)
- RACHMANINOV**  
97 Piano works (Browning)
- RAMEAU**  
97 Castor et Pollux (Harnoncourt)
- SAINT-SAENS**  
97 Symphony 3, etc (Ozawa) ●
- SAMMARTINI**  
99 Concerti & Sinfonie (Banchini)
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99 Sonatas (Schiff)
- 99 Sonatas (Katin)
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- SCHUBERT**  
99 C-major Quintet (Brandis Qt/Baumann)  
99 Piano Trio in B-flat, etc (various)  
99 Piano Trio in E-flat, etc (various)  
99 Wanderer Fantasy, etc (Pollini)  
99 Piano Sonatas D845/894 (Lupu)  
99 Lieder (Hendricks/Lupu)
- SCHUMANN**  
100 Piano Quintet Op. 44 (Berg Qt/Entremont)
- 100 Carnival, etc (Bolet)
- SIBELIUS**  
100 Symphonies 3 & 7 (Rattle)  
100 Symphonies 3-6 (Gibson)  
100 Symphonies 5 & 7 (Davis) ●
- SPOHR**  
100 Notturmo Op. 34, etc (Cons Classicum) ●

- STAINER**  
100 The Crucifixion (Rose) ●
- STOCKHAUSEN**  
100 Stimmung (Rose)
- STRAUSS FAMILY**  
101 Carnival in Venice (Boskovsky)
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101 Die Fledermaus (Askermann)
- R STRAUSS**  
95 Lieder (Fasshaender/Gage)
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101 Firebird, etc (Schwarz)
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101 Kleider machen Leute (Mund)
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## BEST OF THE MONTH

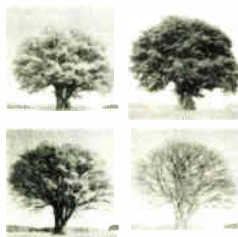
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Recording: Performance		
A	1	Very Good
B	2	Good
C	3	Moderate
D	4	Poor
H		Historical

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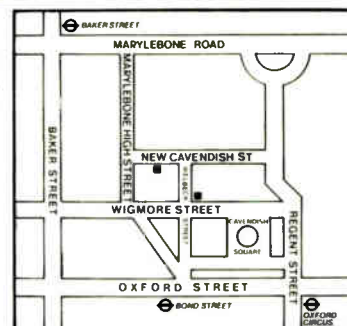


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## RECORD OF THE MONTH

**BARRY DOUGLAS**

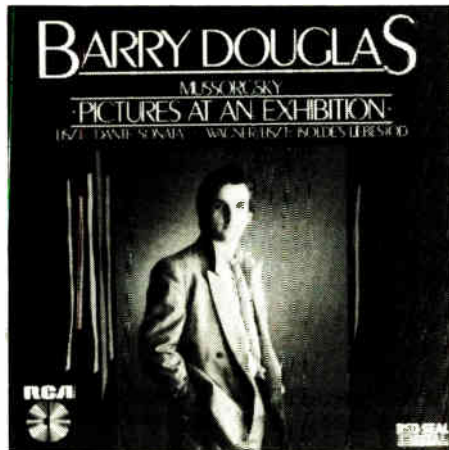
**MUSSORGSKY: Pictures at an Exhibition/  
LISZT: Dante Sonata/WAGNER (arr. Liszt):  
Tristan & Isolde - Liebestod**  
*Barry Douglas (pno)*  
RCA RD 85931 (58m 59s) digital (LP: RL 85931,  
MC: RK 85931)

It was with Mussorgsky's *Pictures*, and in Liszt transcriptions, that Alfred Brendel's recording career began, with Vox. It will be interesting to chart Douglas's progress, and his first recital disc for RCA, if by no means 'definitive' in the two major works, is full of considered, deeply felt, and musicianly things.

The Wagner 'Liebestod' is perhaps most impressive of all. Douglas juggles and balances the characters of both composers: the grandeur of Wagner tinged with Liszt's gloomier bias. Control of dynamics and timing of the melodic line is quite masterly, and so is the interweaving of subsidiary strands. As Douglas begins to voice the music, after Liszt's bald introduction, or when, after the last of the tremolandi, it is as though a spirit had passed over, like some isolated puff of black cloud driven in a grey sky, I was conscious that the responses he was evoking were as powerful as when I first heard Furtwängler concluding the opera, in his complete recording.

In the *Dante Sonata* Douglas has a natural way with Liszt's declamatory figures and symmetries: an easy confidence with the music, it seems. The arpeggios near the opening are very beautiful, and in the quiet passages concentration is always held. I thought the first climax was given just too much 'time' for its aesthetic, rather than virtuosic, demands; and with several hearings I still find the high-register tremolandi before the apotheosis a matter of fact. Does the coda really come off as the summation of the piece? I did not think so.

In *Pictures* the bright, quick step of the first Promenade arouses keen expectations, 2 is elegant and refined in manner, in 3 he doesn't



emulate Richter's extraordinary fast tempo; in 4 Douglas suggests, in his measured tread, a rapt absorption still in something just seen. I like his characterisation of these links, and I see Douglas claims them as the key to the work, rather than the *Pictures* themselves.

There are some things here which may not wear too well, in repeated listening, effective though they might have proved in live concerts: the rubato in the 'Unhatched Chicks' and 'Limoges Market', or the episodic treatment of 'Tuileries' (however much one enjoys the playful streams of notes here), and the oddly accented two chords at the beginning of 'Baba Yaga' suggest contrivance when set against the poetry of 'Catacombs' - Douglas marvellously effective in this near-static piece - and the 'Old Castle', where the mournful song is like an echo in the valleys of memory, rather than actual. His 'Gnomus', too, is vividly suggestive, grinning and misshapen.

Douglas is disappointing in a prosaic description of the two Jews (where Lazar Berman gives a tragic vision of the plight of the oppressed),

and he rather misses the savagery of 'Baba Yaga' and the monumentalism of the 'Great Gate' - good though he is in the hymn-like processional interlude. Horowitz is unsurpassed in his macabre and barbaric characterisation of the former; Ousset has the weight, the accuracy, and the measure of the latter - though her 'Hut on Fowl's Legs' misses its mark completely. However, in failing to electrify us in the finale, he has a distinguished precedent in Richter's famous 1958 Sofia live performance: most treasurable for the nationalistic song he found in 'Bydlo', which he took at an unexpectedly rapid speed. Douglas is imposing; his heavy chordal attack is in the Berman manner. (Berman's finale is a messy response to the technical demands.) I should add that Douglas does manage the final peroration with considerable immediacy and concentration.

The recorded sound encompasses the wide dynamic range of these pieces very effectively; the piano image is rather wide and I would have liked a *slightly* different presentation of the image, in this Henry Wood Hall production - the sound seems to cut off sharply around the edges. But it is always comfortable to listen to Douglas's Hamburg Steinway and, with careful control of levels, resisting a temptation to set them high, a nice sense of the instrument set a fair distance away can be secured. The mics pick up quite a few thumps from either the pedal or the pianist's stamping.

In RCA's cover shot he has his jacket collar carefully turned up, a red tie knot eased down from the open top button: I should have thought Barry Douglas was too serious an artist to warrant this kind of marketing image!

To sum up: this is pianism of a rather self-conscious kind, occasionally rather cautious-sounding (as ES remarked of his Tchaikovsky Concerto, in February - almost *too* responsible) but, on the other hand, weighting of sonorities, the considered dynamics and musicianly insights for most of the time make this a recital of estimable qualities. [A:1\*/2]

**Christopher Breunig**

**JS BACH: 3 Sonatas for viola da gamba & harpsichord BWV1027-1029**  
*Laurence Dreyfus (gba)/Ketil Haugsand (hpd)*  
Simax PCS 1024 (40m 54s) (Conifer)

This record features two well-established young baroque specialist performers in excellent form, playing what the commentary persuasively declares to be 'the best German chamber-music of the early 18th-century'. The venture is successful because of the care with which it has been undertaken, and as a result this is easily our best CD of this music; however, there are strong rivals on LP from Wieland Kuijken and Gustav Leonhardt and from August Wenzinger and Eduard Müller (the latter rather old now, but still a favourite of some connoisseurs).

The recording has been undertaken with what I would have thought a needlessly elaborate microphone arrangement. What we gain in distinctness, we lose in blended sonorities - something of which eighteenth-century musicians were acutely conscious. When players sound so very good and have such refined sensitivity, it seems a pity that their own natural musicianship should have been thrown to the winds in this way. All the same, well worth getting, and among the best of Bach CDs yet. [B:1\*] **Stephen Daw**

**JS BACH: Sonatas & Partitas, BWV 1001-05**  
*Oscar Shumsky (vln)*  
ASV CD DCD 454 (2CDs: 146m 53s) © 1983

The LPs were reviewed by me (Nov '83 p123) rather lukewarmly, I fear; the actual recordings, the products of a lifetime's experience as a child prodigy performer and an outstanding teacher in

the USA, had been made under the auspices of the American Musical Heritage Society.

Returning to the performances, I cannot see why I was so unimpressed. Shumsky is extremely good, both technically and interpretatively; there are really inspired passages in each of the works, almost in every movement, and nothing is as untidy or ungainly as I have frequently had to suffer from less able performers of this music. The interpretative instinct reminds me of that of Heinrich Schiff in the Cello Suites, but it just lacks that artist's sense of life and rhythm; for me, Shumsky pauses and hesitates too often, without managing to catch up momentum quite soon enough. But the playing is very good; I think the best in these works on a modern violin on record.

The performing is matched by very good, warmly direct sound; it was very agreeable on LP, I recall, and is perhaps even better on CD. This is really committed, varied fiddling, put to excellent use in unsurpassable music; ASV have again placed us in their debt. [A:1] **Stephen Daw**

**JS BACH: Toccatas and Fugues in d, BWV565 □ in C, BWV564 □ in F, BWV540 □ in d, BWV538 'Dorian' □ Fantasia & Fugue in g, BWV542**  
*André Isoir (org)*  
Calliope CAL 9708 (66m 30s)

André Isoir plays the complete Toccatas (if one omits the one in E major BWV 566 on the grounds that it is indeed a *Prelude* and Fugue) and the magnificent *Fantasia* in G-minor on the excellent Ahrend organ of Saint-Lambert, Aurich - a first-class modern instrument built on classical lines. Isoir is no stranger to Bach or to the recording context, and his sheer profes-

sionalism is impressive to me, as ever. I am also pleased by the warm but uncluttered acoustic of the church, which is well conveyed in a recording which nevertheless strikes me as on the aggressive side, but only marginally too 'immediate'.

Isoir plays these wonderful works - flights of fancy, which no doubt stemmed from hours of extemporisation and improvement by the composer - with great dedication, but maybe without sufficient tenderness or flexibility: there is something to be said for a classical or an architectural approach to such authoritatively structured works as the F major Toccata or the G-minor *Fantasia*, but in the *Toccata, Adagio and Fugue* in C or 'the' Toccata in D-minor there is a case for a less strict approach to rhythm and articulation. Impressive playing, nevertheless. [B:1/2] **Stephen Daw**

**BEETHOVEN: Christ on the Mount of Olives**  
*Monica Pick-Hieronimi (sop)/James Anderson (ten)/Victor von Halem (bass)/Ch & Orch Nat de Lyon/Baudo*  
Harmonia Mundi HMC 5181 ● (CD: HMC 905181, MC: 405181)

Although nominally a religious oratorio, this rarely performed work is usually seen as a transitional piece pointing towards *Fidelio*, which it certainly anticipates with its operatic rather than liturgical style. The text (given only in German here) is based on the Gospel story between Christ's arrest and his crucifixion, but apart from the sombre orchestral introduction and a few brief exalted moments elsewhere, the work seems more appropriate to theatre than to church, a view echoed in the style of this

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recording.

Serge Baudo offers a pleasantly convincing performance. His orchestra plays in a smoothly controlled manner (touchingly apt timpani especially caught my ear), but while there is a gratifyingly full bass-line the overall orchestral sound is slightly dim-and-distant. In contrast, the choral forces – representing soldiers, disciples and angels – are convincingly presented, both spatially and dynamically, and they sing impressively. The three vocal soloists are set slightly forward, but apart from the soprano, whose fortissimos sometimes verge onto edginess and who is perhaps allowed to become a wee bit *too* operatically assertive for an angel (albeit a Seraph), they seem acceptably balanced. The small part for Peter (bass) is pleasingly sung, although Jesus is not always as convincingly on pitch as one might reasonably expect from the son of God. But this only goes to show that tenors are the sons of men, and can't always cope divinely with earthly scores. Overall, however, a good if not perfect performance and recording of an intriguing Beethoven byway. [B:2]

John Crabbe

**BEETHOVEN: Piano Trio Op.1:1** □ **Kakadu Variations/HAYDN: Trio in A Mondrian Trio**  
Merlin MRF 86032 ●

This is the Mondrian Trio's first LP and, on the strength of it and their work in concert and for the BBC, a very bright future must be forecast for them. Of the playing in general, little needs to be said other than that it is technically at ease with the interpretation of the music, and that it is altogether musicianly: phrasing is elegant and natural, there is an amiable give-and-take in the balance of the instruments, and the players sound as if they are enjoying the wit and beauty of the composers' invention. Their readings have taken into account the datings of these works so that, eg, the Beethoven Op.1:1 is not overloaded with expressive intensity inappropriate to the work's immaturity, yet its natural high spirits and, especially in the *Adagio cantabile*, its simple melodic charm are sensitively realised. In this work the Trio miss out the last movement repeat, but the performance must still rate as fully recommendable. The Haydn does not appear to be otherwise available on disc.

The recording is brilliantly vivid and immediate, yet it has one or two strange anomalies: the group is staged predominantly right of centre, for no apparent reason, and there are a fair number of instances when the violin and cello appear to exchange places. Despite this, the general quality of both recording and performance demand warm approbation. [A\*/C:1\*]

Doug Hammond

**STERNDALE BENNETT: Piano Concerto in f** □ **Symphony in g**  
Malcolm Binns (pno)/MKCO/Wetton  
Milton Keynes Music Series MKM 861 ● digital

Very few of Sterndale Bennett's works are available on disc, so this issue is especially welcome, even though the Symphony is perhaps not the sort of work that many now would wish to listen to repeatedly. The charm and vivacity of the Fourth Piano Concerto make up for what the Symphony lacks and it sounds particularly well in this scintillating performance from Malcolm Binns. The Milton Keynes Chamber Orchestra gives more to this work and although the strings sound a little scrawny on occasions, they are generally adequate to the needs of the music. The recording suggests a very enclosed setting for the orchestra even though the piano sound is clear, and generally the lack of an extended HF range is a hindrance to the effectiveness of this issue. Nevertheless, works by a composer who was held in high esteem by Mendelssohn, and a number of his knowledgeable contemporaries, should if at all possible be available on disc for the pleasure and edification of all. [C/D:1/3]

Doug Hammond

**BOUGHTON: The Immortal Hour**

Anne Dawson, Valery Hill (sops)/Patricia Taylor (con)/Maldwyn Davies (ten)/David Wilson-Johnson (bar)/Roger Bryson (bass-bar)/Roderick Kennedy (bass)/Geoffrey Mitchell Ch/ECO/Melville

Hyperion CDA 66101/2 (2CDs, 124m 28s) digital  
© 1984

One of the best vinyl issues of 1984 (March p89), this *Immortal Hour* has transferred to CD with cooler, more stable sound – and all of Act I on one disc – but with a spot more edge and a slightly less involving presence. Swings and roundabouts, but still excellent. [A:1\*]

Doug Hammond

**BRAHMS: 3 Violin Sonatas**

Lydia Mordkovich (vln)/Gerhard Oppitz (pno)  
Chandos ABRD 1227 ● digital (CD: CHAN 8517, MC: ABTD 1227)

In the hands of these two equally authoritative artists who, nevertheless, interact with unnerving consistency of intention and strength of conviction, these sonatas receive some of the most impassioned accounts I have heard. In the seemingly confident A major Sonata, intimations of powerful but uncertain emotions are constantly breaking through its self-assured exterior, giving rare insights into the darker moods of this work. Although Mordkovich is not always perfect in her execution here, that is irrelevant when weighed against the absolute commitment. The turbulent outer movements similarly dominate the D-minor Sonata, the thrusting interplay of themes and emotions creating a restless urgency. For me though, the most beautiful moments are to be had in the intimate G major; and even here Mordkovich, with her rich powerful tone, searches out a more bitter-sweet flavour than is usually tasted. The halting, almost breathless shaping of the first subject, throughout the exposition and development of (i), is deeply moving and skilfully counterbalanced by an urgency in the pull of tempo at its recapitulation. The third movement, again, echoes this hesitancy most seductively.

If only the recording had been kinder, this could have been a very special issue indeed. As it is, the sound is awash in the heavy reverberance of All Saints' Tooting, and the valuable rests in the main themes of both (i) and (iii) in the 1st Sonata are filled out acoustically. Mordkovich's pizzicato in the *Vivace di più* of Sonata 2 is almost lost too, in the weight of resonance. The chief redeeming factor is a fine sense of presence which, in such wonderfully positive performances as these, must be counted as a blessing. [B/C:1\*]

Barbara Jahn

**BRAHMS: Piano Quintet, Op.34**

Maurizio Pollini (pno)/Quartetto Italiano  
DG 419 673-2 (43m 50s) © 1980

PT's qualms (August '80, p95) over the recorded quality of this production (curiously also reissued on Philips in '83) have been little dissipated by this AAD Compact Disc. There are many instances of fine, instinctive tempo shifts between all the performers, all the more convincing now that piano seems better balanced against the strings; but their placing and separation is still imprecise, the sound is dry, coarse and hollowly reverberant, and hiss is apparent in the opening bars of the Scherzo. This only serves to exacerbate the superficially serious interpretation given here: the opening, for example, is ponderous rather than dramatic, and there is no magic to the piano's *espressivo sotto voce* in (ii). We still need a well engineered and truly penetrative view of this demanding work. [B/C:2/3]

Barbara Jahn

**BRIDGE: Piano Trio 2/BAX: Piano Trio in B**

Borodin Trio  
Chandos CHAN 8495 (61m 12s) digital (LP:

ABRD 1205, MC: ABTD 1205)

The catalogue is not exactly brimful of recordings of these two attractive works, and these lively readings capture the implications of each so well that a wholehearted welcome is in order here. The Piano Trio was Bax's last chamber piece, completed in 1946, and although it does not match some of his earlier chamber music for drive and inventiveness, it does contain many appealing and well-worked ideas that justify a wider dissemination. The Bridge Trio, completed in 1929, was not immediately popular, being in the more modern, austere style that Bridge developed gradually after the First World War; yet with our present knowledge of continental developments in music at that time, it does not now seem forbidding, and indeed is so rich in poignant ideas that it must surely acquire a new popularity with this persuasive rendition. The performances are not perfect, having moments of tentative intonation and loose ensemble, and the recording has some weaker features – a touch of edge here and there, and unnecessarily close mixing – yet these demerits are not pressingly significant when set alongside the best qualities of this coupling. [A/B:1\*/1]

Doug Hammond

**BRITTEN: 4 Burns Songs** □ **Folksong Arrangements** □ **A Charm of Lullabies**

Yvonne Kenny (sop)/Carolyn Watkinson (con)/Tan Crone (pno)  
Etcetera KTC 1046 (46m 16s) digital

We may not be used to female voices in performances of these ten folksong arrangements, but when they are as fine as those on this record they are an enhancement to the music. Yvonne Kenny's bright but warm soprano is so affable, and her presentation so uncomplicated, that yet another amble through the Ash Grove is certainly no chore. Her rendition of four Burns songs from *A Birthday Hansel* (here with piano) seems equally easy but is as accomplished. Tan Crone provides subtle but supportive accompaniment throughout and, in contrast to the close mixing of the singer, is set at a subordinating distance that balances well in the circumstances. Plenty of time has been allowed for natural decay of the piano's final notes at the end of each song but, unfortunately, the 7s silence before the change to contralto for *A Charm of Lullabies* permits little time for readjustment. However, with so firm a projection of the menacing tone of Blake's *Cradle Song*, and the poignantly tragic *Sephestia's Lullaby*, with its 'comic-relief' type setting between each desperate refrain, the bitter-sweet mood of the first four lullabies is soon established. Only *The Nurse's Song* has conventional lullaby lyrics, set in a movingly simple structure, so reminiscent of 'This ae nighte' from the *Serenade*.

