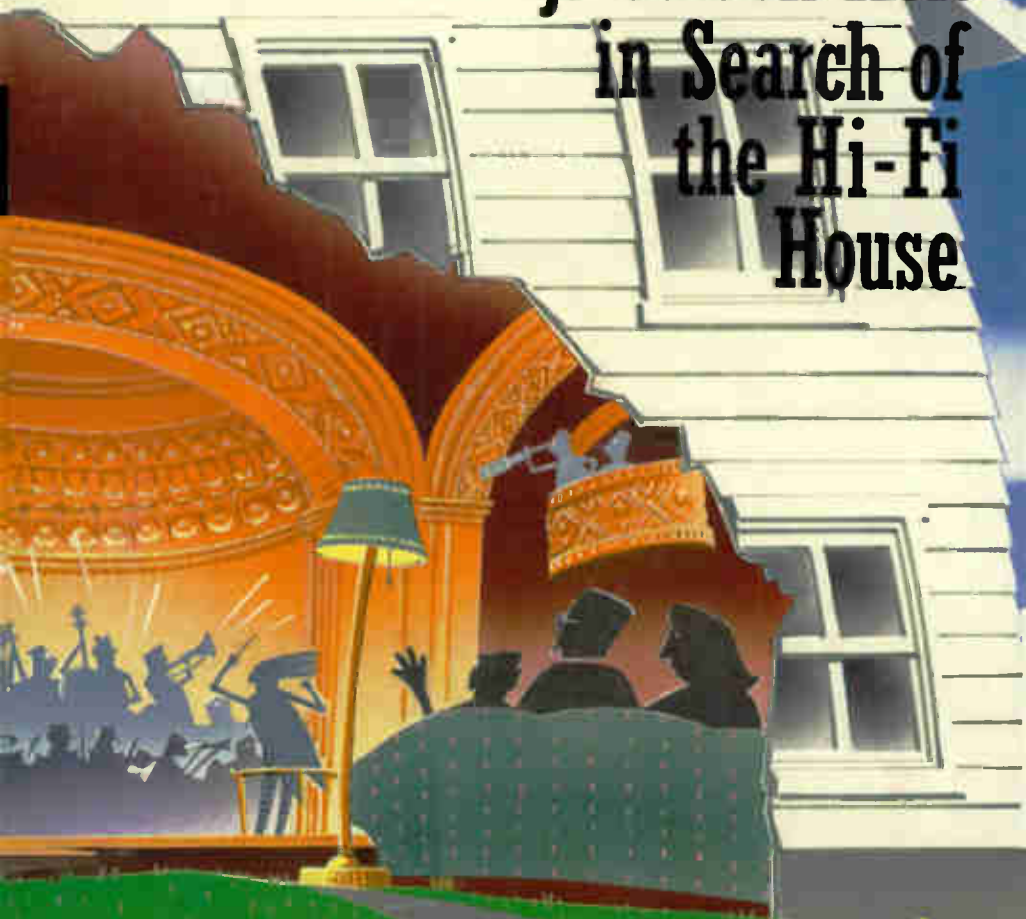


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APRIL 1990

VOL. 13 NO. 4

COMING ATTRACTIONS

The main feature in the May issue, assuming that everything goes according to plan, will be an exploration by Robert Harley of possible reasons for the various CD tweaks—Sound-Rings, CD Stoplight, Armor All, etc.—improving the sound quality of those little silver devils. Bob has borrowed a \$28,000 Kenwood jitter analyzer as well as specialized error-assessment gear in order to try to pin down what is happening.

It's a little early as I write this column to state in definitive terms what components will be reviewed next month; instead, I'll list the equipment currently being auditioned by *Stereophile's* intrepid team of reviewers which will dominate the next few issues.

As always, there are *beaucoup de* loudspeakers occupying our listening rooms: the Thiel CS5, Celestion 3000, Dahlquist DQ-20, Apogee Stage, and Pawel Reference head the list, as well as more modestly priced contenders from Morel, Camber, Mission Cyrus, Tannoy, and Vieta.

Source components on hand include: Basis Debut, VPI TNT, and SOTA Cosmos turntables; AudioQuest and Clearaudio cartridges; and CD players, transports, and D/A processors from

Stax, Micromega, Meridian, Krell, Proceed, and Rotel. Amplifiers and preamplifiers heating up our rooms include the Classic 60, SP14, and SP9 Mk.II from Audio Research, Counterpoint's SA3000 and SA100, the Air Tight ATM-2 tube amp from Japan, and the Mark Levinson No.27 power amplifier.

On the music side, Barbara Jahn will interview Polish pianist Krystian Zimerman, Jon W. Poses is writing our first jazz "Building a Library," on John Coltrane's classic "Naima," and Richard Lehnert will be telling you why you should listen to John Wesley Harding. A lot.

I'm sure this list whets your appetite; it did mine. But in the meantime, note that *Stereophile's* 1990 High End Hi-Fi Show takes place at the New York Penta Hotel (opposite Manhattan's Penn Station) from April 27 through April 29. —JA

Erratum

On p.148 of the February issue, fourth line from the bottom of the page, in my chart of "Reviewed and Recommended loudspeakers, 1986-1990," the speaker listed as "LC Domestic Monitor One" *should* have been listed as the "Taddeo Domestic Monitor One." Our apologies for any inconveniences caused by this typo. —JA

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Typesetting Copygraphics, Inc.

© *Stereophile* — Vol. 13 No. 4, April 1990, Issue Number 123. *Stereophile* (ISSN #0585-2544) is published monthly, \$35 per year for US residents by *Stereophile*, 208 Delgado, Santa Fe, NM 87501. Second-class postage paid at Santa Fe, NM and at additional mailing offices. POSTMASTER: send address changes to *Stereophile*, P.O. Box 364, Mount Morris, IL 61054.

Subscriptions
US residents (800) 435-0715,
(800) 892-0753 (Illinois).