Within a warmly sustaining resonance, a sense of recital presence has been created, but the close mixing of each singer does not always handle the extremes of volume clearly, and also tends to emphasise sibilants. My major criticism however (if it can be considered to be one) is that 46m is not enough of this fine issue. [A:1\*]

Barbara Jahn

**BRITTEN: Piano Concerto** □ **Violin Concerto**

Sviatoslav Richter (pno)/Mark Lubotsky (vln)/ECO/Britten  
Decca 417 308-1 ● (MC: 417 308-4) © 1971

**BRITTEN: Cello Suites Op.72 & 80**

Mstislav Rostropovich (vlc)  
Decca 417 309-1 ● (MC: 417 309-4) © 1969

**BRITTEN: Phaedra** □ **The Poet's Echo** □ **Hölderlin Fragments** □ **Songs and Proverbs of William Blake**

Galina Vishnevskaya (sop)/Janet Baker (m-sop)/Peter Pears (ten)/Dietrich Fischer-Dieskau (bar)/Benjamin Britten (pno)/Mstislav Rostropovich

(pno)/ECO/Bedford

Decca 417 313-1 ● (MC: 417 313-4) © 1963, '69', '77

The series of mostly definitive performances of Britten's works being reissued on the 'London Enterprise' label continues apace with these three glorious discs. Richter's lively reading of the Piano Concerto has not been surpassed on record, though Gillian Lin on Chandos has the blessing of a more expansive recording, without the fussy orchestral texture and dulled edge of Decca's sound. Mark Lubotsky is sweet-toned and adroit in the Violin Concerto, not as blatantly powerful as Ida Haendel with the Bournemouth SO/Berglund (EMI), but still capable of conveying the strength of the work along with its more subtle qualities. With Britten himself conducting both works, this coupling inevitably constitutes essential listening. [B/C:1\*]

Equally essential are Rostropovich's marvellous readings of the first two Cello Suites. The solidity of his timbre, which some have criticised for being hard, ideally suits these works and his total absorption in the music is directly conveyed to the listener. The close miking, resonant acoustic, and HF limitation give a boxed feel to the recording but the performances are undaunted. [C:1\*]

In a similar fashion, the various performances coupled on the third of these discs are all outstanding, but for the most part they have to penetrate less than ideal recordings. Distortion is noticeable in louder sections of the Blake Songs and Hölderlin Fragments, and in the latter the thick piano sound is annoying; the switch between these make the ears feel as though they have been pulled inside-out! Even the latest recording, *Phaedra*, has not transferred with its original clarity. Nevertheless, any lover of Britten's music who still does not have these performances on disc could be recommended to buy. [B/D:1\*/1] **Doug Hammond**

#### BRUCKNER: Symphony 2

BPO/Karajan

DG 415 988-2 (60m 29s) digital © 1982

It is splendid to have this on CD, where it makes an even more vivid impact, from clear, lean bass line to sparkling upper woodwinds, from silences to weighty climaxes. Cuts in the (Nowak) score are inconsistently handled, but the burning conviction of the performance is matched in a digital recording that is both grand and intimate. [A:1] **Peter Branscombe**

#### BRUCKNER: Symphony 8/WAGNER: Siegfried Idyll

BPO/Karajan

DG 419 196-2 (2CDs, 102m 02s) © 1976-7

This recording of Bruckner's Eighth (Haas edition) has been with us for eleven years. It was superb on LP, and it is even finer on CD, where it has picked up the valuable bonus of the *Siegfried Idyll*. This was originally the filler to Karajan's 1977 Bruckner 7, and somewhat disappointing I then found it. On CD it sounds less edgy and, more important, the DG engineers have now found and inserted in their proper place bars 125-8, which, hardly anyone noted, were simply left out from the LP disc! But back to the Bruckner: this seems to me the finest Eighth available, indeed the finest ever recorded, with wonderful detail, yet above that an unerring sense of structure and movement. The BPO is in superb form, and the remastered sound has richness without excessive warmth, clarity without dryness, a wonderfully broad dynamic spectrum. Majestic indeed, and stark too, for all the incandescence of the playing. [A/A\*:1/1\*] **Peter Branscombe**

BURGON: Cathedral Music – including *Nunc Dimittis*, *Short Mass*, *At the Round Earth's imagined corners*

Guy Willatt/Jacob Hamon (trbs)/Michael Laird (trpt)/Jeremy Suter (org)/Chichester Cathedral Ch/Thurlow

Hyperion CDA 66123 (CD, 45m 10s) digital © 1984

All the pieces here prove as readily accessible as the now famous 'Brideshead Revisited' music and the *Nunc Dimittis* of 'Tinker, Tailor, Soldier, Spy', for Geoffrey Burgon is a master at creating atmosphere and a distinctive and immediate colour-world. Even his sacred pieces unfold with an unexpected warmth and sensuality; mystery, other-worldliness, and a wonderful sense of spaciousness come with treble lines that soar above tight central harmonies, as in the opening line, 'My Love's the mountain range' of 'But have been found again'. Here, and in the 'Two Hymns to Mary', the choir proves itself to be as immaculate in diction and intonation when unaccompanied as when supported by organ. The two treble soloists are equally commendable, not least for their rare maturity of understanding, for whilst the opening staccato harmonies of Laudate Dominum suggest 'Verum est' from Orff's *Carmina Burana*, and the haunting build-up of dark tone-colours and chromatic 'discomfort' in 'This World From' are reminiscent of Gesualdo, Burgon's is still an individual, concise and craftsmanly style. Capturing the acoustical warmth of the venue to just the right degree, Hyperion successfully blend and separate vocal lines without loss of clarity. Were it not for the organ saturating the *forte* in 'This World From', an unqualified star would have been appropriate for this desirable disc. [A\*/A:1\*] **Barbara Jahn**

#### CAMPRA: Tancrede (excerpts)

Catherine Dussant (sop)/Jacques Bona (ten)/Armand Arapien (bass)/Vocal Ens Avignon/Ens Provence/Zaffini

Pierre Verany 786 111 (49m 34s)

#### CAMPRA: French Cantatas

Jacqueline Nicolas (sop)/Daniel Cuiller (vln)/Philippe Allain-Dupre (lt)/Jay Bernfeld (gamba)/Michel Chapuis (hpd)

Pierre Verany 786 101 (58m 43s)

Born in Aix-en-Provence in 1660, Andre Campa succeeded Charpentier at Notre Dame in the mid-1690s, only to resign promptly in 1700 to devote himself to the operas which brought him such fame. *Tancrede* was one such (enormously successful, it was revived five times) and, like Monteverdi's *Combattimento*, is based on one of the crusader episodes in Tasso's *Gerusalemme Liberata*. The present excerpts attempt to chart the essential drama (although Clorinda makes no appearance) yet the opera cannot but lose by this severe contraction. This said though, there is some splendid music here, from the rousing to the tragic, and all three soloists give solid, fairly dramatic performances – even if one rarely felt oneself carried into the action. The choir is altogether less assured, with the sopranos in particular showing distinct signs of discomfort in some of the high tessitura passages. Some of the instrumental playing is a little flat, too, and this coupled with the fact that there is little attempt to 'stage' the recording left me wanting a bit more excitement. Difficult too within the operatic framework to reconcile some of the changes of focus – from full choir with trumpets and drums at full stretch one moment, to heavily spotted solo harpsichord the next. [B:1/3].

The five *Cantatas*, like *Tancrede*, clearly show classical influences, and can on one level be seen as embryonic operas – or at least a way of the audiences of the time satisfying their demand for the *genre* on the cheap. *Daphné*, *Didon* and *Hebé* are all in the usual form, of a succession of recitative and *air* with limited instrumental contribution, whilst *Achille Oisif* has marginally more of the Lullian *ritornellos* about it. *Arion*, with an important part for flute, is also available, along with some of the *Cantatas* for two voices, from Jill Feldman and Les Arts Florissants on Harmonia Mundi and the approach of both

groups is similar. Obviously Jacqueline Nicolas carries the weight of the music, and her clear decisive voice is set in a naturally warm acoustic. Chamber-music in dimensions certainly, which allows the group an unforced balance, and a close enough setting to give a little added drive to the performance. [A:1] **Roger Bowen**

#### CAMPRA: Cantatas – Arion □ La Dispute de l'Amour et de l'Hymen □ Les Femmes □ Enée et Didon

Les Arts Florissants/Christie

Harmonia Mundi HMC 901238 (55m 06s) (LP: HMC 1238, MC: HMC 401238)

I remarked in the review of the LP (April '87 p95) that the limited instrumental and vocal forces make few strenuous demands on the recording, and the CD, not surprisingly, copes with equal ease. Apart from a slightly more focused image on CD, little to choose between the two, and the performances grow more appealing with acquaintance. [A:1\*] **Roger Bowen**

#### CHARPENTIER: Les Leçons de Ténèbres du Jeudy Saint

Concerto Vocale/Jacobs

Harmonia Mundi HMC 901006 (56m 05s) © 1978

These three lessons for Maundy Thursday form part of the large-scale *Neuf Leçons de Ténèbres*, all of which are deeply – one could say severely – devotional in nature. There is little here of the sophisticated gaiety of much of Charpentier's other religious works and this, coupled with the restricted scoring, makes it an issue for devotees. The recording too is restrained, placing one comfortably before the performers but within a slightly restricted and rather dry space. [A/B:1] **Roger Bowen**

#### CHARPENTIER: Incidental Music for 'Andromède' and 'Circé' □ Sonata à 8 □ Concert pour quatre parties de violes

London Baroque/Medlam

Harmonia Mundi HMC 901244 (61m 54s) (LP: HMC 1244, MC: HMC 401244)

The CD transfer is as disappointing sonically as the LP (reviewed April '87, p95), and in fact exaggerates the problems of the internal balance of the instrumental group I remarked upon, as well as emphasising the change of image between the *Sonata à 8* and the other tracks. Add some fuzziness and some aural confusion not found on the LP and you find an issue difficult to recommend other than for its fine playing. [C:1] **Roger Bowen**

#### CHERUBINI: Medea

Sass/Kalmár/Takács/Luchetti/Kováts/Hungarian RT Ch/Budapest SO/Gardelli

Hungaroton HCD 11904-05-2 (2CDs, 137m 02s)

Although copies of the LPs have been available in specialist shops since soon after the initial Hungarian release (1978), the recording does not seem to have been officially launched in Britain until now. With the Callas and Jones sets no longer available, Sylvia Sass has the field to herself – for truly, seldom is an opera so entirely dominated by its protagonist: from her skilfully delayed first entry, two-thirds of the way through Act I, she is never off the stage. Grateful as one is for a well-sung, finely played and conducted performance like this, more than adequately recorded, one cannot help regretting that once again a desperately corrupt version has been committed to disc. Cherubini's *Medée* is actually a French opéra-comique which, by consecutive votes of no confidence from Schubert's acquaintance Franz Lachner and then those responsible for the Italian première in 1909, has become an Italian opera, with recitatives in place of the brilliantly calculated

spoken dialogue.

That this performance makes so strong and favourable an impression is due to excellent teamwork. It is strongly cast, sensitively directed. So beautiful is Sylvia Sass's singing in Medea's tender moments, so powerful her projection as a woman scorned, that one can more easily overlook some of the squalid high notes and exaggerated touches. Veriano Luchetti's Jason shows up the tentative Italian of some of the Hungarians; he is forthright and stylish. Magda Kalmár is a tender Glauce, and the maids convey the false hopes of joy very well in the opening scene. Strong, dramatic choral singing and eloquent orchestral playing (at times over-recessed) generate real excitement – it's a superb score. Lamberto Gardelli is in his element; even more than Miss Sass he is the star, for her vivid singing is uneven in quality. The recording is generally acceptable; big choral and orchestral scenes with soloists to the fore can sound constricted, but a sense of theatre is conveyed. The achievement of getting the whole opera on to two CDs is admirable; it comes with a serviceable libretto in Italian and English. [B:1/2] **Peter Branscombe**

**COATES: Songs**

Brian Rayner Cook (bar)/Raphael Terroni (pno)  
ASV DCA 567 ● (MC: ZC DCA 567)

Eric Coates' songs belong to another age. They were written for the ballad concerts which had a vogue at the beginning of the century, and of course for singing in the drawing room, by anyone who had any pretence of a voice. They really need the genius of a McCormack or a Tauber to make them acceptable today: they sound very dated with their directly sentimental approach. I found the lines in the first song of Side 1 very off-putting: 'Hallo Reuben, where have you bin', but things improved a bit later! Brian Rayner Cook and his accompanist Raphael Terroni present the songs fairly and squarely but the final result is unconvincing. The words are crystal-clear and, apart from some tight upper notes, the singer uses his voice in an easy relaxed manner.

The recording is good and not over-reverberant, but the final result lacks atmosphere which alone can make such material acceptable. [A:2] **John Freestone**

**DELIUS: Over the Hills and Far Away** □ Sleigh Ride □ Brigg Fair □ Florida Suite □ Marche Caprice □ Dance Rhapsody 2 □ Summer Evening □ 2 Pieces for small orchestra □ A Song before Sunrise □ Fennimore & Gerda □ Irmelin Prelude □ Songs of Sunset

Maureen Forrester (con)/John Cameron (bar)/Beecham Ch/RPO/Beecham  
EMI CDS 747 5098 (2CDs, 146m 39s) © 1958, '60, '63

This generous compilation of classic Beecham/RPO Delius performances was well liked by PH (Sept '85, p94), though he found the LP pressings troublesome. That limitation is eliminated on CD, and with EMI tidying up the sound here in one of their best examples of digital remastering – even smoothing out the thin edge of some of the aged originals – these performances can now be heard to better advantage than ever. [B:1\*] **Doug Hammond**

**DELIUS: Violin Sonatas 1-3**

Wanda Wilkomirska (vln)/David Garvey (pno)  
Connoisseur Society CD 4012 (54m 33s) © 1974 (John Goldsmith)

Unlike that of many other composers, the music of Delius demands a special degree of involvement and empathy from its interpreters before it can even begin to function as a meaningful form of expression. Wanda Wilkomirska certainly displays these necessary qualities in abundance in her readings of the three violin sonatas, and if a certain almost quirky idiosyncrasy goes with

that approach I find it fully acceptable, in return for such fine, moving, and enjoyable performances. Her reedy tone, sometimes varied intonation, and effective use of portamenti all give a distinctive edge to her playing that is instinctively balanced by her fine accompanist, David Garvey. The recording needs careful volume setting in order to prevent the piano tone overflowing, but it then provides an agreeable setting, a good sense of presence, and a lucid balance of the instruments, although sounding a touch restrained. Well worth having. [B:1\*]

**Doug Hammond**

**DURUFLÉ: Requiem** □ 4 Motets

Ann Murray (m-sop)/Thomas Allen (bar)/Corydon Singers/ECO/Matthew Best  
Hyperion CDA 66191 (50m 34s) digital

There is very little to add to my LP review [Dec '86, p115] except to suggest that CD enhances the mellow qualities of the music-making, revealing a beautiful bloom to the lower strings' timbres. Further playings have only increased my admiration for this choir and its very musical conductor. More French music from this source please, Hyperion. [A:1] **Hugh Canning**

**DVORAK: Serenade in E, Op.22** □ Sextet in A, Op.48

Camerata Bern  
Novalis 150 011-1 (60m 50s) digital (LP: 150 011-1, CD: 150 011-4) (ASV)

Camerata Bern and its director Thomas Furi have been closely associated with music of the 18th-century, so their incursion, on record at least, into a more modern repertory is a matter of interest. An ensemble of long standing and close cohesiveness, they give a performance of the *Serenade* which can scarcely be faulted technically. Emotionally, perhaps, they are rather cool – restrained would probably be a better word for it – compared with some of their more romantically inclined rivals. But the playing carries conviction; the Valse and Larghetto are nicely shaped, and the two fast movements have sparkle enough to carry the day. The Sextet is something of a rarity. A fairly early work, it is currently represented only by the Vienna Octet recording of 1972. The six players give a dedicated performance here, though it is hard to make the piece wholly acceptable, since the first movement over-balances the other three in length without compensating interest of content. All the same, it is good to have it on CD. The Novalis sound is natural, has good perspective and is well balanced. [A:1] **Kenneth Dommett**

**ELGAR: The Music Makers** □ Sea Pictures

Felicity Palmer (con)/LSO/Hickox  
EMI CDC 747 6742 (62m 14s) digital (LP: EL27 0589 1, MC: EL27 0589 4)

Although often criticised for its extensive use of quotations from the *Enigma Variations* and other of his major works, Elgar's *Music Makers* was, for him, an essentially personal and lovingly-nurtured work and I, for one, find it extremely moving. The chorus in this performance shapes these subjective utterances with extreme sensitivity and care, the moments of calm and the ebb and flow of the recurring refrain 'We are the dreamers of dreams' being particularly apposite. Unfortunately, the recording afforded it is poor, with the words becoming indistinguishable and only sibilant hiss breaking through an extremely muffled and congested sound. Added to this, the chorus is often drowned by the fine but over-lit soloist and the responsive and well-paced contribution from the LSO. The resolute Richard Hickox casts new light in the *Sea Pictures*, but whilst it is as lucid as the classic 22-year-old recording by Dame Janet Baker/Barbirolli, I don't find it as convincing. Felicity Palmer is as persuasive as ever, especially in 'Sabbath Morning' and 'The Swim-

mer', but as these are the two more vigorous songs of the cycle, with more complex orchestral textures and a wider dynamic spectrum, they emerge with the least successful recordings. Detail is often lost behind the voice, which seems to inhabit its own sound world and creates an austerity which, when compounded by loss of ambience between songs, tends to leave the listener in limbo. So, as neither of these two works is well represented in the record catalogue, it is a pity that this opportunity to establish definitive new performances of them on disc has not been successfully realised. [C:1/2] **Barbara Jahn**

**ELGAR: String Quartet in e** □ Piano Quintet in a

Bernard Roberts (pno)/Chilingirian Qt  
EMI CDC 747 6612 (66m 02s) digital © 1986

CD here transmutes the edge of the LP issue (Sept '86, p89) into a more extended and open treble, though the muddiness of some of the inner textures (especially in the Quintet) remains. The performance of the Quartet digs deeper than that of the Quintet, but both are well worth having. [B:1/2] **Doug Hammond**

**FUCIK: KuK Festkonzert**

Czech PO/Neumann  
Orfeo C 147 861 (57m 33s)

Every circus performer in the world owes a debt to Julius Fucik whose *Entry of the Gladiators* is the signal to bring on the clowns, the spangled bare-back riders, the amiably authoritarian ringmaster. Naturally enough, Neumann begins his concert with this rousing opener, written while Fucik was a military bandmaster. But Fucik, more highly regarded in Czechoslovakia perhaps than here, was as successful as a composer of concert waltzes, that owe little to Strauss, as a writer of marches. On this record both aspects of his work are heard in tandem, with three of his finest waltzes – *Winter Storms*, *Tales of the Danube* and *Dream Ideal* (Traumideale) – interpolated between the marches *Mississippi River*, *Atilla* and *Triglav*. The overture to the operetta *Marinarella* rounds off the recital. The overture to *Miramare*, Fucik's other successful stage work, was included in one of Neumann's previous KuK Festkonzert recitals for Orfeo. Splendid stuff, beautifully recorded with plenty of body and brilliance. Neumann seems very much at home with the Austrian Bohemians – so much so that one hopes he will lend his and his orchestra's talents to a collection of Nedbal's stage music, once so illustriously recorded by the late Vaclav Smetacek. [A:1] **Kenneth Dommett**

**GLAZUNOV: Raymonda – ballet suite** □ Stenka Razin

LSO/Butt  
ASV DCA 572 ● digital (MC: ZC DCA 572)

Järvi's Chandos versions (differently coupled, handsomely recorded) have spoiled me. The medieval splendour of Glazunov's grandest of grand classical ballets demands warmth, space and resonance from a recording venue. ASV have amply managed the warmth, but the ambience is much drier than is ideal. This is a score that grows on me with every hearing – the two great Entr'actes (every Straussian), the *Grand Pas D'action* with its magnificent arching line and horn-led climax – but whilst Yondani Butt's reading is nothing if not spirited, it is Järvi and the Chandos sound team who score on opulence every time. Their superiority is even more pronounced in young Glazunov's *Stenka Razin* (inconveniently coupled, alas, with a somewhat less than remarkable *Scheherazade*). Indeed, Järvi would almost have us believe that this is some minor masterpiece, as he and his uninhibited SNO horns go all-out to stir the blood in that final death-or-glory Cossack charge. The LSO sound almost apologetic by comparison. [B/C:2] **Edward Seckerson**

**GLUCK: Alceste***Norman/Gedda/Weickl/Krause/Nimsger/Navarrian RSO & Ch/Baudo***Orfeo C 027 823** (3CDs, 151m 19s) digital © 1983

This recording became available here on LP in 1983 but does not seem to have been reviewed in our pages. It is the Paris version of *Alceste* that we are offered, and very welcome it is, too. The performance is less than perfect, but definitely above the average of Gluck recordings. The cast is fine, the orchestral and choral contributions fully worthy of this splendid score, and the recording spacious, though not ideally balanced: the microphone placing is perhaps responsible for the edgy quality that occasionally mars Jessye Norman's committed and expressive singing in the title role. And this is one of those numerous opera recordings in which the orchestra can sound lost behind the soloists.

What is largely lacking is that natural mastery of Gluck's idiom that alone can fully convince one in a performance that one is in the presence of greatness. Serge Baudo conducts with care, and doubtless with conviction; elemental passion is missing, decorum paramount. Nicolai Gedda does convey something of the essence of French style, though his Admetus shows signs of strain at the top of his range. Siegmund Nimsger makes what can be made of the faintly ridiculous part of Hercules; Kurt Rydl is a sonorous God of the Underworld; and Tom Krause, despite suggesting unfamiliarity with the French manner, sings impressively as the High Priest. The other parts are mostly well sung. Since the sterling old Flagstadt/Geraint Jones version – still available 30 years on – is of the very different Vienna version (and in Italian), Baudo has no direct rival. Even if there were one, it would have to be outstanding (who would the singers be?) to eclipse this Orfeo set. It should be mentioned that the booklet is clumsily laid out, with disparities between the cast-list and the names in the libretto (text in French, German and English). The rather short third CD could easily have accommodated the ballet music, though I am not inclined greatly to lament its loss. It is for Gedda's evergreen artistry, and Norman's delicate singing even more than her fire, that this issue is treasurable – and of course for Gluck's music. [B:1/2]

**Peter Branscombe****GRIEG: Piano Concerto in a/MENDELSSOHN: Piano Concerto 1 in g***Cécile Ousset (pno)/LSO/Marriner***EMI CDC 747 6112** (48m 59s) digital © 1985

These unrestrained late-Romantic performances were hampered on vinyl (July '86, p87) by some orchestral haze, and an aggressive immediacy, both of which are reduced on CD. The shallowness of the orchestral sound remains unaltered, however. Still recommendable then, with some qualification. [B:1\*/1]

**Doug Hammond****HANDEL: Tamerlano***Ragin/Robson/Chance/Argental/Eng Bar Sols/Gardiner***Erato ECD 88220** (3CDs, 180m 13s) digital (3LPs: NUM 75278, 3MCs: MCE 75278)

The Handelian faces a dilemma here, for this is the second recording of the composer's profound and disturbing opera (King's Theatre, 1724) to have appeared here in recent months. CD could well decide the issue, since Malgoire (CBS) is only available on LP/MC, but it is not as simple as that, I'm afraid. To begin with, Gardiner's performance derives from two live concerts in Cologne, recorded after a run of stage performances in Lyon. For my taste, this brings tremendous dividends, because for once a Handel opera on record sounds like a vivid theatrical experience. Gardiner directs his 'authentic' forces with an unerring dramatic pace – especially noticeable in the acutely

characterised, if a touch too Anglophone, recits – and an understanding of the *da capo* aria and its context, which might have made this the outstanding Handel opera performance on record.

'Might have' because there are serious drawbacks. Gardiner takes plentiful liberties with Handel's text, almost obliterating the part of the 'confidant' Leone (René Schirrer) and abbreviating the number of the principals' solos. But he does argue his editorial decisions cogently – in marked contrast to Malgoire who appears to have taken his scissors to the score wearing a blindfold. (The opera's most dramatic scene, where Asteria walks over her father's body to mount the throne in an assassination attempt on Tamerlano, is excised completely in an act of musicological vandalism which can have scarcely been matched in these days of scholarship and *Werktraue*).

Unfortunately, even Malgoire's edition does not rule his recording out completely, since he includes some beautiful arias cut by Gardiner and, on balance, his cast is superior. Nancy Argenta is a neat and musical Asteria, but she does not touch the heart as Mieke van der Sluis (CBS). Nor is Jane Findlay's hoity, rough-toned Irene a match for the delightful Isabelle Poulenard. The men are more evenly cast: Derek Ragin, the black American counter-tenor, has a voice of quite exceptional individuality and richness, and he captures brilliantly the vanity, exoticism and psychotic qualities of the Tartar Emperor. Michael Chance, too, does some lovely things in the (Senesino) role of Andronico – the true hero, if a vacillating one, despite the title – but he comes to grief in the aria 'Par che mi nasca in seno', where the tone loses colour and pitch sags horribly. What can have happened, and why wasn't the number remade?

The star of the set, though, is Nigel Robson's Bajazet who dominates the opera as he rightly should. His voice is dark and gravelly – the defeated Ottoman Emperor is meant to be old – but he negotiates Handel's florid line with liquid production and wonderful, memorable phrasing. The sound recalls Philip Langridge in earlier days, and Robson, I would suggest, is a comparable artist in this repertoire, unbearably moving in his magnificent suicide scena near the opera's end. The set deserves to be heard and bought for Robson alone; the sound quality, though, will make the EBS very few friends. They seem uncustomarily wiry and scratchy in Erato's recording, but CBS's reverberant acoustic for Malgoire is not much better. So, in sum, you pay your money and takes your choice. [B/C:2]

**Hugh Canning****HANDEL: Rodelinda***Sutherland/Buchanan/Nafé/Tourangeaul/Rayam/Ramey/Welsh Nat Op Orch/Bonyng***Decca 414 667-2** (2CDs, 146m 11s) digital (2LPs: 414 667-1, 2MCs: 414 667-4)

The excellent technical standard of the LPs (reviewed April, p97) is enhanced on CD. Balance favours the singers, though the orchestral playing is rich-toned and with wind parts clear. There is very fine singing from Alicia Nafé and Curtis Rayam in particular, and if one gets little sense of a staged drama, a good, musicianly recording of *Rodelinda* was long overdue. Despite heavy cuts and some vocal strains, no Handelian will want to be without this beautifully presented set. [A:1/3] **Peter Branscombe**

**HANDEL: 'Silete venti' □ 'Cecilia, volgi un sguardo'***Jennifer Smith (sop)/John Elwes (ten)/The English Concert/Pinnock***Archiv 419 736-2** (55m 08s) © 1982

This delightful coupling of two of Handel's later vocal chamber works was warmly acclaimed on its first appearance, and on CD it is even more enticing. I thought the LP recording 'well balanced, with the orchestra clear-textured . . . voices well captured' (July '82); now there is just

that much more immediacy, also more space about the voices. The fresh, perceptive performances, with lovely singing from both soloists (Jennifer Smith's coloratura an especial joy), and a feeling of ardent spontaneity emanating from the English Concert under Trevor Pinnock's lively direction, are truly of star quality: my earlier and ungenerous A:1 must be raised to [A\*:1\*]

**Peter Branscombe****HAYDN: Symphonies 22, 24 & 30***Cantilena/Shepherd***Chandos CHAN 8505** (50m 31s) digital (LP: ABRD 1215, MC: ABTD 1215)

If you like your early Haydn symphonies bright, jaunty, and with languorous warmth to the slow movements, then this issue may be just what you are looking for. Even more than on the LP (May) there is on the CD an insistent focus on points of special interest – the very clarity and directness of the silver disc drawing attention to the unusual sonorities in 22, solo flute in 24 and 30. Impressive, but restless. [B:2]

**Peter Branscombe****HAYDN: Symphonies 88 & 104***Bournemouth Sinf/Thomas***CRD CRD 3370** (46m 40s) © 1980

Outside the boxed sets there are still relatively few recordings of No.88, though 104 is well represented. I am insufficiently acquainted with many of the alternatives to make comparisons but would echo PB's enthusiasm for these lively performances by Thomas and his vivacious little orchestra. In the review of the LP (Aug '80 p98) the presence of harpsichord continuo was remarked, but even on CD its presence is not obtrusive. There was also a slight criticism of the fast speed of the Allegretto trio in 88, which I would endorse and would extend to the finale, which seems a bit hectic. That said, no complaints. The sound is clear, fresh and well balanced. [A:1] **Kenneth Dommett**

**HAYDN: Nelson Mass***Stahlman (sop)/Watts (con)/Brown (ten)/Krausel King's College Ch/LSO/Willcocks***Argo 417 469-1** ● (MC: 417 469-4) © 1962

Sir David Willcocks's series of recordings of the late Haydn Masses earned justified praise when they first appeared and continue to merit the greatest enthusiasm. Remastering seems to have injected a slight hollowness here, and the reissue is rather more reverberant than my old copy (ZRG 5325). Against that the surfaces are greatly improved so that one may unreservedly enjoy the impressive singing – Stahlman is particularly strong – and Willcocks's essentially dramatic reading, which reminds us of the narrow divide between church music and stage music in the 18th-century. [A/B:1\*]

**Kenneth Dommett****HAYDN: Heiligmesse □ Mariazellermesse\****April Cantelo, \*Jennifer Smith (sop)/Shirley Minty, \*Helen Watts (con)/Ian Partridge,**\*Robert Tear (ten)/Christopher Keyte, Benjamin Luxon (bass)/St. John's College Ch/ASM/Guest*  
**Argo 417 306-1** ● © 1967, '78

I found these thoroughly respectable, musicianly performances of two resplendent works which have nevertheless failed, on repeated hearings, to ignite in me that enthusiasm for which Haydn increasingly prepares me. I think if I had to sum up my greatest reservations with a single observation, it would be that both performances lack sufficient rhythmic bite, a deficiency arising from an inadequately wide dynamic spectrum in the normal delineation of phrase (particularly in the *piano* to *pianissimo* range), and an approach to articulation which underrates, if only by a hair's breadth, the energising and illuminating properties of silence, however fleeting. I can't

otherwise account for a vague but lingering impression of a certain heaviness in music whose contrapuntal and polyrhythmic clarity is fit to rival even Bach's. A further problem, for me, arises from the singing of all the soloists in the *Mariazzellermesse*, which seems to suffer from a kind of viral intonitis and a propensity to an out-of-phase vibrato suggestive of a portly St. Vitus. With a slightly uneasy conscience, then: [A/B:2].  
**Jeremy Siepmann**

**HAYDN: Stabat Mater**

*Augèr (sop)/Hodgson (con)/Rolfe-Johnson (ten)/Howell (bass)/London Cham Ch/Argo CO/Hellay*  
Argo 417 471-1 ● (MC: 417 471-4) ® 1980

When originally released this was coupled with the *Salve regina* in G-minor. In his review (May 1980) PB commented adversely on the sound and recording quality of that, but had considerable praise for both the performance and sound of the longer work. This is early Haydn (1767 according to the *New Grove*, where it is listed as an oratorio), and is largely a succession of solo arias of varying interest. Hasse approved of it, hoping it could get the singers it deserved. He would certainly have applauded this quartet, and Heltay's sensitive direction. There is nothing to suggest that further engineering has been done on the sound, or needs to be, since it is extremely fine. [A:1]  
**Kenneth Dommett**

**HUMMEL: Sonatas Op.50 in D, Op.5/3 in E ♭ □ Nocturne Op.99**

*Ralph Holmes (vln)/Richard Burnett (f-pno)*  
Saydisc CD-SAR 12 (53m 36s) digital ® 1984

The LP was enthusiastically praised by PT (February '84), and its issue as a silver disc takes on an added poignancy from the knowledge that Ralph Holmes has since died. He plays a lovely Stradivarius (dating from the maker's 92nd year), and Richard Burnett a Conrad Graf (Vienna, 1826), also a superb instrument. The recording is very truthful, well balanced, but so close as to emphasize the artists' breathing; otherwise it is as fresh and clear as one could wish. The Hummel works should be welcome in any collection – sparkling yet tender, and pleasingly contrasted, they give both artists the chance to shine, as well as to support each other most tactfully and stylishly. Certainly a lovely issue, though I would not myself have given it two stars. A curious feature of the otherwise useful booklet is that my copy has every other page unprinted – the sum of what I have in English, French and German still leaves me short. [A:1]  
**Peter Branscombe**

**LEONCAVALLO: I Pagliacci/MASCAGNI: Cavalleria Rusticana**

*Caballé (sop)/Scotto (sop)/Hamari (m-sop)/Varnay (m-sop)/Carreras (ten)/Benelli (ten)/Allen (bar)/Manuguerra (bar)/Nurmela (bar)/Ambrosian Op Ch/Southend Boys Ch/Philharmonia Muti*  
EMI EX 29 0811 3 ● (2LPs) ® 1980

I reviewed the original set in May 1980; the new album has been digitally remastered and fits comfortably onto two LPs without loss of quality. The original sound was very good, with excellent stereo separation and clean definition. The dynamic range is very wide, making Turiddu's serenade at the commencement of *Cavalleria* sound very distant, while the ensuing forte orchestral passages are very heavily recorded. Muti makes the most of these 'verismo' scores, conducting with precision and dramatic fire, and all the soloists respond well to his direction. Caballé sounds more involved than usual as Santuzza, and acts well with her voice, while Scotto, despite an occasional hard and unsteady note at the extreme top of her range, sings most beautifully. Carreras is in fine voice throughout and is dramatically convincing in both roles, and all the other principals are good, with Thomas

Allen a superb Silvio. It is interesting to hear the veteran Astrid Varnay in the small role of Mamma Lucia, although by the 1980s her singing was very unsteady.

The final words 'La commedia è finita' are here sung by Tonio and the accompanying notes state that the original manuscript was so written, but certainly my Ascherberg score, copyright 1893, gives the line to Canio. Perhaps Leoncavallo changed his mind! I see no reason to change my original assessment of the set, which was [A:1].  
**John Freestone**

**LISZT: Piano Sonata □ 6 Paganini Studies**

*Cecile Ousset (pno)*  
EMI CDC 747 5142 (55m 07s) ® 1985

This is powerfully impressive playing, no question about it. Ousset's many devotees will know the performances already, from their earlier LP incarnation, and nothing in the CD version is likely to disappoint them. For me, however, whose admiration exceeds my enthusiasm, the increased clarity serves only to accentuate that aspect of her playing which I like least: her tonal palette. If I find her sound hard, on the whole, I'm bound to admit that it's the hardness of diamonds rather than of granite, as I'm also convinced, from her playing generally, that she is wholly in control of it. A professional (and a virtuoso) to her fingertips, she is mistress, so to speak, of all she surveys. It's not her fault that I prefer more pastel colourings, and a subtler use of tonal chiaroscuro than she tends to deploy. Nor do I question her musicianship, which is of a high order. In any case, her major offering here, the B-minor Sonata, is a work with which I have an exceptionally acute love/hate relationship, and one which, at the moment, I enjoy far more as a player than as a listener. From my current vantage point, the piece seems more symphonic than bravura, hence my preference for a more 'organic' approach to matters of rhythm and tempo than I find here. In the Paganini Studies, on the other hand, virtuosity at the highest level is of the very essence, and Ousset's playing is stunningly effective. [A:1\*/2] **Jeremy Siepmann**

**LISZT: Lieder – including Die drei Zigeuner □ Oh! quand je dors □ S'il est un charmant gazon/STRAUSS: Lieder – including Die Nacht □ Allerseelen □ Fünf Lieder, Op.15**

*Brigitte Fassbaender (con)/Irwin Gage (pno)*  
DG 419 238-2 (58m 36s) digital (LP: 419 238-1, MC: 419 238-4)

I shall return to this disc often, though not without mixed feelings. Whilst being entranced by Brigitte Fassbaender's skill at adapting her voice to suit the mood of each song, and by the intensity of involvement and commitment with which she imbues it, I cannot reconcile myself to the harshness of tone, emphasised by an extremely slow vibrato, produced when opening out notes, often at the most sensitive and climactic points. At, for example, the contrast of 'der ferne Tag' and 'das ewige Licht' in Strauss's *Am Ufer*, the word 'ferne' perhaps merits a slightly menacing coloration, but surely 'Licht' should swell and lighten rather than harden? However, I think I have heard no finer performance of *Morgen*, fourth of the four Lieder, Op.27, and given by Strauss to Pauline de Ahna on their wedding day: love simply flows through her voice, recapturing Strauss's mood and the root of his inspiration. Of equal conviction is her dramatic pronouncement of the opening Liszt song, *Vergiftet sind meine Lieder* (Poisoned are my songs), followed by a completely tamed and restful vocal quality in *Über allen Gipfeln ist Ruh*. Liszt's *Es muss ein Wunderbares sein* shows Fassbaender to be a more independent and self-confident lover than the unquestioningly devoted partner that Hildegard Behrens was happy to be, in her recent Liszt recital on EMI (Mar '87, p98); but both are equally convincing.

Though beautifully toned, the piano used by Irwin Gage here tends in the reverberant acous-

tic of the recording venue to respond poorly and lack clarity both in its lower register, and generally in the more thickly-textured accompaniment of such songs as *Lob des Leidens*. However, Brigitte Fassbaender's wonderful range of vocal colours is admirably set down. [A/B:1\*/2]  
**Barbara Jahn**

**MACDOWELL: Piano Concertos 1 & 2**

*Donna Amato (pno)/LPO/Freeman*  
Archduke DARC 1 (53m 26s) (John Goldsmith)

It is encouraging to see new entrepreneurs entering the CD market, particularly when they are prepared to present new artists in non-commercial repertoire. Archduke have secured the services of two experienced men in Anthony Hodgson and Bob Auger to give the young American pianist and her conductor, another American, a good setting for these dauntingly difficult concertos. Macdowell wrote the first (A-minor) in 1882 and the second (D-minor) in 1885. His admiration for Liszt (who sponsored the premiere of No.1) is reflected in the scoring of both works, though it is possible to sense a flavour of Grieg in No.1 and of Wagner in No.2. The charge that Macdowell was derivative, while partly true, is not really sustainable: the *Andante tranquillo* of the A-minor, and the central *Presto giocoso* of the D-minor, for instance, are quite original, as is the entire structure of No.2. Donna Amato surmounts the difficulties of the solo part brilliantly with dazzling passage work that, in No.2 particularly, is well caught by the recording. Perhaps the congested scoring of the first movement of No.1 is partly to blame for a rather stodgy sound here, and Freeman might possibly have pointed up passages more deliberately. No.2 is altogether more successful and can be recommended without reservation. An encouraging debut. [B:1]  
**Kenneth Dommett**

**MAHLER: Symphony 4**

*Helen Donath (sop)/Frankfurt RSO/Inbal*  
Denon 33C37-7952 (56m 22s) digital

Inbal's first movement is appreciably more playful than most. He really uses Mahler's quixotic contrasts – the exaggerated dynamics, the sudden rushes of adrenalin fuelling flights of youthful fancy. Pace and rhythm are boisterous, rubatos 'stretched' with a smile, his cellos – so richly favoured with their schmaltzy second subject – sing out with child-like relish; and that most delicious of recapitulations, with Mahler's sugary first subject, sounding for all the world as though it has slept through the rest of the movement and just woken up, works like a charm. Ditto the second-movement trio, with fulsome string portamenti irresistibly indulged and woodwind coloration that is spot-on. Lovely, pungent clarinets. Perfect.

The third movement, though genuinely affecting, doesn't have Maazel's Vienna Philharmonic – their sweetness, instinct, or sense of wonder – and Helen Donath, overly ripe of tone and enunciation, projecting the text all too eagerly, even breathlessly in the stanza about Peter and the fishes, is disappointing in (iv), no match at all for the touching purity of Kathleen Battle (Maazel). Even so, Maazel aside (a class apart – no self-respecting Mahlerian should be without a copy), Inbal's reading has abundant wit, charm and affection. His command of the style is second to none, he has an orchestra whose big-hearted commitment more than compensates for any passing imperfections, and Denon's recording quite simply [literally: it was done with a single B&K pair of mics!] takes the palm. I know I will return to it often. [A\*:1/1/2]  
**Edward Seckerson**

**MAHLER: Symphony 5**

*Frankfurt RSO/Inbal*  
Denon 33CO-1088 (72m 40s) digital

An inspired performance, at its heart a reading

of Mahler's extraordinary scherzo – fulcrum of the work's perfect symmetry – that I don't expect to hear bettered in a hurry. For that most elusive of movements, Inbal gives himself all the time in the world. It's what Mahler envisaged, no question: time to contemplate, breathe the air, take in the magical distillations as embodied in those unforgettable solo horn obbligatos – gorgeously played, incidentally. The climaxes which throw open the windows, as it were, on to this 'world beyond' are thrillingly set up. The atmosphere of the movement is special: lots of light and shade and wit in Inbal's gentle caricaturing of the recurrent none too gracious country waltz – an unreal, slightly ghostly quality.

Elsewhere too, the technical and spiritual complexities of the score are perfectly understood. Inbal's vibrant first trumpet and the bearing-down of martial percussion (stunning) sets the funeral *cortège* in motion. The air is heavy; the music wearily drags its feet. Mahler's stormy first trio, with its searing, head-flinging trumpet solos, is unnerving; likewise the neurotic energies of (ii), its bizarre pizzicati and frantic woodwind solos (low-lying clarinets and bassoons dominant) – more often than not cut short in mid-protest among the most startling depictions of emotional incoherence in music. Rightly, Inbal does not compromise a single note. It's fierce, it's stark, the fleeting moments of repose (most notably the lonely unaccompanied cello recitative) the more poignant for being simply inflected. So too the *Adagietto*: naturally, unfussily phrased (so easy to indulge here) with cello playing worthy of the Berlin Philharmonic. The *Rondo finale* is liberating.

There is – and I say this with confidence – no more illuminating or satisfying account of this score on record or Compact Disc. And the sound? Well, just look at the rating. [A\*:1\*]

Edward Seckerson

**MENDELSSOHN: Symphony 3 'Scottish' □**  
Calm Sea & Prosperous Voyage  
Berne SO/Maag  
IMP PCD 849 (56m 22s) digital

Many may have Maag's 1960 Decca recording of the 'Scottish' and will be tempted by this new low-price CD, hoping for new insights and better sound. I wish, then, I could muster more enthusiasm for it, but the Berne Symphony Orchestra of today is no match for the LSO of twenty-five years ago and, if anything, Maag's view of the work seems less committed and perceptive. The main theme of the first movement's *Allegro* is poorly defined in terms of rhythm, and the return at the end of the movement to the music of the opening *Andante* is insipidly handled, with little sense of mystery or emotional intensity. The *Scherzo* lacks effective dynamic contrast, and towards the end it is marred by poor ensemble, a feature that also reduces the impact of the wonderful *Adagio*. The *Finale* in its turn would have benefited from more decisive articulation, a brighter brass timbre, and strong dynamic definition; this last might have prevented the *ppp* strings in the magical transition to the 6/8 from dominating the texture. In the concluding *Allegro maestoso assai*, the horn lead is lightly taken and Maag sets a lugubrious tempo, having to speed up later (where it is not marked) in order to give a lift to the conclusion. This, then, is a reading that might well suffice in concert but is only average fare for repeated listening. As the *Overture* follows on too quickly and suffers the same muddy sound with edgy sheen to the high strings, I could not recommend this low-price issue. [C:3]

Doug Hammond

**MOZART: Violin Concertos K268 & K271a**  
Jean-Jacques Kantorow (vln)/Netherlands CO/  
Hager  
Denon 33CO-1331 (49m 37s) digital

Advertised as a supplement to the complete works for violin and orchestra, this presents the two violin concertos that are certainly not by

Mozart, at least in their present form. K268, which the old Gesamtausgabe published as No.6, is now generally regarded as being by Friedrich Johann Eck. It is, incidentally, in E-flat, not B-flat as stated on both sleeve and label. K271a in D has a stronger claim to authenticity – at least it sounds like Mozart – and there is circumstantial evidence to suggest that he may have played it in July 1777 at a private concert; but as it has come down to us the solo part is heavily amplified and untypical. However, it is an attractive work, and this performance is full of vitality, though the outer movements are rather hectically paced by Hager, especially the first which is supposed to be *maestoso*. Kantorow is a technically gifted player with a clear tone and clean attack, both of which are essential in K271a, and he copes effortlessly with the speed. The Japanese recording is much better than some I have heard from this source, with a good spread of sound and an absence of the stidency that afflicted several of their older LPs. [A:1]

Kenneth Dommett

**MOZART: Violin Concertos K216 & K219**  
Pinchas Zukerman/St Paul CO  
CBS IM 37290 ● digital (MC: IMT 37290)

This completes Zukerman's series of the five 1775 concertos, a series distinguished by the silkiest of solo work and orchestral support of strength and charm. On occasion – and the slow episode just after the opening of K219 is a case in point – Zukerman gathers the music to himself positively sensuously: ravishing certainly, but more Fragonard than Watteau perhaps? On balance though, tempi and balances are sensitively judged and appropriate, the dynamic contrasts effective and not excessively marked. The cadenzas give further opportunity for the soloist, who has been described as being 'without peer among violinists' – a very large claim indeed – to show that while he may not actually be peerless, he is more than a cut or two above the run of young soloists who essay these concertos in the mistaken view that they are stepping stones to a more demanding repertory. As with the earlier issues, the recording is clear and natural and the LP quite free from blemish. [A:1]

Kenneth Dommett

**MOZART: Horn Concertos**  
Jonathan Williams (hrrn)/COE/Schneider  
ASV CD COE 805 (52m 11s) (LP: COE 805, MC: ZC COE 805)

My enthusiasm, engendered by the appearance of the LP [May, p98], is reinforced, if possible, by the added presence and clarity of the CD. Williams' playing is of a very high order indeed, and the rapport and balance between him and the orchestra as good as is to be found on record, bringing fresh life and colour to these perennial favourites. [A\*:1\*]

Kenneth Dommett

**MOZART: Divertimento K563 □ 3 Fugues K404a**  
Grumiaux Trio  
Philips 416 485-2 (61m 33s) © 1967, '70

This is one of the classic performances of the *Divertimento* and a real tribute to the artistry of the late Arthur Grumiaux. His style, ably matched by his two companions, was mellifluous rather than overtly dramatic and made its effect by sensuous sound allied to profound understanding and sure musicianship. Originally released here in 1968, the LP found its way into Philips's complete Mozart Edition, then in 1982 reappeared in the 'Musica da Camera' series. The three Fugues, arrangements by Mozart of Nos. 8, 14 and 13 of *The Well Tempered Clavier*, transposed into more comfortable keys, have three *Adagio* preludes of his own devising. He made six such arrangements altogether in 1782 when preoccupied with contrapuntal exercises. They are oddities, but interesting ones, and

make a novel appendix to the greater work. There appears to be no other recording. This one, excellent for its time, shows little sign of age, and is a welcome addition to CD. [A:1/1\*]

Kenneth Dommett

**MOZART: Divertimenti K213, K240, K252, K253, K270**  
BPO Winds  
Orfeo S 152 861 ● digital

The five *divertimenti* for wind sextet (the sixth, K289, is considered dubious) were ostensibly written as *Tafelmusik* for the Archbishop of Salzburg's mealtime entertainment. If their original interpreters played them as seductively as the present artists do their effect must have been placatory as well as digestive. There have been many recordings down the years, but few in my recollection to equal the relaxed and elegant sophistication of the Berliners, who respect Mozart's refinement even in music of such an occasional nature without seeking to impose upon it spurious profundity. Placed in a suitably warm and resonant acoustic, nicely balanced and accompanied by an immaculate pressing, this issue should have wide appeal to all who appreciate the lesser Mozart as well as fine wind playing. [A:1]

Kenneth Dommett

**MOZART: Wind Serenades K375 & K388**  
SNO Wind Ens/Paavo Järvi  
Chandos CHAN 8407 (49m 28s) © 1985

The LP appeared in 1985 (Mar, p107). By some standards the performances are statelier than the nature of such music suggests, though the controlled speeds do admit some polished playing. The LP seemed well balanced but CD reveals a tendency to group the players unnaturally left and right of centre with the gap in the middle presumably occupied by the conductor. [B:1]

Kenneth Dommett

**MOZART: Clarinet Quintet □ Violin Sonatas K481 & K376**  
Bohulav Zahradnik (clt)/Talich Qt/Petr Messiereur (vln)/Stanislav Bogunia (pno)  
Calliope CAL 9628 (73m 08s) © 1980, '85

The main thing about this record is its length; the performances are, however, transfers of analogue originals and, in the quintet particularly, they have transferred with them an audible background rumble, presumably tape noise. This has spoiled an otherwise attractive if conventional reading by Zahradnik (about whom I know nothing) which, though it does not attempt to restore the music to its presumed original condition, has much to recommend it. The Talich Quartet (Czechs resident in Paris) have a high reputation but in general have not been well served by recording, and much of their good work has been vitiated by indifferent sound. Their leader, Petr Messiereur, has a lovely tone which is exploited to the full in the slow movement of the Quintet and in the two Sonatas; his style may be regarded as somewhat fulsomely romantic for Mozart, but perfectly acceptable to those who do not object to having a bit of warmth injected into the music. [C:1]

Kenneth Dommett

**MOZART: Horn Quintet K407 □ Oboe Quartet K370 □ Clarinet Quintet K581**  
Fumiaki Miyamoto (ob)/Reiner Wehle (clt)/Marie-Luise Neunecker (hrrn)/Mannheimer Qt  
Novalis 150 006-2 (63m 28s) digital (LP: 150 006-1, MC: 150 006-4) (ASV)

Although it is good to have these three works on one disc, particularly in such technically competent performances, I am not entirely happy with the interpretative line adopted by these artists. Their readings tend to lack that nth degree of refinement and elegance, and there often seems to be some undue haste in their approach – little



time to shape phrases and bend instinctively, at moments requiring rubato and subtle tempo change.

The Clarinet Quintet receives the best performance, the minuet bubbling along congenially, with more instances of light and shade than elsewhere on this disc. The balance here between strings and wind soloist is more acceptable than the heavyweight and forthright stance of the horn and oboe in the other works, which tends to emphasise an almost unmitigated preference for a moderately loud dynamic. The recording has much to answer for in compounding this unhappy balance. With the soloists given unnecessary prominence and the string sound so homogeneous that spread is limited and exact location of the instruments difficult to perceive, a split rating seems appropriate. [B/C:2/3]

Barbara Jahn

**MOZART: Piano Trios K502 & K564**  
London Fortepiano Trio  
Hyperion CDA 66125 (44m 36s) © 1983

The LP was spoiled by a pervasive rumble on Side One – at least my copy was – and this is still evident in the CD version. It may be the unduly resonant cello, but the sound is unfocused and hard to isolate. CD has certainly emphasised the dryish tone of the strings though not to the same extent as the Salomon Quartet recordings on the same label. The quality of the performances remains exemplary. [B/C:1] Kenneth Dommett

**MOZART: Lieder**  
Edith Mathis (sop)/Karl Engel (pno)  
Novalis 150 010-2 (44m 38s) digital (LP: 150 010-1, MC: 150 010-4)

This record contains twenty of the 40-odd songs that make up Mozart's contribution to the repertory, sung in Köchel number order, which is not necessarily chronological order. It has to be admitted that their quality is very variable; one or two are near masterpieces, but several are pretty run-of-the-mill examples of the art, not, one supposes, expected by their composer to engage the attention of posterity. Edith Mathis seems to share this view since she frequently omits verses from the strophic songs where each is set to the same music. And, for the most part, one feels that she has undertaken the task from a feeling of respect rather than from any burning sense of commitment. Only the great songs, from the second setting of *Die Zufriedenheit* on, contrive to raise the emotional temperature above lukewarm, and in them one catches something deeper in her interpretation. She is ably matched by Engel who himself seems content to mirror the singer's reactions which, after all, is his function, since only rarely does his part demand much independence from the vocal line. Several years back Mathis recorded a selection of these songs for DG, listed as 'Volume 1' (did Volume 2 ever appear?), when she appeared to find more in the material than now. The sound is natural and well balanced, but one feels something vital is missing. [A:2]

Kenneth Dommett

**MUFFAT: Sonata V a cinque** □ **Sonata per violino e basso/SCHMELZER: Lamento sopra la morte Ferdinandi III** □ **Sonata a tre violini** □ **Sonata a tre** □ **Sonata 'Lanterly'** □ **Sonata IX**  
London Baroque/Medlam  
Harmonia Mundi HMC 901220 (61m 29s) digital

This is a very pleasing issue, presenting some fine and largely unfamiliar works in superior performances, very well recorded. Schmelzer, by 30 years the older of these composers, is represented by five works, each lasting for between 4½ and 7m. The most obviously striking of these thoughtful and varied pieces are the *Lament for Ferdinand III*, with its lovely suggestion of the tolling of the passing bell in its second movement, and the misleadingly titled

*Sonata a tre*, which is also programmatic. Of the two Muffat works, the Sonata V (from *Armónico tributo*, 1682) is easily the longer (over 21m), and has five movements, concluding with a stately and extended passacaglia with 24 variations. The performances are by turns rapt and joyous, with richly varied textures eloquently and clearly delineated. It is a great pity that there is no indication in the leaflet or on the case-card of the headings (or even the number) of movements in each work. The five Schmelzer pieces have respectively 3, 4, 3, 2, 2 movements; the two by Muffat have 5 and 2. The recording is spacious and well balanced; some may find that the bass-line is over-resonant when both organ and violin are employed. A nobly beautiful issue, recommended even to those who do not usually fall for baroque chamber sonatas. [A:1\*]

Peter Branscombe

**ORFF: Carmina Burana**  
Walmsley-Clark (sop)/Maxwell (bar)/Graham-Hall (ten)/LSO & Ch/Hickox  
IMP PCD 855 (63m 33s) digital

Heaven knows how many times Richard Hickox must have primed his LSO Chorus for *other* conductors' performances of the ubiquitous *Carmina*. For that reason alone I suppose I expected something more of his own: a few more risks, perhaps, a touch of audacity, the kind of abandon that one generally associates with long-standing partnerships. This isn't bad – not bad at all – but it rarely comes off the page as I'd hoped it might. What's missing is the last degree of rhythmic flamboyance in the rowdy up-tempo numbers – it's all a little on the deliberate side – and a more fragrant atmosphere where the music sighs of Spring, love, and pleasures of the flesh. A little imagination goes a long way in *Carmina*. Muti, Frübeck, and Jochum have all borne witness to that.

On the credit side, the Hickox chorus is good (though I have heard them better and certainly more imposing in the hefty opening and closing invocations) and we've more than adequate soloists in Donald Maxwell (no problems with the high tessitura of 'Estuans interius'), Penelope Walmsley-Clark (a better-than-most 'Dulcissime'), and John Graham-Hall, though Hall's bell-like tenor sounds rather too good, too comfortable, given his untimely roasting (*has* to be a grotesque falsetto, I think!). The Southend Boys are fine (a suitably raunchy *Tempus est iocundum*) while Mike Sheady's engineering catches the dominant percussion and brass scoring with all due immediacy.

A very respectable bargain then, but personally I would be more inclined to part with the extra £3 or so and treat myself to a little Muti swagger courtesy of EMI. [A:2/3]

Edward Seckerson

**M PRAETORIUS: Christmas Music**  
Westminster Cathedral Ch/Parley of Instruments/Hill  
Hyperion CDA 66200 (49m 13s) (LP: A 66200)

The very favourable impression given by the LP, which I reviewed from pre-production pressings for December 1986, is confirmed by the CD product. Very good playing and singing (with the occasional blemish nevertheless, as noted) and excellent recording make for my favourite ever Christmas recording. Lovely music, done with affection and great sympathy. Now how about some Praetorius Easter or Reformation music? [A\*:1]

Stephen Daw

**PROKOFIEV: Peter and the Wolf** □ **Cinderella – music from the ballet**  
Lina Prokofiev (nar)/SNO/Järvi  
Chandos CHAN 8511 (55m 56s) digital (LP: ABRD 1221, MC: ABTD 1221)

My black-disc rating (June p99) still stands, though the fabulously big-boned sound for Järvi's *Cinderella* set-pieces (spectacular bass-

line extension – as if suddenly the SNO cellos and basses belonged to the Berlin Phil) is a touch overbearing in its hyper-responsive, high-level, silver format. (Beware your volume setting!) The sparer *Peter and the Wolf* scoring sounds great, very vivid, though I should perhaps reiterate that your kids' response to Madame Prokofiev (the composer's widow – a novel choice for the narration) might well depend upon how old and/or how patient they are. Her delivery is charming (the benevolent old aunt from foreign parts) but the pacing is very deliberate, as indeed is Järvi's. With 56 cues, *Peter and the Wolf* is virtually indexed by the bar! [A/A\*:2/1]

Edward Seckerson

**RACHMANINOV: Piano Sonata 2 (Original version)** □ **6 Preludes** □ **3 Etudes-Tableaux**  
John Browning (pno)  
Delos DCD 3044 (74m 28s) digital (John Goldsmith)

No-one's going to be quibbling about value for money. Delos have packed this one to within a whisper of what is technically feasible on a single CD. And the quality is A\* for piano sound. That much is plain from the first impetuous bar of the Sonata, and again in the bell-like cacophony of the development climax. It's clean and full-bodied throughout the range no matter how much pressure Browning piles on. And, my goodness, he does. We've all the temperament and 'grand manner' pianism, the big hard-hitting sonority here that marked his recent Delos account of the Liszt Sonata. And I must say I find it very exciting: the risks, the fantasy, the vein of wildness in his playing. In the Sonata (note for note, line for line, the original version – a 'first' we are assured) I generally share his instincts: the ebb and flow, the rise and fall of the line always rings true. He rejoices in the 'orchestral' richness of an ever-shifting piano texture, though never at the expense of harmonic clarity; the colours, even the brightest of them, convey a deep-seated melancholy. More than ever I feel the close proximity of *The Bells*.

Opinions are very likely to divide over the more familiar supporting programme. Browning always has something to say, I like his panache, his imagination (I put him among the most underrated of big-name Americans from the last 20 or so years), but I part company with him over the swaggering G-minor Prelude Op.23 and the exquisite G major Op.32. Both strike me as over-worked, the latter too fussy by half for a piece whose fragile beauty shines the more brightly for being understated. [A\*:1/3]

Edward Seckerson

**RAMEAU: Castor et Pollux**  
Jeanette Scovotti (sop)/Gerard Souzay (bar)/Zeger Vandersteene (ten)/Rolf Leanderson (bass)/Stockholm Kammerchor/Concentus Musicus/Harnoncourt  
Teldec 8.35048 (3CDs, 166m 19s) © 1972

This is a welcome return (particularly on CD) of Harnoncourt's strongly cast version of this admirable *tragédie-lyrique*. Though perhaps less 'dramatic' – in the operatic sense – than the Erato/Farncombe with the Bach Festival (and certainly longer), Harnoncourt's reading still has a freshness and undoubted panache; and even if it could have been given a touch more elegance occasionally, it is free from the 'aesthetic' rigours of which Harnoncourt is sometimes accused. A good, broad recording too, which, if not quite as sharp and keen as contemporary reproductions, still serves soloists, orchestra and chorus well. It is attractively packaged too, with an extensive booklet and full libretto. Recommended. [A/B:1\*/1]

Roger Bowen

**SAINT-SAENS: Symphony 3** □ **Phaeton** □ **Le Rouet d'Omphale**  
Orch Nat France/Ozawa  
EMI EL27 0499 1 digital (CD: CDC 747 4772, MC: EL27 0499 4)

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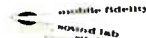
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Crazy in the Ivesian sense it may not be, but Ozawa's way with this catholic confection has a likeably breezy relish about it. Rhythms could be tauter in the outer movements of the symphony, and the wind seem to be tonguing their hardest against the plushy Salle Wagram acoustic; where this really pays off is in that shameless French mix of religious and sensual in the *Poco Adagio*, the ambience supporting the strings as they squeeze every ounce of knowing voluptuousness out of the phrases. And, since Philippe Lefebvre's contribution from his Chartres coign of vantage is bound to sound like po-faced piety, why not push the contrast for all it's worth? From the scherzo, with its bizarrely scored *presto* section registering in spite of the muddled textures, through to the seven-second echo with which the organ crowns the proceedings, everything basks in such high spirits that you can't help feeling better for it: a far cry indeed from the pompous perorations we've had in the past.

As if to advertise the symphony's kinship with Saint-Saens' lighter works, the recording frames it with his two finest shorter pieces. Compared with Dutoit's buoyant, brilliant accounts on Decca, both sound slightly cumbersome: this *Phaeton* seems to be driving his chariot through the clouds, never quite riding above them, and *Le Rouet d'Omphale* is here most remarkable for the brooding central section which spreads over the scene like a summer storm. Point taken, though: Hercules at the spinning wheel can hardly have been an elegant handmaid! [A/B:1/2] **David Nice**

**G B & G SAMMARTINI: Concerti & Sinfonie Ensemble 415/Banchini**  
**Harmonia Mundi HMC 901245** (63m 01s) digital (LP: HMC 1245, MC: HMC 401245)

I greatly enjoyed the LP (April, p101): splendid and varied music by the influential Sammartini brothers, played with fire and poise by the excellent small group Ensemble 415 under its talented director and leader, Chiara Banchini. The clarity and atmosphere of the recording are enhanced on the silver disc, though in either form it is top class. [A:1] **Peter Branscombe**

**SATIE: Gnossienne 1-6** □ **Embryons Deséchés** □ **Avant-Dernières Pensées** □ **Pièces Froides** □ **Sonatine Bureaucratique** □ **Gymnopédie 1, 2 & 3** □ **Véritables Préludes Flasques** □ **Les Trois Valses Distinguées du Prévieux Dégoûte** □ **Sarabande 3**  
**Roland Pöntinen (pno)**  
**BIS CD-317** (61m 01s) (LP: LP-317)

To use four microphones to record a single piano seems, and sounds, like overkill. The result is heavy and somewhat congested, with little air around the instrument, and this lack of delicacy is reflected in the performances. Roland Pöntinen, a young student of the Stockholm College of Music, is brave to tackle these works, for Satie is perhaps the worst composer that a young pianist could choose to record. His writing for piano is deceptively simple and demands great sensitivity and maturity if the multi-layered sophistication of his music is to be captured. Pöntinen's style is basically romantic and he lingers lovingly over the more grave and melodic moments, taking the sudden extravert twists with grandeur and élan. But this weighty approach misses the senses of fantasy and irony behind even the most beautiful of Satie's pieces; and when wit and whimsy are needed Pöntinen fails to find the right lightness of touch. No doubt time will enable him to project more of Satie's great individuality, and though his playing lacks real coherence he does give us a different insight into the music by producing some beautifully lush moments, including some of almost Lisztian fire. [B:2] **Sue Hudson**

**D SCARLATTI: Keyboard Sonatas**  
**Andras Schiff (pno)**

**Hungaroton HCD 11806-2** (56m 35s)  
 ® 1977

These sonatas, long the domain of pianists, are constitutionally well suited to Andras Schiff, and I am still an admirer of his neat fingerwork, his delicate, well formed melody-playing and his rounded, unforced piano tone. All virtues which serve these comparatively brief and delightful sonatas very well. The recording too is mellow and clean, and whilst the instrument is set slightly too much off-centre, it does sound appropriately intimate. [B:1] **Roger Bowen**

**SCARLATTI: 14 Sonatas**  
**Peter Katin (pno)**  
**Claudio CR 35102-D** (61m 51s) (MC: CR 35102-C) (Harmonia Mundi)

Katin's selection of sonatas is perceptively made with a view to displaying the astonishing range of Scarlatti's ideas, both technical and musical, and he brings to his playing all the professionalism and pianistic command one has come to expect of him. The days when Scarlatti relied on pianists for a wide exposure, however, are long gone, and potential record-buyers may justifiably ask of a piano recording that it bring to the works in question some special justification for its putative inauthenticity. From that point of view I'm sorry that Katin hasn't used Scarlatti's own inventiveness as a foil for more imaginative and illuminating pianism. History notwithstanding, there are things about this music which can better be revealed on the piano than on the harpsichord, but they involve devices more subtle than mere crescendo and diminuendo, which strike me here, in any case, as overworked but underused. Few great composers have repeated more material in less time than Scarlatti in his sonatas (a much-neglected challenge to the player's creative imagination) so it's doubly to be regretted here that variety is so often eschewed in favour of what readily sounds like a formula. [A:2/3] **Jeremy Siepmann**

**SCHUBERT: String Quintet in C**  
**Brandis Qu/Jörg Baumann (vlc)**  
**Teldec 8.43444** (54m 54s) ® 1980

Here is a weighty, carefully considered and finely played account of the String Quintet. I could not trace an issue of the LP in Britain, but can comment that the analogue sound in its digitally transcribed CD form is both rich and clear; the recording has presence, depth and a good spread, and no attempt has been made to take the edge off the healthy rasp of bows on strings in the powerful climaxes. Tempi are well considered and attractively sustained, with room left for the ebb and flow that help give life to Schubert's expansive structures, and a proper regard for *ppp* passages and rests. A very likeable issue. [A:1] **Peter Branscombe**

**SCHUBERT: Piano Trio in B<sup>b</sup>, D898** □ **Adagio D897 'Notturmo'**  
**Gerhard Oppitz (pno)/Dmitry Sitkovetzky (vln)/David Geringas (vlc)**  
**Novalis 150 002-2** (49m 43s) digital (LP: 150 002-1, MC: 150 002-4) (ASV)

**SCHUBERT: Piano Trio in E<sup>b</sup>, D929** □ **Allegro D28**  
**Oppitz/Sitkovetzky/Geringas**  
**Novalis 150 003-2** (59m) digital (LP: 150 003-1, MC: 150 003-4)

This is a very attractive pair of CDs, and the fact that they are available separately will be welcomed by readers wanting to fill gaps in their collections. The situation is a bit complicated. The Borodin Trio (Chandos) give warm, large-scale readings of the two Trios but do not offer the valuable fillers; the Beaux Arts (Philips) give the two smaller works in their 2-CD box, but leave out the first movement repeats – which Oppitz, Sitkovetzky and Geringas observe,

much to the benefit of this gloriously expansive music. Indeed, so generous are they in their repeats that it is the more surprising, and regrettable, that they do not restore the two cuts that Schubert made in the finale of the E-flat work, doubtless reluctantly – the missing 100-odd bars are readily available in the New Complete Edition. There is much to be grateful for, as it is: three fine musicians pool their resources in the service of some of the most beautiful chamber music ever written, and they have been well recorded, with good balance and lively 'feel'; the one disappointment is a hardening of the piano tone, which in repeated chordal figuration, most obviously in the E-flat *Andante con moto*, is inclined to jangle; a certain thinness in the general sound did not strike me as a disadvantage. Tempi are well chosen, the music breathes, dynamics are carefully but unfussily observed; above all the drama, as well as the poetry and brilliance of the music, is finely conveyed. [A/B:1] **Peter Branscombe**

**SCHUBERT: Wanderer Fantasy** □ **Piano Sonata in a, D845**  
**Maurizio Pollini (pno)**  
**DG 419 672-2** (58m 20s) ® 1974

This is the original LP coupling of these works (the *Fantasia* also appeared on 'Signature' with Schumann's Op.17) and is very fine piano playing indeed. Pollini's keyboard control needs no further advocacy but he has *such* command of timbre, attack and texture (not always easy in Schubert by any means). The slight edginess to the top end of the sound heard in the LP is not vanquished here, and this, with the closeness of the setting and the almost total lack of ambient sound, can make the instrument loom a little. A small price to pay. [B:1\*] **Roger Bowen**

**SCHUBERT: Piano Sonata in a, D845** □ **in G, D894**  
**Radu Lupu (pno)**  
**Decca 417 640-2** (74m 18s) ® 1974, '79

Better value (certainly musically) than the LP version of the A-minor, where we only had the filler of the early E major to complement Lupu's poetic account of the later sonata. Very different from Pollini's reading on DG (see above), not only in tempi, but Pollini's more incisive and chiselled approach contrasts with Lupu's more measured interpretation. An equally mellow view is taken of the gorgeous G major Sonata with its long (and long-phrased) *molto moderato* first movement. The actual piano sound is rich, too, but perhaps a little too relaxing on the ear – certainly when paired with Pollini's DG recording. It is all quite clear and the pianissimos come through beautifully but the quality degrades as the dynamic rises. [A/B:1\*] **Roger Bowen**

**SCHUBERT: Der Wanderer an den Mond** □ **Der blinde Knabe** □ **Der Einsame** □ **Nacht und Träume** □ **Suleika I** □ **Ganymed** □ **Rastlose Liebe** □ **Wanderers Nachtlied, D768** □ **Die Forelle** □ **Suleika II** □ **Der Musensohn** □ **Lied der Mignon** □ **Der König in Thule** □ **Gretchen am Spinnrade** □ **Du bist die Ruh** □ **Im Frühling** □ **An Silvia**  
**Barbara Hendricks (sop)/Radu Lupu (pno)**  
**EMI CDC 747 5492** (59m 32s) digital (LP: EL 27 0434 1, MC: EL 27 0434 4)

I have enjoyed this recital very much. The choice of songs is wide, the arrangement of the recital sensible – and the performances are beautiful. The recordings were made in the Salle Wagram in Paris in November 1985, and the hall is larger than I would consider ideal for lieder. The effect is never less than satisfactory, though I was aware, listening right through, of differing degrees of loudness, and of altered microphone placing between songs. Occasionally, eg. *Ganymed*, Miss Hendricks's tone takes on a shrill edge untypical of the recital as a whole. And the rapid vibrato which aptly suggests the

girlish excitement of some of the songs will need to be watched in years to come if she is going to develop as a lieder-singer to the heights of which she is clearly capable. Her ability to wed line and words is already marked, and she characterizes the varying moods of these songs with care and directness. It will cause no surprise these days that she appropriates quite a number of 'male' songs, and does so with a skill and charm that rebut any criticism. Long phrases are spun with easy breath-control, and she has the ability to inflect a word or phrase so that one will remember it. Radu Lupu is a splendid partner, alert to the mood of each song, now sprightly, now delicately reticent; he is neatly balanced against the singer.

The leaflet, like the recording itself of French origin, is oddly laid out, with German texts first, French second, and English third – the non-linguist is at a disadvantage. Overall [B:1].

Peter Branscombe

**SCHUMANN: Piano Quintet Op.44/MOZART: 'Dissonance' String Quartet, K465**  
*Philippe Entremont (pno)/Alban Berg Qt*  
EMI CDC 747 4392 (58m 33s) digital

For capturing the spirit of the moment, this live recording from Carnegie Hall (1987) cannot be faulted, but only the super-tolerant would select this issue before all others for repeated listening. Philippe Entremont is superbly balanced with the quartet, whose every voice is clearly distinguishable on the sound-stage, but the result is that one is only too aware of how hard the Schumann is being driven, and piece, performers, and listener emerge battered after twenty-eight tense and urgently fought minutes. On the whole, co-ordination is good and dynamics conscientiously observed, but the heavy-handed approach – made all the more obvious by the constantly recurring rasp of bow on string – is inevitably wearing. The Mozart 'Dissonance' suffers from the same lack of refinement and similar moments of unnecessary haste, with little light and shade to refresh the palette. The questions spring to mind here: is the audience so distractingly noisy because the performance is failing to hold its attention, or are the performers being distracted by all the audience noise; and where do all the coughs that inhabit slow movements and quiet passages go during Allegros? Despite these imponderables, this issue is bound to have a captive audience. [B:2/3]

Barbara Jahn

**SCHUMANN: Carnaval, Op.9** □ **Fantasy in C, Op.17**

*Jorge Bolet (pno)*

Decca 417 401-2 (65m 28s) digital (LP: 417 401-1, MC: 417 401-4)

This is Bolet at his most deliberate. Indeed it would seem almost that he set out here to put Schumann's celebrated hatred of empty virtuosity to the test. If so, it's the test, not Schumann, which fails. There is a world of difference, of course, between empty virtuosity and virtuosity itself (not for nothing did Schumann dedicate the Fantasy to Liszt) and it seems a mistaken form of piety to take the coda of the second movement at a tempo which wouldn't tax even a moderately accomplished student in the practice room. And to spurn all elements of bravura in the 'Paganini' episode of *Carnaval* is to be as mysterious (to this listener, anyway) as the 'Sphinxes' in the same work. If Bolet's pianistic credentials weren't so well established, one might conclude here that he was merely capitulating to his limitations.

But it takes all sorts: there are musicians' musicians, virtuosos' virtuosos, and in certain moods (his Godowsky/Chopin recording, for instance) Bolet looks like a clear favourite as the anti-virtuoso's virtuoso.

His pianism, of course, is both commanding and resourceful, and among its noteworthy manifestations here is an unflinching and kaleidoscopic beauty of sound, aided and abetted (is there a

more positive version of this phrase?) by a masterly understanding of the pedals. Reservations apart, these are performances with much to enjoy and more to admire, in which the artist exaggerates nothing except moderation. [A:1]

Jeremy Siepmann

**SIBELIUS: Symphonies 3 & 7**

*CBSO/Rattle*

EMI CDC 747 6202 (51m 20s) digital (LP: EL27 0496 1, MC: EL27 0496 4)

Rattle's Seventh is remarkable. For once the music seems to determine its own pace and shape, the pull of inexorable organic growth carrying all before it, the final C major resolution (an eleventh-hour return to the home-key if ever there was one) always in sight – and, even then, the bleakest C major imaginable. It's as if Rattle is deep-breathing his way through every cadence. As ever, he trusts implicitly in the natural processes of the music. The line is awesomely broad (as witness the burgeoning *Parsifal*-like hymn of the opening pages), the colours dark and intense – those wild upsurging basses of the big penultimate climax felt as well as heard, to say nothing of the clinching *whoop* in the horns like the cry of some angry beast, all contributing to a sense of untamed elemental power.

Symphony 3 is hardly less impressive. Again it's Rattle's astonishing ear for detail: his ability to chronicle the musical argument so rationally, and yet so emotively, that keeps one hanging onto every note. In (i) he finds the ideal tempo: that insistent motivic rhythm in the strings was never more hypnotic – articulation is the key there. And the stillness, the solitude, so potent at the start of the development (hushed dynamics such as only CD can honour) and throughout (ii), where the elusive elegance of the music has rarely been better imagined. I think especially of the middle section, from the mysterious cello statement through to where woodwinds take up the theme, and ghostly pizzicato strings accompany. Plenty of rugged excitement in (iii), the stopped-horn grimaces and bassoon writing uncommonly telling.

These are undoubtedly the best sounds yet from this series: broad-based and solid, honestly balanced, true in perspective. I can hardly wait for Rattle's Fourth. [A:1\*] Edward Seckerson

**SIBELIUS: Symphonies 3-6**

*SNO/Gibson*

Chandos CHAN 8388 & 8389 (4 & 5: 60m 28s/3 & 6: 53m 44s) digital (LP: 1983, '84)

In his LP reviews (July '83, Aug '84) ES welcomed Chandos's recorded sound quality but had serious doubts about the performances of these four symphonies, and now that both Järvi's completed series and the Ashkenazy recordings cover the same ground on CD, it may be wondered whether Sir Alexander's Sibelius is worth pursuing onto silver disc.

Well, the deeply layered, texturally revealing, spaciouly bright and wide-ranging sound captured in Glasgow's SNO Centre is as impressive as ever (albeit complete with its characteristically light string-tone and assertive brass), and while I share some of ES's disappointment with various aspects of performance, Symphonies 3 and 4 are in my view very acceptable. I also found large chunks of 5 impressive – but do admit to nodding off momentarily during the second play-through of 6. So, if you're not a specialist attuned to all the Sibelian subtleties, and can put up with a few lapses of ensemble, try hearing these CDs before discounting them. They may be good enough in parts. [A/A\*:1/2/3]

John Crabbe

**SIBELIUS: Symphonies 5 & 7**

*Boston SO/Davis*

Philips 420 013-1 (MC: 420 013-4) (LP: 1975)

Set against the cloudbursts and skyscapes of

Barbirolli's noble accounts, which these performances now replace at mid-price, Sir Colin's Sibelius is rooted in dark and treacherous soil. Those imposing bass lines and clear-etched textures, hall-marks of the complete cycle (as ES pointed out reviewing the CD issue) rivet the listener at vital moments – sonorously weighting the passage for nine-part strings in the Seventh Symphony, joined by those unmistakable reedy-edged bassoons to anchor the tranquillo sections of the Fifth's Andante. After the vigorously expressed struggles of the first two movements, the finale there is something of a disappointment – too fast for scurrying strings, too restricting for the mighty striding theme; the Seventh is clear-headed and inexorable from first to last. What the recording lacks in immediacy it makes up for in breadth, and I rather think that the ungainly brass textures which other reviewers took to task are, if undeniably too closely caught, fairly representative of the Boston orchestra's one weakness. [A/B:1/1\*]

David Nice

**SPOHR: Notturmo Op.34** □ **Nonet Op.31**

*Consortium Classicum*

Orfeo S 155 871 (LP: digital)

The *Notturmo in C* is a rarity. It was composed in 1815 for Prince Schwarzburg-Sondershausen, and adds a Turkish *batterie* to an ambitious wind composition featuring a posthorn, 2 trumpets, basshorn (a kind of serpent), piccolo, and tierce flute in addition to the usual forces. This should make a splendid effect when the Janissary music appears, which it does first in the Polacca, the fourth of the six movements. Its impact would have been greater had the triangle, bells and bass drum been more prominent; here they make a polite rather than incisive noise. The posthorn and tierce flute are heard in the Trio. The short lively finale also lacks the expected brilliance not, one hastens to add, because of any shortcoming on the part of the players, but because of the relative placement of the instruments. In addition to these bits of jollity there are some superbly written movements, and the long Andante with variations and the beautiful Adagio (which can stand comparison even with Mozart) alone make the piece worth hearing. The *Nonet* has been recorded several times before, with the excellent Nash and the elderly BPO Octet versions now providing the only alternatives. The Nash, coupled with the much recorded Octet Op.32, is superior on most counts to the BPO, but if you wish to sample a really worthwhile rarity and savour superb wind playing excellently recorded this Orfeo is the obvious choice. [A:1\*] Kenneth Dommett

**STAINER: The Crucifixion**

*David Hughes (ten)/John Lawrenson (bar)*  
*Guildford Cath Ch/Rose*

EMI CFP 4519 (LP: MC: TC-CFP4519) (LP: 1969)

Both performance and recording are now showing their age, with the tenor David Hughes wringing every ounce of sentiment via a ubiquitous portamento, and an uncomfortable balance between over-close soloist and distant organ, often indistinct when accompanying. Furthermore, all is bedevilled by hiss. But attention must be drawn to the excellent contribution by the choir, so clear in its diction and sure in intonation. The hymns are beautifully sung, although many verses are omitted and No.4 is missed out altogether. So, with competition from the older, but arguably finer, performance by St John's/Guest, and the more recent offering from Richard Hickox using the mixed voice Westminster Singers, this reissue cannot be recommended as a first choice. [B/C:1\*/3]

Barbara John

**STOCKHAUSEN: Stimmung**

*Singcircle/Rose*

Hyperion CDA 66115 (70m 12s) (LP: A66115) (LP: 1984)

This CD version is very welcome indeed. It has a

closer balance and a sharper projection of detail than the LP, which makes it harder to get involved at first; but this soon gives way to a sense of complete immersion in such haunting music. An ideal performance in an ideal recording. [A\*:1\*] **Benedict Sarnaker**

**STRAUSS: Die Fledermaus**  
Soloists/Philharmonia & Ch/Ackermann  
EMI CFPD 4702 ● (2LPs) (2MCs: TC-CFPD 4702) ® 1960

This was one of the products of the Legge era when Ackermann also recorded *A Night in Venice* and *The Gypsy Baron*, both now alas deleted, but hopefully – given the impetus of this splendidly Viennese performance – to be restored. The tape seems to have been repolished, for the sound is quite sparkling and glittery. And the cast is starry enough in all conscience. Not much is now heard of Gerda Schreyer – one of Furtwängler's Valkyries – but her Rosalinde sets the stamp on the performance, with Wilma Lipp a lively Adele and a sonorous Orlovsky from Christa Ludwig. The male contingent is, if anything, even more illustrious, with Dermota, Berry, Wachter, Majkut and an almost repulsively phlegmy Frisch from Erich Kunz. Karl Terkal is the Eisenstein, another voice which has disappeared from record (though he is still to be heard in minor roles in Bernstein's *Fidelio* and Böhm's *Die Frau ohne Schatten*). Ackermann had just the feel for this kind of music, more 'echt' perhaps than most, even than Boskovsky and assuredly more so than Domingo, but that had such verve as well. [A:1\*]

**Kenneth Dommett**

**STRAUSS FAMILY: Carnival in Vienna**  
Wiener Johann Strauss Orch/Boskovsky  
EMI CDC 747 7192 (58m 32s) (LP: EL 27 0405 1, MC: EL27 0405 4)

This latest sampler of the works of the Strauss brothers – not surprisingly in view of its title – takes *Fasching* as its theme, though the opening takes us to Rome rather than Vienna with Johann's Overture to *Carnival in Rome*, a rarely heard operetta from 1873. Another excerpt from this wholly Viennese view of the Eternal City, the waltz *Carnevalsbilder*, is also included. More familiar is *Du und Du* from *Fledermaus* and *Wine, Women and Song*, surely the epitome of the traditional concept of Carnival. The rest, two waltzes and two polkas by Johann, three characteristically vivacious polkas by Eduard, and one, *Masken-Polka*, by Josef complete the selection.

As with the previous collection, 'Greetings from Austria' (CDC 747 4492), the items are carefully chosen; a few familiar landmarks in an otherwise currently unmapped territory. And as before, the recording is appositely bright and clear, the performances sturdy and thoroughly idiomatic. [A:1] **Kenneth Dommett**

**STRAVINSKY: Symphony in Three Movements**  
□ **Symphony in C**

Bavarian RSO/Davis  
Philips 416 985-2 (52m 34s) digital (LP: 416 985-1, MC: 416 985-4)

Sir Colin is to some extent disadvantaged here by the inherent warmth and homogeneity of the cultured old Bavarian band's sound. Try as they may, they simply can't give him the bright, clean-limbed sonority that this music – and in particular the abrasive motorised rhythms of the *Symphony in Three* – demands. What's needed here is an LSO in its heyday – a leaner and more athletic brilliance.

That said, however, Davis does insist upon, and ensure, tautness and clarity at every turn. The contours are characteristically rugged, the inner-detail plentiful; the rhythms resilient and well-sprung. It's tubby, yes – but it's punchy too. No problems of course in the quasi-baroque

lyrical episodes. The second movement is exquisitely turned, the rosy late-romantic glow of those harp-festooned woodwind solos taking on an almost Bergian character. Davis has a natural star in his delectable first oboe, and that of course is very good news indeed for the *Symphony in C* (virtually an oboe concerto, after all). I like the steady, sturdy *moderato* Davis sets for (i). It admirably serves both the inner sinew and surface cheekiness of the music (Sir Colin has always had a wry sense of humour). And again, there's ample opportunity for witty display from the circus acts of bassoons and flutes in the second movement *Allegretto*. All told then, a mellow but spirited performance played with natural charm and warmly, faithfully, captured by Philips in an immediate, gently ambient recording. [A:1/2]

**Edward Seckerson**

**STRAVINSKY: Firebird – complete ballet** □  
**Song of the Nightingale**  
Seattle SO/Schwarz  
Delos DCD 3051 (68m 15s) digital (John Goldsmith)

There are certainly moments here (little insights, individualities) to tempt me back for more of Mr Schwarz and his orchestra. In *Firebird* his nose for atmosphere is good: he makes much of the lovely 'Round Dance' (elegant, finely-tuned rubatos, though it's a pity that both piccolo and oboe are flat in the reprise); his scintillating tempo for the whirring 'Golden Apples' scherzo almost comes off (the orchestra handles this with great aplomb); the final tableau flowers impressively. Delos make it easy for him, of course, with their open, uncommonly transparent image – Stravinsky's golden-threaded orchestration catching the light most evocatively. The dynamic range is very wide, with startling bass drum and timpani at the appearance of Kashchei's 'monsters'. Their subsequent 'Infernal Dance' is never quite wild enough (is it ever?) but Schwarz does at least clinch it riotously with gorgeously vulgar trombone glissandi in the closing bar.

*Song of the Nightingale* is excellent. I like, particularly, the way in which Schwarz homes-in on the 'orientalisms', the primitive ethnic cast of the instrumental writing – the shrill E-flat clarinet and nasal bassoons. Again the percussion (at its most inventive, of course, in the 'mechanical' nightingale section) is excitingly profiled. If the coupling appeals – investigate. [A/A\*:1/2] **Edward Seckerson**

**SUDER: Kleider machen Leute**  
Soloists/Bavarian Rad Ch/Bamberg SO/Mund  
Orfeo S 124 863 ● (3 LPs) digital

What a pleasant surprise! If we had expected an operatic setting of Keller's story *Kleider machen Leute* 'Clothes make the man', then Zemlinsky's would have been a welcome addition to the discography. But Joseph Suder's is the setting that reaches the catalogues. He is hardly known here (no entry in *New Grove* even) though in his native Germany he is respected as music-teacher and composer. He lived from 1892 to 1980, and this his only opera was written between the mid-'20s and -'30s. It was first staged at Coberg in 1964. This complete recording was finished in '84. It isn't absolutely the first of music from the opera – the March and some of the ballet music have been available in German lists before.

The story tells of a handsome young tailor who is taken for a Count, falls in love with and is loved by the burgomaster's daughter of a small Swiss town, is unmasked before his wedding, and driven out of town – but is found by, and united with, the girl. Little of Keller's delicate wit remains; this is a full-blooded late Romantic opera, short in memorable melodies, but with splendid choral scenes, and two rousing duets for the lovers. The music is busily polyphonic, including virtuoso fugal writing; there are also important danced, mimed, and spoken scenes, and violin solos for the musical tailor. The cast

(many of the names unfamiliar) is led by Klaus König, a brave, not quite mellifluous enough tenor hero, and Pamela Coburn, cautious and reliable rather than radiant; the best singing comes from Wolfgang Probst as the rival suitor; Morris Morgan is a suitably pompous yet kind-hearted burgomaster – and the others are never less than adequate. The choral singing is strong and atmospheric, the orchestra very decent, and Uwe Mund conducts with fire and conviction. The insert contains a plot-summary in English; there is also a German libretto, though it differs in many respects from the sung text. The recording is of high quality, easily accommodating the big climaxes and achieving good balance between voices and orchestra. Only the long second side reveals any falling-away in tonal quality. There is no attempt to suggest stage action, but this is a valuable and very pleasing issue. [A/B:1/2] **Peter Branscombe**

**SULLIVAN: Cello Concerto in D/HERBERT: Cello Concerto 2/ELGAR: Romance**  
Julian Lloyd Webber (vlc)/LSO/Mackerras  
EMI CDC 747 6222 (46m 53s) digital (LP: EL27 0430 1, MC: EL27 0430 4)

There's not much in it, but the CD sound here is slightly more open than on LP (March '87, p104) with an agreeable degree or two of extra clarity to the generally overfilled orchestral texture. The performances are splendid though, and worthwhile in either medium. [B/C:1\*/1] **Doug Hammond**

**SULLIVAN: Patience**  
D'Oyly Carte Op Col/Godfrey  
Decca 414 429-2 (2CDs, 112m 55s) ® 1961

Seasoned G & S fans will welcome this transfer. Although the orchestral sound is dull, particularly in the overture, the comical and lyrical content is sparkling, with good microphone presence and clear stereo-stage disposition. There are vintage performances by John Reed (Bunthorne), Donald Adams (Col Calverley) and Gillian Knight (Lady Jane). Philip Potter is among my favourite D'Oyly Carte tenors and deals admirably with that amiable aristocratic duffer, the Duke of Dunstable. Spoken dialogue (included) is as well-paced as song, and one can almost overlook the palely-sung title role (Mary Sanson).

A pity to break the longest single item, the first-act finale: it would have been so easy to start it on the second disc instead of at the end of the first! Newcomers to the work, needing to know who is singing what, are poorly served by a clumsily written synopsis and a failure to identify the voice-types of the characters. [B:2] **Arthur Jacobs**

**TCHAIKOVSKY: Piano Concertos 1 & 3**  
Philip Fowke (pno)/LPO/Boettcher  
EMI CFP 4518 ● (MC: TC-CFP 4518) ® 1984

Apart from one overspread chord and a few cases of passage-work speeding in the third movement, idiosyncrasy is surprisingly absent from Fowke's performance. Clarity of line and a justifiable restraint in the *rodontante* – save for the final double-octaves – steer it in to middle ground. Not that it's neutral: if fantasy is missing from the *Andantino* (the strings, too, make the central *Prestissimo* very dull) there's plenty of it throughout the first movement. The finale hangs together well and Boettcher, though indulging some nasty portamento from time to time, gets a clear, bright sound from the LPO, neatly reflected by the airy recording. Nothing short of sheer bravura could carry the torso of the Third Concerto along, and it sounds too plain here. [A:1/2] **David Nice**

**TELEMANN: Chamber Music – Trio Sonatas in d for recorder, violin & continuo**  
□ in g for oboe violin □ continuo □ in F for

recorder, gamba & continuo □ Quartets in F for recorder, oboe, violin & continuo □ in G for violin, oboe, gamba & continuo □ Concerto in A for recorder, oboe, violin and continuo  
*Chandos Baroque Players*  
**Hyperion A66195** ● digital

Baroque specialist collectors may recall an excellent 2LP set of 10 Trio Sonatas by Telemann, issued about ten years ago by Teldec/Telafunken, played by Boeke, Harnoncourt, Möller and van Asperen; that set convinced me of Telemann's significance as a writer of chamber-music, and I have used it to convert several sceptics since. Well, this new single disc is of a similar aristocratic quality; once again, I leave each work marvelling that Telemann can still be so under-rated, and delighted by the performance I have just heard (the first time, and repeatedly). But this time, the performers are all comparatively young and based in this country, rather than in Europe. They, too, deserve to be named: they are Rachel Beckett (treble recorder), Valerie Darke (oboe), Alison Bury (violin), Mark Caudle (cello and viola da gamba) Melvyn Tan (harpsicord) and Richard Tunnicliffe (cello in the works calling for 'gamba').

Not surprisingly, Hyperion's recording is just right for the performance in context (here Ford Abbey Dorset, last summer). This is certainly one for the buying list. [A:1\*] **Stephen Daw**

**VAUGHAN WILLIAMS: Norfolk Rhapsody** □ **In the Fen Country** □ **Fantasia on a theme by Thomas Tallis** □ **5 Variants of 'Dives and Lazarus'**  
*LPO/Thomson*  
**Chandos CHAN 8502** (59m 15s) digital (LP: ABRD 1212, MC: ABTD 1212)

This fairly standard collection of one-movement works by Vaughan Williams from the tried and tested team of LPO/Thomson should, in theory, be an easy recommendation, but a number of inadequacies lessen its desirability. Although the readings are typically perceptive and absorbing, and the playing generally to a high standard, in the *Tallis Fantasia* the basses find themselves just behind the beat on too many occasions, possibly because of the lively acoustic of All Saints' Tooting, which may have confused their aural perceptions. This same acoustic beautifully supports the more subdued sections, and *In the Fen Country* is thus particularly effective, but in those piece in which the textures are more thickly scored, and the volume is consistently higher, the resonance produces a meshed, edgy quality that is far from gratifying. In the later stages of the *Tallis Fantasia*, for example, the listener has to work at appreciating the many qualities of the performance, as they are neither assertive nor self-evident. Comparison with, say, the ASM/Marriner CD readings of this piece and *Dives and Lazarus* shows the degree to which it is possible to maintain smoothness and detail in recording without having to restrict dynamic range. For the present issue then, a qualified welcome. [A/B/C:1\*/2]

**Doug Hammond**

**VIVALDI: 'L'Amoroso'**

**Concerto for strings in A, RV159** □ **Concerto in E for violin, strings & continuo 'L'Amoroso' RV271** □ **Concerto in e for bassoon, strings & continuo RV484** □ **Concerto in G for flute, strings & continuo RV436** □ **Concerto in d for viola d'amore, lute, strings & continuo RV540** □ **Concerto in G for oboe, bassoon, strings & continuo RV 545**  
*The English Concert/Trevor Pinnock*  
**DG 419 615-2** (56m 57s) digital (LP: 419 615-1, MC: 419 615-4)

Not only is this my favourite English Concert record to date; it's also one of my favourite Vivaldi records from recent years – and the general standard has been quite high, too. The

concertos all date from Vivaldi's 'maturity', between about 1720 and the late 1730s, probably – although if and when Vivaldi had an 'immature' phase musically, I am unaware of it. The concertos have been chosen according to their quality and their currency in Northern Europe in Vivaldi's lifetime, it appears. The soloists all play superbly, and the arrival of Jaap ten Linden (a Dutch gambist, violinist and cellist) in the bassline, together with the most affectionate accompanying I ever remember hearing from Trevor Pinnock, produce a sensuous atmosphere of dialogue that promises really well.

The delicate precision of Milan Turkovic's bassoon and the filigree daintiness of Nigel North's lute are alike captured to perfection in an excellent recording which has life, proportion, balance, depth and immediacy in just the right degrees. [A\*:1\*] **Stephen Daw**

**VIVALDI: Violin Concertos in e, RV277 'Il favorito'** □ **in E<sup>b</sup> RV253 'La tempesta di mare'** □ **in A, RV353** □ **in E, RV271 'L'Amoroso'**  
*Monica Huggett (vln)/London Vivaldi Orch*  
**ASV CD GAU 105 R** (43m 49s) (LP: GAU 105)

The good qualities of the LP – lovely recording of an impressively responsive orchestral ensemble led by Roy Goodman, the right width and sense of space for the music and for the style of performance – perhaps come through even better on CD. But for me the whole venture is flawed, by solo playing that needs more contrast of tone, and better control of intonation; we know from Monica Huggett's *Leclair* that she can play well in tune and in style; here it sounds as though it was an 'off day'. [A:1/2]

**Stephen Daw**

**VIVALDI: Violin Concertos Op.4, 'La Stravaganza'**  
*Monica Huggett (vln)/AAM/Hogwood*  
**Oiseau-Lyre 417 502-2** (2CDs 100m 57s) (2LPs: 417 502-1, 2MCs: 417 502-4)

The high quality of both recording and playing which I noted when I heard the LP version in early pressings is most effectively reinforced in the quality of the CDs; the silent surfaces add to one's relishing of the 'papery' string tone of the band and the sweet, tuneful lines of the soloist. The accompanying documentation (by Christopher Hogwood) is also full and absorbing. Excellent. [A/A\*:1\*] **Stephen Daw**

**VIVALDI: 5 Concertos for Recorder & Strings – Concerto in D, RV427** □ **in A, RV108** □ **in F, RV442** □ **in C, RV443** □ **in A, RV448**  
*Laszlo Czidra (rec)/Franz Liszt CO/Sandor*  
**Hungaroton HCD 11671-2** (57m 02s)

This is an agreeable recording without any outstanding feature of individuality or stylistic revelation. Czidra is a controlled player of zest and verve, and the orchestral ensemble plays with a sense of relish for Vivaldi. However, there is none of the stylistic sensitivity of Hungary's Capella Savaria and the whole concept strikes me as about twenty years out-of-date.

The sound has been faithfully recorded, although it struck me as tonally lush and broad for this kind of music. However, details of phrasing which are missing from the actual performance cannot be 'inserted' even by very good engineering, and there's something a little imprecise here. [B/C:2] **Stephen Daw**

**VIVALDI: Bassoon Concertos (Vol.2) – in C, RV474** □ **in F, RV487** □ **in C, RV476** □ **in C, RV469** □ **in G, RV494** □ **in C, RV470**  
*Daniel Smith (bsn)/ECO/Ledger*  
**ASV DCA 571** ● digital (MC: ZCDCA 571)

This is the second volume of a projected series aiming to cover the whole of Vivaldi's output of 37 bassoon concertos – a delightful prospect,

indeed. The first two volumes have established that the readings will be direct and extravert in style, with briskly positive outer movements and reflectively eloquent slow movements; but there will be no great subtlety from either soloist or orchestra – this is strictly Vivaldi for those who find most period-instrument readings over-affected, and who care little for modern attempts to revive the tastes and techniques of our forebears beyond the effect that the notes inspire in a non-specialist modern musician.

Daniel Smith certainly knows both how to play nimbly and with a wide range of tone; he combines very effectively with the ECO, and Philip Ledger has produced a well-integrated interpretation of the type indicated above. The recording is quite acceptable, but it sounds a little unsubtle and shallow in depth by today's best digital standards. [B:1/2] **Stephen Daw**

**WAGNER: Die Feen**

*Gray/Lövaas/Lukil/Anderson/Studer/Alexander/Hermann/Rootering/Helm/Bracht/Moll/Bavarian RSO & Ch/Sawallisch*  
**Orfeo C 062 833** (3CDs, 165m 24s) digital (R) 1984

This important and enjoyable issue was warmly welcomed when the LPs appeared nearly three years ago. It would be even more welcome were it, as it claims to be, a 'complete recording'. Those misleading words were taken at face value by reviewers, evidently unaware that numerous cuts, totalling perhaps 50 minutes of music, were perpetrated on the score. In all other respects this is indeed a splendid issue. Recorded at a concert performance in Munich in 1983 – evidently with some later re-takes – it is sung by a very strong cast (Kurt Moll is heard for no more than 75 seconds), in which despite understandable signs of strain Linda Esther Gray (after an uncertain start) and John Alexander acquit themselves nobly as the fairy and her human husband, and a roster of fine sopranos and basses give much pleasure. The choral and orchestral contributions are also first-rate, and the recording is well balanced, three dimensional – and largely free of audience noise. The booklet contains a perverse note and badly laid out libretto (English, German, French). Wolfgang Sawallisch is a persuasive advocate for the twenty-one-year-old Wagner's first completed opera, a fascinatingly eclectic work; no Wagnerian should be without it. [A:1]

**Peter Branscombe**

## COLLECTIONS

### ARTISTRY OF JOSEPH KEILBERTH

**HAYDN: Symphonies – 85 'La Reine'** □ **101 'Clock'**  
*Bamberg SO/Keilberth*  
**Teldec 8.43413** (44m 28s) (R) 1960

**BEETHOVEN: Symphonies 1 & 2**  
*Bamberg SO/Keilberth*  
**Teldec 8.43412** (60m 15s)

**R STRAUSS: Orchestral music – Salomé: Dance of 7 Veils** □ **Rosenkavalier: Waltzes** □ **Intermezzo: 4 Interludes** □ **Die Schweigsame Frau (Silent Woman): Potpourri (Overture)**  
*Bavarian State Orch/Keilberth*  
**Teldec 8.43446** (52m 44s) (R) 1967

Joseph Keilberth (1908-68) was a fine all-round conductor, still sufficiently esteemed in Germany to motivate this ongoing series, some items delving back nearly 30 years. The Haydn was published in 1958 (UK 1960), Beethoven in 1959 (no previous UK release), and Strauss in 1963 (UK 1967); but these early stereo recordings all come up well in the CD remasterings. There's a little hiss, but it hardly obtrudes, and the sound has a bright, fresh quality, with good

separation in clearly defined hall acoustics. While never accompanied by edginess, the brightish balances are nevertheless sometimes rather assertive; but one can easily find the right volume and tonal settings for a convincing effect.

The two Haydn symphonies are well played, although without that last ounce of spriteliness which can so lift the spirit. But the clock does tick beautifully in the Andante of 101 – with chuffing woodwind sounding delightful in the hall's ambience. [B:2/1] The Beethoven splits between a somewhat cool No.1 and an excellent No.2 – especially the outer movements, with a quite splendid (i) to epitomize the thrusting young Beethoven, and an appropriate humorous bounce in (iv). [B:2/1\*]

The Strauss comes over with enthusiasm but not a great deal of polish. It is almost as if the Bavarian players thought of Richard more as a member of the *other* Strauss family, so that (Salomé's dance apart) the scores' subtleties tend to be underplayed. It's all enjoyable nevertheless, but the booklet with this CD says nothing about the music thereon. [B:2]

John Crabbe

#### MUSIC FOR BRASS & PERCUSSION

Pieces by Britten, Copland, Grieg, Holst, Janacek, R Strauss, Vaughan Williams  
*London Brass Virtuosi/Honeyhall*  
Hyperion CDA 66189 (56m 21s) digital

The vinyl version of this splendid recording (July '86, p111) came on particularly quiet dmm pressings; but such silence rarely lasts on LP, and as this CD exactly replicates all the sonic and musical glories of the black disc, nothing more need be said. I would just remind old-fashioned hi-fit fanatics that the huge percussion crashes in Copland's *Fanfare for the Common Man* are guaranteed to get the blood pulsing, while Holst's *Moorside Suite* must surely pluck at the heart-strings of any English listener in touch with our cultural roots. [A\*:1]

John Crabbe

#### THREE OBOE QUINTETS

CRUSELL: *Divertimento in C/R KREUTZER: Grand Quintet in C/REICHA: Quintet in F*  
*Sarah Francis (ob)/Allegri Qt*  
Hyperion CDA 66143 (48m 52s) © 1985

Pleasing works, sparkingly played. The Crusell is particularly endearing, even if it is the slightest of the three. KD (in Feb '85) welcomed the LP on all counts, praising the 'faithful, well spaced, and warmly resonant' recording; the CD is clean and has good presence. Strongly recommended. [A:1]

Peter Branscombe

#### FRENCH OVERTURES

By Hérold, Auber, Adam, Méhul, Boieldieu, Cherubini, Grétry  
*Munich RO/Redel*  
Pierre Verany PV 786104 (69m 11s) digital (Conifer)

On the face of it, performances of eight French Overtures spanning the mid-18th to the mid-19th centuries, given by a German orchestra, may not appear to be an entirely attractive package, but here this is far from the case. These are excellent, tight readings that forfeit none of the moments of delicacy and humour characteristic of this form, despite an obvious attention to precise co-ordination and intonation. The ubiquitous woodwind solos and passages doubling in octaves and thirds are a delight, and though I sense some unnecessary haste in the strings' playing of Cherubini's *Medea*, and in the exposed side-drum of *Le Magnifique* (Grétry), these prove to be surprising exceptions. There is simple but beautiful music here, for example Méhul's *Chasse du Jeune Henri*, as well as the expected bombast and histrionics, but it is all so well done that what can so easily sound trite is

thoroughly convincing.

Happily the recording is equally good. A concert-hall venue is suggested by the distant setting of the orchestra and by the broad swathe of sound, captured with excellent clarity in all but the most thickly scored and dynamically abrasive sections. The finely reproduced timbres in all divisions of the orchestra are particularly praiseworthy, and one is allowed plenty of time to muster breath at the end of each item before the arrival of the next. A well recommended 69m. [A\*/A:1\*/1]

Barbara Jahn

#### OLYMPIA'S LAMENT

Works by Monteverdi and Sigismondo D'India  
*Emma Kirkby (sop)/Anthony Rooley (Chitarone)*

Hyperion CDA 66106 (46m 25s) (LP: A66106, MC: KA66106) © 1983

The countless admirers of Emma Kirkby's vocal style and unquestionably keen musical mind will not need my encouragement to rush to their dealers for this. Those who find her recorded tone occasionally too piercing, and her approach sometimes too cool, ought to listen again. These pieces by Monteverdi and D'India – arguably the former's most accomplished musical contemporary – on the theme of the unhappy fate of Ariosto's heroine, offer her much opportunity for not only heavy emotion, as in Monteverdi's large *Lamento D'Olimpia*, and for dramatic declamation in D'India's *Diana*, but also for a much lighter touch in passages of almost throw-away vigour: as in *Maledetto Sia L'Aspetto* by Monteverdi. Inevitably the vocal line carries the drama forward and the main recording spotlight falls on the soprano. She is centre and quite close and, as my opening remarks hinted, is warmly recorded. The chitarone is quietly voiced, but there may have been a case here for projecting its harmonic support a little more. [A:1\*]

Roger Bowen

#### AWAKE THE TRUMPET'S LOFTY SOUND

Works by Bach, Buxtehude, Charpentier, Handel, Mouret, Purcell, A Scarlatti  
*Hannes, Wolfgang & Bernhard Läubin (tpi)/Simon Preston (org)*

DG 419 245-2 (63m 14s) digital (LP: 419 245-1, MC: 419 245-4)

Here is a truly delightful record. The combination of three trumpets and organ, with the occasional addition of timpani, proves irresistibly attractive in the hands of these talented players. The brothers Läubin, who are aged between 28 and 21, are splendidly equipped trumpeters, with poise as well as youthful élan. Simon Preston accompanies throughout with deftness and just the right degree of modesty and exuberance; his four organ solos are welcome as much for their own beauty and brilliance as for the contrast in sonority. And Norbert Schmitt's timpani add their own impressive contribution to a well-chosen and generous programme. Some of the transcriptions were made specially for this recital; almost all work very well, though trumpets are not ideally suited to slow chorales. The recordings were made in Lübeck Cathedral, so it is appropriate to have two fine pieces by Buxtehude, and also four by Bach. The long reverberation-period must have posed problems for the engineers, yet they have been triumphantly solved: each line is clear and bright, with plenty of atmosphere and no trace of fuzziness. Brilliant. [A\*:1\*]

Peter Branscombe

#### PHILIP JONES ENSEMBLE: Grand March

Grand March (Aida)/Marche Lorraine/Sambret-Meuse/Old Comrades/Marching Thro' Georgia/Shukuten March/Colonel Bogey/ The Dam Busters/Entry of the Gladiators/Under the Double Eagle/Liliburlero/Radetzky March/Pomp & Circumstance 1/The Wedding March/March Militaire/Grand Coronation March

Philip Jones Ens/Howarth

Decca 417 329-2 (62m 18s) digital (LP: 417 329-1, MC: 417 329-4)

I have reservations about the use of a church (St Barnabas) for this recording. The acoustic gives a marvellous open and reverberant sound, and the miking is very natural, but frequency extremes are lost and one is seldom aware of the pulsing drums and clashing cymbals, so the essential rhythmic drive is considerably lessened. Without the full impact of a less natural but more vivid recording the dynamic contrasts are smeared, again robbing these usually so invigorating pieces of their visceral magic. The between instruments is oddly swabby on some tracks, with individual voices lost amongst louder competition even when taking solo parts. I found myself wishing for a touch of subtle multi-miking. It is difficult to judge the performances given the nature of the recording, but I admit to feeling that some marches were taken too slowly, and that most wanted greater rhythmic zip and contrast. Only on grand tuttis like those at the beginning of *Marching thro' Georgia* and *Entry of the Gladiators* do the goose-bumps begin to rise, and the Grand March from *Aida* is very tame and sluggish.

It is very tricky to rate this CD, as many readers and fans of the Philip Jones Ensemble may well enjoy the opulent acoustic without missing that last degree of punch, in which case it's an [A]. But for those who like to be carried away by the sheer power and swagger of the march it's a [B:2]

Sue Hudson

#### GRANDI VOCI ●

GERARD SOUZAY – Recital of Schubert Lieder  
*Gérard Souzay (bar)/Jacqueline Bonneau (pno)/Dalton Baldwin (pno)*

Decca 417 453-1 (MC: 417 453-4) © 1950-56

MARIA CHIARA – Recital of Italian Operatic Arias

*Maria Chiara (sop)/Vienna Volksoper Orch/Santi*

Decca 417 454-1 (MC: 417 454-4) © 1971

IRMA KOLASSI – Recital of songs by Chausson, Debussy & Ravel

*Irma Kolassi (m-sop)/Jacqueline Bonneau (pno)/André Collard (pno)/Geoffrey Gilbert (flü)/William Pleeth (vlc)/LPO/Froment*

Decca 417 559-1 (MC: 417 559-4) © 1953-55

MARIO DEL MONACO – Recital of Italian Operatic Arias

*Mario del Monaco (ten)/Orch of Acc di Santa Cecilia, Rome/Erede*

Decca 417 508-1 (MC: 417 508-4) © 1952-54

Three winners here and one very much an also-ran. Souzay is as successful as a lieder singer as he is in his native French repertoire. The mono recording comes over extremely well, with the voice sounding very lifelike. There are some first-rate interpretations of Schubert here. *Erlkönig* being particularly impressive. There are fine accompaniments by Jacqueline Bonneau and in the case of *Seligkeit* by Dalton Baldwin. [H:1\*]

This reissue was Maria Chiara's first recital disc and dates from 1971. The recording of voice and orchestra is excellent. This is really lovely singing with a superb 'O Patria Mia' (*Aida*), while the *Bohème* excerpts are equally fine. [A:1\*]

Irma Kolassi sings Ravel's *Cinq mélodies populaires grecques* in the original Greek, while elsewhere she sings in immaculate French. Her interpretations are highly individual and artistically superb. [H:1\*]

Simply as a voice Mario del Monaco deserves a place among the 'Grandi Voci'. His robust tenor was a magnificent instrument, but the almost unrelieved forte or fortissimo makes many of his recordings highly melodramatic, and eventually tedious and insensitive. [H:2/3]

John Freestone





# ROCK/POP/JAZZ ▶

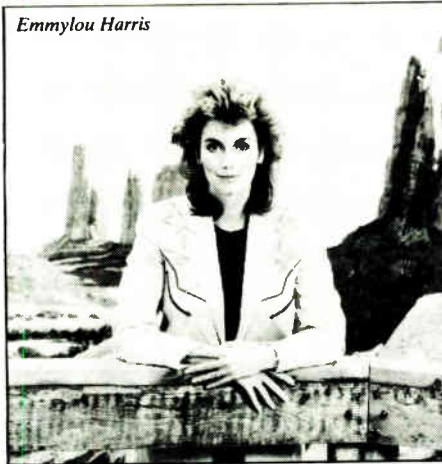
**DOLLY PARTON, LINDA RONSTADT, EMMYLOU HARRIS: TRIO**  
Warner Brothers 925 491-1

**EMMYLOU HARRIS: THIRTEEN**  
Warner Brothers 925 321-1

**NANCI GRIFFITH: LONE STAR STATE OF MIND**  
MCA MCF 3364

**NANCI GRIFFITH: THE LAST OF THE TRUE BELIEVERS**  
Rounder Europa REU 1013

Parton, Ronstadt and Harris' attempts to piece an album together from a saga of almost Forsythe dimensions. The threesome first got together some ten years ago and, after countless difficulties, recorded a number of tracks before Dolly ran into contractual problems and the project was shelved. Now, with Parton finally cut adrift from RCA, the former Porter Wagoner band-singer, the one-time Stone Pony and the Hot Band leader have again merged their talents to take up where they left off a decade ago. Maybe time has taken some of the shine off the idea or maybe we were expecting too much all along. Either way, Trio isn't really the album we all imagined it would be. Not that there's anything really wrong with it. All three ladies of the lariat sing beautifully and the material, mainly down-homey stuff that



Emmylou Harris

includes a nod in the direction of Jimmie Rodgers, is attractive enough – but, somehow, this particular summit meeting doesn't really gel, the low-point being a so-so succatash revival of 'To Know Him Is To Love Him', included with an obvious eye to the singles market, while the most meaningful track is, surprisingly, Linda Ronstadt's rendition of Linda Thompson's mildly vitriolic 'Telling Me Lies'. [A:2]

Emmylou's latest album is, by contrast, more purposeful, immediately aiming for the head,

heart and feet by means of a bustling 'Mystery Train' fired by a Frank Reckard guitar solo. Elsewhere, those wonderful high harmonies strike out over the insistent dobro-ised trundle that is 'Sweetheart Of The Pines' and the honky-tonk, arms-around-the-neck closer that comprises 'Just Someone I Used To Know', where Emmylou's buddy-in-cuddle-up proves to be the attractively smear-voiced John Anderson. A cajun knees-up 'Lacassine Special' sparks side two, while elsewhere there's a tenderly interpreted Springsteen song, 'My Father's House'. No problems with the song fare then, and one only has to list the session-support of such as Duane Eddy, Rodney Crowell, Vince Gill, Carl Jackson and Steve Cash to ensure that final flash of the credit card. [A:1]

After such an eulogistic outburst, you might find it surprising to learn that Nanci Griffith's brace of albums are equally worth keeping near at hand. A singer-songwriter who, in the late '60s, would have been filed under 'folk', Griffith has a frequently inspired way with a lyric ('This sidewalk ice is as cold as steel/I'm not Dorothy – I can't click my heels') she writes the sort of tunes that force you to pucker and whistle and her voice is both creamy and cutting. Like Emmylou she surrounds herself with the sort of pickers that keep polls interesting and, for the life of me, I can't think of anything short of complete bankruptcy that should cause any country-folk record buff to think of passing these albums by. [A:1] both. **Fred Dellar**

**FRED ASTAIRE: TOP HAT, WHITE TIE AND TAILS**  
Saville SVL 184

This neatly follows on from *Crazy Feet*, the 1983 issue from ASV which covered the Astaire shows up to 1932. The 20 tracks from five films of 1933-6 curiously stop short of *Shall We Dance?* and its seven Gershwin numbers, but there are ten of Berlin's best to make up for that omission. You might say that Berlin's amazingly varied work on *Top Hat* and *Follow the Fleet* seemed to be his peak of creativity – but then he went on to write *Annie Get Your Gun* at the age of 58! As well as Berlin, Astaire was fortunate in being given Youmans, Porter and Kern to write for him in Hollywood. It's Kern's 'A Fine Romance' which, according to Alec Wilder's history, 'sounds as if it had been written for only one person' – but most of the songs here are perfectly tailored to Astaire's style, a style which he himself expressed as a songwriter; his 'Building Up to an Awful Let-down' is here too. These are not soundtrack versions; most are with the orchestras of Leo Reisman and Johnny Green, but only the purists will complain that without Ginger Rogers taking her part in duets these are not *echt*-Astaire. There are a few samples of his tap-dancing to remind us of the essential ingredient of those films. They were not all good films; to see them now is to put up with slow-moving trivia while waiting for the set-pieces. But was there any other Hollywood star who never had to sing a bad song? [H]

**Denis Argent**

**HANK BALLARD AND THE MIDNIGHTERS: LIVE AT THE PALAIS**  
Charly R&B CDX 16

I was there, I really was! And I admit that I sometimes couldn't believe it, because Ballard, the man who taught the world to Twist even before Chubby Checker cottoned on to the bath-towel wiggle, looked as sharp and moved as adroitly as he'd done decades ago. This double-album, recorded at the memorable Hammersmith Palais gig last December, provides some evidence as to Ballard's seemingly inexhaustible vitality. Backed by a funky octet, plus The Midnighters, a vocal trio who looked and sounded as though they'd played the Harlem Savoy as often as Annie had babies, Hank delivered all his old hits from the King era, while The Midnighters opted for a soul history lesson,

wending their able way through classics originally fashioned by Ben E King, Sam and Dave, Jackie Wilson, The Temptations and other true legends. Hardly mindblowing in terms of originality, I'll agree. But the whole onstage gang delivered with such verve and panache, you'd have imagined that the '50s were still with us and that the teenage dancefloor twisters had just mysteriously leapt from some aged video jukebox instead of bussing it down from Shepherd's Bush that very night. Real *déjà vu* stuff but more must than musty. [A:2] **Fred Dellar**

**COUNT BASIE: GET-TOGETHER**  
Pablo 2310-924 from Import Music Service

Deservedly, Freddie Green's picture shares the sleeve with Basie's – and as this record was issued by Pablo before his death in February, it was a fortuitous tribute to the guitarist who had been with Basie (with one short break) ever since 1937. Basie, in his autobiography, calls him 'Mr Holdtogether', and bassist Gene Ramey adds: 'Why Freddie's so great is that he plays the fundamental chord and doesn't get in the way of the piano'. Freddie always played acoustic guitar, and Ramey explains: 'When amplified guitar arrived, not only did the piano player have trouble, but the bass player as well.' And the record has plenty of Green in this 1979 Basie octet to prove those points. Most of the tracks are blues, two at the lovely ambling tempo that best suited Basie and his tenor players. The two here are Eddie Lockjaw Davis and the less famous (but outstanding) Budd Johnson, and there are contrasting trumpet styles from Sweets Edison, mainly muted, and Clark Terry. As well as those blues, there is a nine-minute saunter through five favourite ballads such as 'Talk of the Town' under the title of 'Pretty Time'. It's all great relaxed mainstream music – yet another to remember Basie by. [A\*:1\*] **Denis Argent**

**THE BEATLES: HELP!**  
Parlophone CDP7464392 (34m 21s) AAD CD

**THE BEATLES: RUBBER SOUL**  
Parlophone CDP7464402 (35m 48s) AAD CD

**THE BEATLES: REVOLVER**  
Parlophone CDP7464412 (34m 59s) AAD CD

First the bad news: *Help!* and *Rubber Soul* have

been remixed. Now the good news: this second batch of Beatles CDs is in stereo. Regarding the former point, it means that confusion reigns regarding comparisons with the original releases. Are we to regard the silver versions of *Help!* and *Rubber Soul* as completely different editions, like 12in. remixes of singles? And which ones will be regarded as 'correct' a century from now? I don't dislike these alternative offerings, but the purist in me opts for the vinyl copies, which sound as they should – like they were recorded in the days before Dolby and full-scale transistorisation. One colleague described these as 'Disco Versions'; he's not far off the mark if you believe that CD transfers of archive (pre-digital era) material should be left in their original state. *Revolver*, on the other hand, needed only minor sanitisation to render it suitable for CD, and the result is a wonderful disc with plenty of impact and the kind of detail needed to expose all of the sound effects trickery in which the Beatles were indulging at that time. Just wait until you hear 'Yellow Submarine'... Anyway, I find this trio to be a mixture of odd and/or wonderful, but – as it says in the release to follow – 'it's getting better all the time'. As for ratings? I peg *Help!* at [B:1\*] *Rubber Soul* at [A/B:1\*\*], and *Revolver* at [A:1\*\*\*]. And you thought I automatically gave all Beatles releases [A\*\*\*\*\*:1\*\*\*\*\*]. **Ken Kessler**

**THE CULT: ELECTRIC**  
Beggars Banquet BEGA 80

Move over Wayne Hussey, the real populist metal revival starts here. The gatefold sleeve of this album is bedecked by the Red Indian symbolism with which Ian Astbury is unfathomably obsessed, but from then on it's plain sailing. Everyone knows that 'Love Removal Machine' bears a passing resemblance to 'Start Me Up', but who gives a squeak. Guitarist Billy Duffy unloads over everything in sight and you'd have to be some sort of dull jackanapes not to enjoy it – even the version of Steppenwolf's greaser stomp 'Born To Be Wild'. This is for all pop kids and the pop kid in you. [A:1] **Pete Clark**

**THE CURE: KISS ME, KISS ME, KISS ME FICTION**  
Polydor FIX 813

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albums of impenetrable gloom (try 'Pornography' for laughs) and persuade people to buy them. They produce singles of jaundiced smirkiness and persuade lots of people to buy them and appear on *Top Of The Pops*. Robert Smith wears lipstick all over the bottom of his face and his singing voice plays delicious games of hide-and-seek with any tune it meets. Yet the Cure are one of the two or three most important groups in this country. This new double album is a testimony to the strength of the material the band assembled while basking in the glory of the recent greatest hits set. Recorded in France, *Kiss Me...* displays the full range of Curisms, from the disarming pop of 'Why Can't I Be You', through the essential Cure of 'Torture' and 'Fight', to the epic 'The Kiss' which sounds like nothing so much as Tom Verlaine freaking out with Chic. You either love it or are in need of some conversion. [A:1] **Pete Clark**

**WILD BILL DAVISON: THIS IS JAZZ**  
Storyville SLP4067

This is another set of performances - decently recorded in the circumstances - originally broadcast from New York in the 'This is Jazz' series. The clarinettist is usually Albert Nicholas, occasionally Ed Hall; James Archey and George Brunies alternate on trombone; James P Johnson or Joe Sullivan are sometimes at the piano. The repertoire is very familiar, but was less hackneyed in 1947 when this music was recorded. Some of these men were, indeed, then at their best. Try Johnson's admirable choruses in 'Panama' or Nicholas's solo and ensemble part on 'Everybody Loves My Baby'. Danny Barker's occasional guitar solos are the only weak spots. Though obviously a minor figure, Davison is somewhat underrated. On 'Sleepy Time Down South' one expects him to echo Armstrong, yet he hews a noticeably independent line. His phrases are in fact his own, and, though his vocabulary is not large, they never become time-filling clichés, but are truly felt. Their effect is heightened by a biting attack, a wide, fast terminal vibrato and a range of growls and rasps that he uses even at slow tempos. At its best, as in 'Sensation' here, Davison's music has an abruptness, an immediacy, that is most engaging. [B:2] **Max Harrison**

**MIKE D'ABO: INDESTRUCTIBLE**  
President PTL1084

After years out of the limelight, ex-Manfred Mann vocalist d'Abo has returned with a slick release so polished and hook-laden that it has the potential to give quality pop a new lease on life. After a shaky start - the opening track is pretty weak - d'Abo launches into his own application of the standard Steve Miller chooglin' riff, followed by a ballad, then a track which seems to be tailor-made for Joe Cocker. The years spent as a jingle writer and award-winning song writer for the likes of Rod Stewart have endowed d'Abo with an eclecticism which may confuse those who expect an LP cut from a single dye-lot, but Nick Lowe fans will know what to expect. This LP is probably the best updating of the British 1960s pop mentality yet to be delivered in the 1980s, despite the valiant efforts of admirers from across the pond. [A:1] **Ken Kessler**

**ERIC DOLPHY: OTHER ASPECTS**  
Blue Note BT 85131

Made up of tapes recently found, this is not another *Out To Lunch* left buried for years, but it is something which informs about the late saxophonist/clarinettist's work process. Some of the tracks sound like rehearsal/workshop tapes of new ideas or new combinations. One of them doesn't tell us much - apart from the fact that he was checking out Indian music. Dolphy repeats a figure throughout while somebody counts time - Indian style. But 'Jim Crow' is different. Here

Dolphy is playing alongside an unidentified singer who sounds like she's from a classical background. Even with this slightly mixed bag, the quality which separates Dolphy from mere mortals is abundantly clear. That quality is rare and remarkable because of that rarity. Dolphy fans will want to get this album, but jazz fans not yet familiar with Dolphy's work should overcome their deserved shame, grab hold of *Out To Lunch* and spread slowly outwards. [B:1\*] **Ken Hyder**

**WILHELMENIA FERNANDEZ AND THE ST LOUIS SO: GERSHWIN IN THE MOVIES, VOLS 1 & 2**  
Milan A249 and A250 (C 249/50) from Import Music Service

These two records are in effect a reissue of Milan A215 (reviewed June 1984) on which the singer gave 12 Gershwin songs the typical treatment of an operatic star 'going popular'. The trouble was that Ira's words came across less clearly than they deserve, and that criticism remains. Ten of those 12 songs appear here, with piano accompaniment, and the album is stretched out to double length by four orchestral items: *American in Paris*, *Rhapsody in Blue*, the suite from *Porgy and Bess* and, most interesting, the seldom-heard *Second Rhapsody* which originated as *Rhapsody in Rivets*, background music to New York scenes in a 1931 film with Janet Gaynor as the country girl in the big city. It's interesting, but no more - unkindly, one might say that it is deservedly seldom heard. Having no other recorded version to compare it with, one can only say that the St Louis orchestra, under Leonard Slatkin, is noisy, as the work was meant to be in the film. It was certainly part of my initiation into Gershwin, and today the two records can serve as an appropriate issue to commemorate the composer's death 50 years ago this July. [A/B:1/2] **Denis Argent**

**THE PENGUIN CAFE ORCHESTRA: SIGNS OF LIFE**  
Editions EG EGED 50

Long before anyone came up with the term 'New Age', the Penguins, bless their flippers and fiddles, were in there creating sounds to do the garden by. And, as time has passed, I, and I guess, many others, have learned not only to live with them but also to love them. Not that we should have disliked them in the first place. Nothing about Simon Jeffes and his collection of ukelele, kalimba, cello, violin, viola and triangle specialists makes you want to spit. The trouble was that they fitted nowhere, couldn't be filed under 'pop' nor 'classical'. Also, they rarely delivered 'real' tunes, just annoying snippets of this and that, none of which did more than spin out of earshot whenever you tried to stick a label on them. Occasionally, however, they'd toss in a daft little riff like 'Music For a Found Harmonium' just to drive you mad. And, just when you thought you'd got it out of your head, it'd turn up as the background on a TV commercial and start you banging your noddle all over again. Well, it's been eleven years since the Penguins first waddled into my life and, on the evidence of *Signs Of Life* very little has changed except for the fact that, these days, those dotty riffs are occurring with more regularity. Which means that I'll have to retire to the padded cell for the next six months at least. [A\*:1] **Fred Dellar**

**PLASTICLAND: WONDER WONDERFUL WONDERLAND**  
Enigma 2063-1

Someone has put something funny in the water supply again. Plasticland are absolutely unashamed psychedelicists and this trippingly-titled LP is one of a batch of welcome releases from Enigma UK, an outpost of the American label which brought us The Smithereens (yay!)

and Stryper (nay!). Mainhead in Plasticland is Glenn Rehse (vocals, 12-string, mellotron, organ, African percussion, sleighbells) who is responsible for virtually all the tunes. And what tunes! 'Grassland Of Reeds And Things', 'Transparencies, Friends', 'Fairytale Hysteria' and 'Non-Stop Kitchen' (a dance number, overwhelmed by housework). The tunes are good, the sounds are wild and it is not at all weedy. These men wear their brains on their sleeves. Listen. [B:1] **Pete Clark**



**PRINCE: SIGN OF THE TIMES/PAISLEY PARK**  
Warners WX88 925577-1

It seems now that we should drop the epithet 'The Purple One' in connection with Prince. It conjures up an image of overblown and decadent frippery which is absurdly inappropriate. You will have heard the anonymous single taken from this double set and while no-one is making claims for Prince as the world's social conscience, it is clear that he has picked up Sly Stone's mantle of premier soul demolition man. It is the breadth of the material here which is breathtaking. Prince works through the cocktail mannerisms of 'Starfish And Coffee', dishes up the raunchiest slab of funk this year in 'Hot Love' and then tops the lot with 'The Cross', a sweetly religious lament which is abruptly detonated by a monster guitar/drum onslaught. There is a little bit of filler knocking around, but nothing to disturb the value-for-money equation. This man has his heart, head and feet in the right place and that must be something of a record. [A:1\*] **Pete Clark**

**SONNY ROLLINS: THE QUARTETS**  
RCA/Bluebird PL85634(2)

Sonny Rollins has been such a consistent player that apart from his late seventies albums, almost any re-release is worth getting if you haven't got it in your collection already. Rollins is one of those players whose inventiveness and personality stands out in any company. He's one of the most melodic tenor players that jazz has known. His improvisations are not a stream of technical exercises, but instead, a long, long line of extemporised melody. There's an enormous sense of humour and human warmth in his playing too. One of the attractions of this particular set is the appearance on every track of Jim Hall. Hall is one of the very few jazz guitarists of the fifties and sixties I can bear to listen to. While many were caught up in self-conscious posturing based on sickly sweet softened sound and unimaginative rhythm playing, Hall furrowed his own path. He proves that subtlety doesn't have to be boring. There are some classics on this double album like 'God Bless The Child', 'The Bridge', 'Brownskin Girl', and of course 'Don't Stop The Carnival' and all in all, this is a classic collection of early 1960s Rollins, which will make rewarding listening to all those with a big heart and open ears. [A:1\*] **Ken Hyder**

**CARLY SIMON: COMING AROUND AGAIN**  
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*Coming Around Again* looks an interesting proposition. A gorgeous title song that's already been a hit following its employment in the *Heartburn* movie; revamps of three songs with known track records; hopefully, at least a couple of Simon originals to hug and hold on to; and a guest list that includes Stevie Wonder and Roberta Flack. Sadly, things aren't quite as they should be. Most of the Simonsongs begin enterprisingly but fade into middle-ground anonymity; the slow rolling, rap-ridden version of Joe Tex's 'Hold On To What You've Got', makes you yearn for a Millie Jackson to add a cutting edge, while the attempt on Bryan Adams' 'It Should Have Been Me' does little to raise the temperature in the manner Carly's back-cover shot most certainly does. Even the Wonder-assisted return to 'As Time Goes By' would fail to make Sam provide it with a reprise, which is surprising when one remembers that Simon's torch song album was preferable, in many ways, to the more highly acclaimed Ronstadt-Riddle releases. And what's to be made of 'Itsy Bitsy Spider', a nursery rhyme sung by a children's chorus, that's set against the rhythm track of 'Coming Around Again'? Maybe long-term Carly fans will merely view it as a return to the days of the Simon Sisters and their 1964 'Winkin', Blinkin' And Nod'. Which reminds me, sister Lucy is still around and is to be heard providing back-ups on 'Two Hot Girls (On A Hot Summer Night)' a Simon story song that lyrically promises much but somehow flunks out somewhere along the beach. A criticism, perhaps, that could be applied to the album as a whole. [A:2] **Fred Dellar**

**FRANK SINATRA: THIS IS SINATRA, VOLS 1 AND 2**  
EMI EMS 1237 (TC EMS 1237) and EMS 1238 (TC EMS 1238)

These albums, already out in the £70 boxed set issued for Sinatra's 70th birthday, deserve their wider availability. But compared with *The Sinatra Collection* (EMTV 41), which was superbly loaded with standards, these two contain too many songs that surely the star cannot have honestly felt worthy of him. There are one or two evergreens such as 'World on a String', and there are several of his famous film songs - and some that proved as forgettable as the films. But throughout, there are always the arrangements of Nelson Riddle to make even the feeble songs worth listening to. Sinatra experts will be able to compare the treatments of songs which had originally had Axel Stordahl arrangements in Sinatra's Columbia days and were recast by Riddle for Capitol in 1957. One of the great modern ballads is here, 'My One and Only Love', better in melody than in lyric. On the other hand, despite its unremarkable tune, the song which (for me) most deserves repeated playings is the last track on volume 2: 'How Little We Know' (1956), outstanding for its literate lyric by Carolyn Leigh, one of the few writers who could be mentioned in the same breath as Hart or Porter. Either could have written lines like: 'Who cares to define what chemistry this is/Who cares, with your lips on mine, what ignorance bliss is?' [A/B:1/2] **Denis Argent**

**JAMAALADEEN TACUMA: MUSIC WORLD**  
Gramavision SNTF 979

Fine bassist though he is, Tacuma's recent records have been disappointing. He came to notice in Ornette Coleman's group with bass guitar playing that twisted and turned in a way which absorbed. You could just listen to the bass for minutes on end as if the bass were the featured instrument. But his own projects have been bedevilled with an excessive will to impress, and I suspect to make money. Some albums have been like samplers with a little bit of this and a little bit of that. This is a concept album. The concept is Tacuma playing a whole world of music with this track being recorded in

Turkey, that one in France, another in Japan. Some of the tracks are interesting and others are dull. And the monotony of electric drum machines offends the brain. I loved his playing with Ornette Coleman a few weeks ago in London, and it's still with Coleman that you'll hear him at his best. [A:2/3] **Ken Hyder**

**THOMPSON TWINS: CLOSE TO THE BONE**  
Arista 208 143

I suspect that this album's as important to Arista as it is to the Thompsons. The label desperately needs a money-spinning British band to impress those who regularly check the books on the other end of the Boston tea run. With Hurrah failing to click, it's currently back to the once-successful Thompsons and the hope that they can hit a stride again. Trouble is that the Twins have lost a lot of support plus one member along the way. A UK tour flopped and nobody has since bought their singles. Now it's all back to the starting blocks with just Tom Bailey and the previously wacky hatted Alannah to take all the chances and the ultimate blame, if needs be. So can they pull it off? Honestly, I don't know. Certainly there are singles to be had on this heavily dance-oriented release. 'Dancing In Your Shoes', 'Gold Fever' and 'Get That Love' all have the hooks and looks of hits. And judged on pure pop appeal - which is what the Thompsons have always been about - *Close To The Bone* isn't at all a bad album, thanks not only to the two main participants but also to Rupert Hine who's turned in yet another of his exemplary production jobs. But whether the Thompson's former fans will return in droves, I somehow doubt. Bands who rely primarily on singles for the *Smash Hits* generation remain permanently in a fingers-crossed state. [A:2] **Fred Dellar**

**JAMES BLOOD ULMER: AMERICA - DO YOU REMEMBER THE LOVE?**  
Blue Note BT 85136

If you can get past the often banal lyrics, and if you can avoid being mesmerised by a lot of loose talk about harmonologies, the simple, direct bluesiness of this album could well turn you on. Ulmer still hasn't matched the *Tales Of Captain Black* album where he produced an extension, or at least a sideways variation, of the new Ornette Coleman approach to group/solo improvisation. Since then he has been chasing success and acceptance. In these commercial albums he hits the mark most when he strips it all down and hits the down home backwoods blues button. He hits it all through this album, and although it doesn't begin to touch the imaginative heights he's capable of, the simple, jangling guitar licks do the business on another level. It's no great classic, but it's an enjoyable album to listen to. [A:2] **Ken Hyder**

**VARIOUS: PIANO PORTRAITS VOL. 1**  
Affinity AFS1022

**VARIOUS: PIANO PORTRAITS VOL. 2**  
Affinity AFS1029

These two LPs, each with 16 tracks, usefully put some fine performances back into circulation, notably by Jelly Roll Morton, James P Johnson, Art Tatum and Mary Lou Williams. It is only regrettable that, as so often when Affinity reissues pre-modern jazz, they are chaotically out of sequence, with items from the same session completely separated. And why include only one track from the Albert Ammons Rhythm-makers date, one from Tatum's Swingsters session on Vol. 1 and another on Vol. 2? Collectors of this sort of music want complete dates, and all together. Also, the discographical details are printed in such minute type that one needs a magnifying glass to read them. Morton's 'The Pearls' and 'King Porter Stomp' (1926), Johnson's 'You've Got To Be Modernistic'

(1930) and Tatum's 'I Ain't Got Nobody' (1934) are classics, being lucidly developed and beautifully played solos. It is instructive to turn from Morton's to Mary Lou's version of 'The Pearls' (1938), done very much in terms of the swing era. Interesting as alternative readings also are Johnny Guarnieri's 1956 piano-and-rhythm accounts of Ellington band pieces such as 'Solitude'. Another remarkable pianist from the swing years, now forgotten, is Clarence Profit, who also turns in an Ellington piece, 'Hot and Bothered' (1940). There are several examples of boogie, too, among which Meade Lux Lewis's 'Mr Freddie Blues' and Pete Johnson's 'Death Ray' are best. Johnson's 'Lights Out Mood' is respectable slow blues playing, and there is also some nonsense from Pinetop Smith and from Slim Gaillard. [B/C:1/4] **Max Harrison**

**VARIOUS: THE NEW BLUEBLOODS**  
Sonet SNTF 984

Subtitled 'The Next Generation of Chicago Blues', *The New Bluebloods* attempts to show what's been happening in the world's bluest city since Alligator recorded their six-album 'Living Chicago Blues' series, some 10 years ago. I say 'attempts' because, judging from the plethora of fine sides assembled here, one album can only act as a surface-skimmer, the cream of the licks acting as a mere lick of the cream. Professor's Blues Review, for instance, tote a magnificent 'Meet Me With Your Black Drawers On' as a closer to side one. Horn and organ driven, with Gloria Hardman delivering the sort of *risqué* vocal to which Bessie Smith would most certainly have given an acknowledging wink, it immediately has you writing postcards to Sonet in an attempt to grab a full Blues Review album. Valerie Wellington's re-run of Ray Charles' 'A Fool For You' is similarly inspired. An opera diva plus an actress who has portrayed Ma Rainey onstage, Wellington is as soulful and fiery as anyone gospel-blues on the scene today. In one well-chosen word, magnificent. Donald Kinsey kicks up dust on the blues-rock trail currently being blazed by Robert Cray: Michael Coleman - he who guitar-picked on Syl Johnson's 'Fine Brown Frame' - boogies brashly and brightly through 'Woman Loves Woman' and ... well, let's just leave it that there are no losers involved in this particular contemporary blues showcase. The rating tells all. [A:1\*] **Fred Dellar**

**VARIOUS: ATLANTIC BLUES**  
Atlantic 781 713-1

Spoiled by last year's *Rhythm and Blues* box, I was wondering how Atlantic would follow it. I have before me an 8-LP set simply called *Atlantic Blues* which almost equals its predecessor despite containing less material. The four double albums which make up *Blues* are entitled *Guitar*, *Piano*, *Vocals*, and *Chicago*, each subject represented by the cream of its (Atlantic) practitioners. While it's possible to dispute the choice of tracks, it's impossible to fault the artists contained within. Some have balked at the thought of Stevie Ray Vaughan and Dr John sharing company with Joe Turner, BB King, T-Bone Walker, Sippie Wallace, ZZ Hill, Albert King, Rufus Thomas, Aretha Franklin (the last two in a most assuredly Blues vein), and other giants, but that's just musical racism. As per the R'n'B set, every track is carefully annotated, and the material is cleaned up enough to antagonise the purist, but that's a tiny price to pay for so much great material in what is the vinyl junkie's equivalent of a six-pack. I'd love to see booklets accompanying these boxes with decent portrait shots of each artist, but that would only be more icing on an already-rich cake. Another gold star, then, for WEA, or [A/B/H:1\*/1/2] if you honestly think 16 sides can be summed up with a few taps of the QWERTY pad. If Bertiz ever wanted to teach the Blues, they could slap their logo on this. **Ken Kessler**

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**ASHFORD AND SIMPSON: SOLID PLUS SEVEN**

Capitol CDP 7464662 (63m 57s) CD  
As the title says. Solid with extra tracks. State of the art soul/disco, with a title track of near-classic worth. Simply divine. [A/A\*:1]

**FRED ASTAIRE: CRAZY FEET**

ASV CD AJA 5021R (57m 41s) CD

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ASV CD AJA 5032R (42m 16s) CD

**RED NICHOLS AND HIS FIVE PENNIES: RHYTHM OF THE DAY**

ASV CD AJA 5025R (59m 50s) CD

**VARIOUS: HOLLYWOOD SINGS**

ASV CD AJA 5011R (60m 45s) CD

A half-dozen of ASV's excellent 'Living Era' titles transferred to CD, and all curiously bearing the legend 'Stereo Reprocessed'. We only detected this on the Mills Brothers and Red Nichols titles, but they can be salvaged with the deft use of a mono button. Well-selected compilations with scholarly annotations, and perfect for introducing some between-the-wars popular music to the digital era. [H:1] across the board, with the odd [\*] added for personal preferences.

**JONATHAN BUTLER: JONATHAN BUTLER Jive**

CHIP46 (72m 01s) CD

(Jive Records, Zomba House, 165-167 High Street, Willesden, London NW10 2SG)  
Absolutely magnificent package highlighting the talents of a young South African soul/jazz artist. Despite apartheid, Butler has managed to reach beyond the boundaries and is now enjoying worldwide acclaim. One taste of this disc will show you why the likes of George Benson, Ruby Turner, and Al Jarreau are using Butler's material. Now it's Jonathan's turn. Breathtaking. [A:1\*]

**CARAVAN: THE CANTERBURY COLLECTION**

Kingdom CD KVL9023 (52m 10s) AAD CD

Not a complete history, but a selection of tracks from Caravan's last LPs, *The Album and Back To Front*. Proof that an out-of-fashion image - spaced-out hippies - is enough to prevent a slick and worthy 1980s approach from obtaining its deserved success. [A/B:1/2]

**NAT KING COLE: COLE ESPAÑOL AND MORE VOL. 1**

Capitol CDP7464692 (38m 12s) CD

**NAT KING COLE: COLE ESPAÑOL AND MORE VOL. 2**

Capitol CDP7464822 (38m 05s) CD

Yes, even vocal geniuses can screw up, and these sops to his Latin fans fall well short of the usual Cole standard. File with *Connie Francis Sings Yiddish Melodies* and other marketing exercises. [A:2/3]

**NAT KING COLE: JUST ONE OF THOSE THINGS (AND MORE)**

Capitol CDP7466492 (41m 29s) CD

**NAT KING COLE: LOVE IS THE THING (AND MORE)**

Capitol CDP7466482 (46m 24s) CD

After the shock of *Cole Español*, blessed relief comes in the form of CDs - each with bonus tracks - of Cole's work with, respectively, Billy May and Gordon Jenkins. This is Nat King Cole

As He Should Be Remembered: the smoothest, silkiest interpreter of standards ever heard. Bliss. [A:1\*] each, and no arguments, please.

**FLAMIN' GROOVIES: ONE NIGHT STAND**

ABC Records ABCLP 10

The world's best (and oldest) garage band returns after eight-year absence with an LP which finds them consistent to a fault: they haven't changed a bit. No-nonsense rock from a bunch of aging Baby-Boomers who think it's still 1965. [B:2]

**HEART: MAGAZINE**

Capitol CDP7464922 (39m 16s) AAD CD

Though lacking the throat-grabbing hooks of, say, *Dreamboat Annie*, Heart's 1978 opus still rocks with muscle. No need to wonder why this lady-led band continues to sell huge quantities of vinyl, er, silver Stateside, where stadium rock is still the norm. [B:1/2]

**THE HOLLIES: THE EP COLLECTION**

See For Miles SEE94

With the Hollies again on tour, interest may seep beyond the edges of the collecting world. As their EPs are now rare enough to command prices of £5 or £10 in naff condition, this collection of their gorgeous extended-play output is a godsend for the impoverished and the lazy. [B/C:1]

**HELEN HUMES: 'TAINT NOBODY BIZ-NESS IF I DO**

Contemporary COP 037

Gorgeous reissue of a set Humes recorded in 1959 with the likes of Shelley Manne, Mel Lewis, Benny Carter, and a hip-looking Andre Previn. Jazz vocals of the highest calibre, with a version of 'Trouble In Mind' that's absolutely chilling. [A/H:1]

**IMMACULATE FOOLS: DUMB POET**

A&M AMA5151

Or not so dumb, judging by this latest outing from one of the most intelligent bands around in the 'still waiting to be discovered' sector. Finely crafted songs aren't in short supply these days, but ones with fire tend to be few and far between. Nothing blasé here, which suggests a band that cares. [A:1]

**GREGORY ISAACS: LIVE AT THE ACADEMY**

Kingdom CD KVL 9027 (51m 21s) AAD CD

Recorded live in Brixton in 1984, this disc captures Isaacs in fine form. Reggae without too many tears, as joyful as you're likely to find in the post-Marley era. [B:1]

**BROWNIE MCGHEE, SONNY TERRY WITH EARL HOOKER: 'I COULDN'T BELIEVE MY EYES' PLUS . . .**

See For Miles See 92

Ten tracks from the title LP and six from *A Long Way From Home* combine to provide an excellent document of Terry and McGhee's activity in 1969. The surprise is that this isn't simply another dose of acoustic folk blues but an electrified package spiced with Earl Hooker's sublime guitar work. [A:1]

**DON McLEAN: AMERICAN PIE**

EMI America CDP7465552 (36m 21s) AAD CD

With the title track so successful that follow-ups were all but impossible, the rest of this package (including, of course, 'Vincent') suffers only through comparison. The last gasp of the genre of sensitive singer-songwriter, one we shouldn't dismiss so lightly. [B:1]

**PAT METHENY, THE HEATH BROS, DAVE BRUBECK QUARTET, BB KING: LIVE IN CONCERT**

Kingdom CD GATE 7017 (46m 28s) AAD CD

With one track by Metheny and the Heath Bros, three by Brubeck, and three by King, the appeal

of this disc is limited for fans of only one of the acts. Recorded during the Midem festival in Cannes in January, 1983, it does, however, contain 'Blue Rondo A La Turk' and 'The Thrill Is Gone', thus rendering it highly laudable. [A/B:1/2]

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# ● BACK DOOR



## DENIS ARGENT ASKS IF THE WONDERS OF ANDREW LLOYD WEBBER SHOWS CAN LIVE ON

**A**MATEUR groups in our town have recently put on *South Pacific*, *Oklahoma* and *West Side Story*, one even being a school production. Surely this proves that the great musicals of the 1940s and '50s have filled those amateur stages, which a generation ago were mostly limited to Gilbert and Sullivan, the musicals of the 1920s and even the operettas of Lionel Monckton and Edward German. The point surely is that the songs of Rodgers/Hammerstein and even the 1957 Bernstein/Sondheim are so *singable*, enjoyable alike to the amateurs during weeks of rehearsal and to the audiences – who are not necessarily all friends and relatives of the performers.

Will those local amateurs be choosing to sing the big musicals of today in the next century? Will Andrew Lloyd Webber fill the gap when societies look around for something fresh to tackle? Can a show which depends so much on hi-tech theatrical effects ever 'work' in local halls?

The tradition of tunefulness is not dead. It survives, for example, with Jerry Herman, whose singable songs enabled a musical with an unsavoury subject to fill the Palladium for many months – though, strangely, his lively *Mack and Mabel* has still not earned a West End showing.

But it is not Jerry Herman's name that dominates the West End and the wider finances of the theatre world; the magic name is Andrew Lloyd Webber, whose fortunes (the *mot juste*) are linked with The Really Useful Group plc which announced half-year profits up from £2.03 to £2.51 millions.

What hopes are there for the survival of Lloyd Webber's recent works? It may be that he is already rich enough to be unworried about his future standing in the world of amateur theatre. Take the money and run (or rather, take the long run's money) is a fair enough philosophy in a commercial society, but surely he is still young enough to want a lasting fame built on something more than a handful of musicals which had long runs in London and New York? Perhaps he will move with more dedication and determination towards the world of opera.

He may have intended to signal that with *Phantom of the Opera*, but it was not enough to impress the London critics. 'The Phantom of an

Opera' was typically the headline over John Barber's review in the *Telegraph*, and indeed the general feeling seemed to be that the melodrama elbowed out the music.

While putting these thoughts together, I happened on TV to hear the views of Stephen Sondheim in a programme shared with Michael Tippett. The American was emphatic: an opera is sung by operatic singers in an opera house – anything else is a show. By that definition, *Phantom* is a show – and therefore to be judged on the same basis as Rodgers and Hammerstein – or, for that matter, Bernstein and Sondheim.

But where, in *Phantom*, are the songs? As I wrote when reviewing the album, many who rushed to get tickets for Her Majesty's may have expected the whole show to offer music similar to the hit songs, 'Music of the Night' and 'All I Ask of You' – and were disappointed. Of course there are ingenious touches in the score: the idea of the same theme ('Masquerade') serving vastly different situations is effective. But Bernstein had done that too in *West Side Story* and the idea even surfaced in *The Music Man*, in which Meredith Willson presaged 'Seventy-six Trombones' with the slow 'Goodnight, My Someone'.

There is no space to pick holes in details of *Phantom* – indeed, all concerned in such a success can afford to ignore nit-pickers. But just as an example of the way the things do not hang together, ask yourself why the recitative following 'Stranger Than You Dreamt It' in Act 1 should be so deliberately tuneless? And why, in 'Masquerade' are words which ought to be emphatic lost in a flurry of semiquavers?

The same sort of puzzle arises at points in the



libretto. The writers have not often bothered much to rhyme the lines, but why work in a rhyme so perversely as:

'The man could not be deafer,

So please preferably one who plays in tune'.

Goodness knows, the great Broadway writers did some odd and sometimes over-clever things with rhymes – I've just been reading the collected lyrics of Lorenz Hart – but at least the words matched the rhythm of the music. It doesn't work with lines in *Phantom* like 'Assign a minor role'.

But audiences rightly don't bother much about details like that when they hear the way in which 'All I Ask of You' and 'Music of the Night' merge before the final curtain; great stagecraft which must leave them on a satisfied quiet note, not ready to rush for the taxi queue.

Yet, and yet – where are the songs? Consider the 13 songs in *South Pacific* or *Oklahoma!* – or, to bring in another name, one who was both composer and lyricist: Irving Berlin's ten in

*Annie Get Your Gun*, almost every one a standard or heard in the original versions often enough to rank as standards. Anyone, whether he had operatic pretensions or not, would surely be proud to have written such a chorus song as 'There's No Business Like Show Business!'

When I reviewed the original cast recording of Andrew Lloyd Webber's *Song and Dance* (January 1985), I suggested that with hit after musical hit he had then already outdone Noel Coward who had enjoyed similar successes with shows running in London and New York in the 1930s, at much the same age as today's *Wunderkind*.

It may be introducing a grim note (just like the *Phantom*'s motif) to suggest that, like Noel Coward, Andrew Lloyd Webber may one day find himself out of fashion. The thought came to me when re-reading Noel Coward's diaries. In January 1952 he wrote: 'Meeting of Noel Coward Ltd not too encouraging. More money must be made. Well, I must persevere, but not at the cost of my talent. Rehearse all the afternoon at the Cafe with Mary [Martin] and the orchestra'.

The last sentence of course presages his late-flowering career as a cabaret star – would Andrew Lloyd Webber be so lucky if the tide of showbiz taste turned against him?

By the time he was 39, Noel Coward had written *Bitter Sweet* and a dozen other songs which have become standards – and that does not include the comic ones which enabled him to be a cabaret star – and *Bitter Sweet* is still revived by local amateurs.

Andrew Lloyd Webber is riding high; he may live up to his parentage and write a serious opera that gets beyond a subsidised London season. But I would rather hope that he will see that there is still a demand (as proved by the spate of revivals) for the musicals that depended on songs by the likes of Cole Porter, Gershwin, Rodgers, Loesser, Bock/Harnick, Strouse/Adams and all the rest of those in the great tradition.

James Maher, in his introduction to Alec Wilder's *American Popular Song* stresses the key part that the theatre played in developing the memorable songs. Those writing in the theatre, he added, must feel that Puccini, far off, Lehár in the middle distance, and Kern, Berlin, Gershwin, Rodgers, Schwartz and Arlen close at hand, are *listening*: Sondheim, who started as Hammerstein's assistant, says Maher, well knows who is looking over his shoulder.

Who does Andrew Lloyd Webber feel is looking over his shoulder? He is supposed (according to one review) to have said that he intended *Phantom* as a return to the values of Rodgers and Hammerstein. Did he ever express them? His theatre works (seven in 19 years) suggest that between the ages of 20 and 30 he seemed to move straight from schoolboy rock (*Joseph*) to quasi-operatic music-drama (*Evita*); and *Cats* and *Starlight Express* made their mark with dancing and spectacular effects rather than their songs.

Maybe time is on his side; at 39 he may be counting on the fading of the great traditions of the musical, and a new pop-reared generation having ears less attuned to melody.

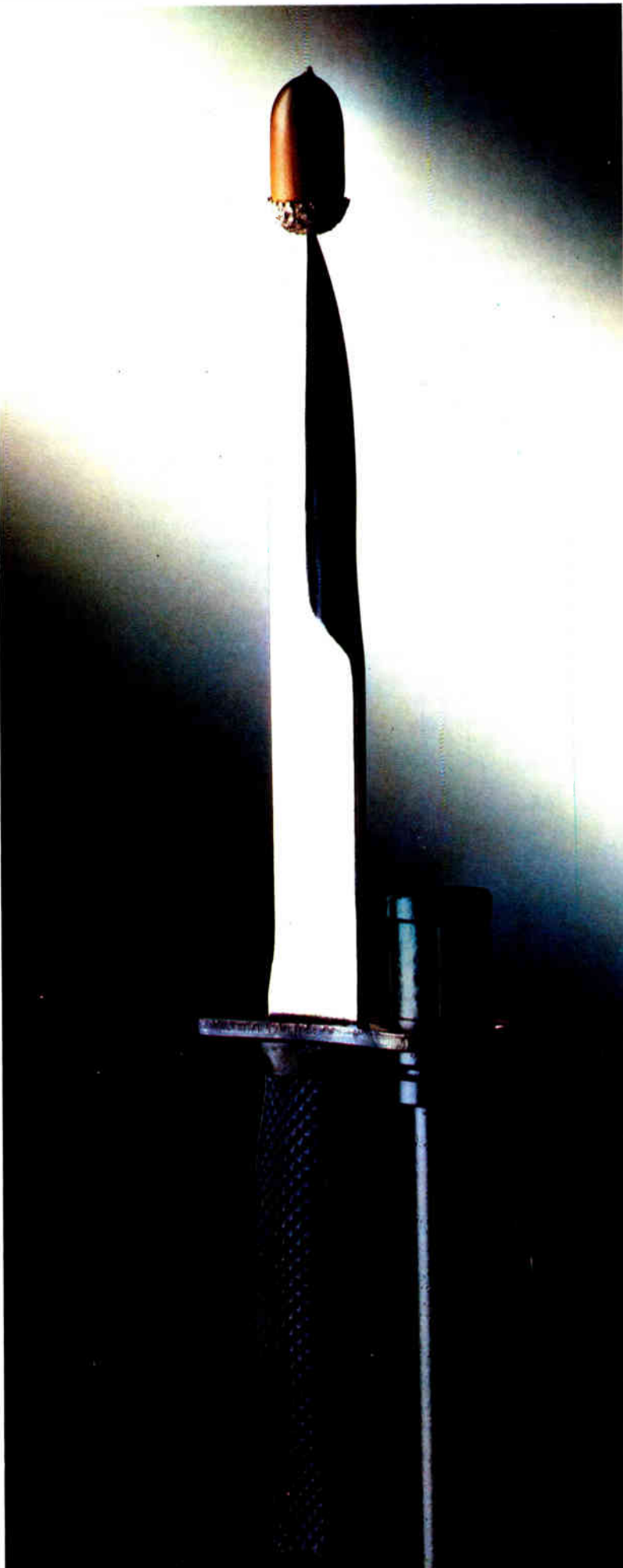
Exactly when and why the rot of tunelessness set in may be a subject for another article, but I hope Andrew Lloyd Webber will use his great standing and talent to lead a move back to melodious shows – shows that the local amateurs of the next century will be glad to sing. ●



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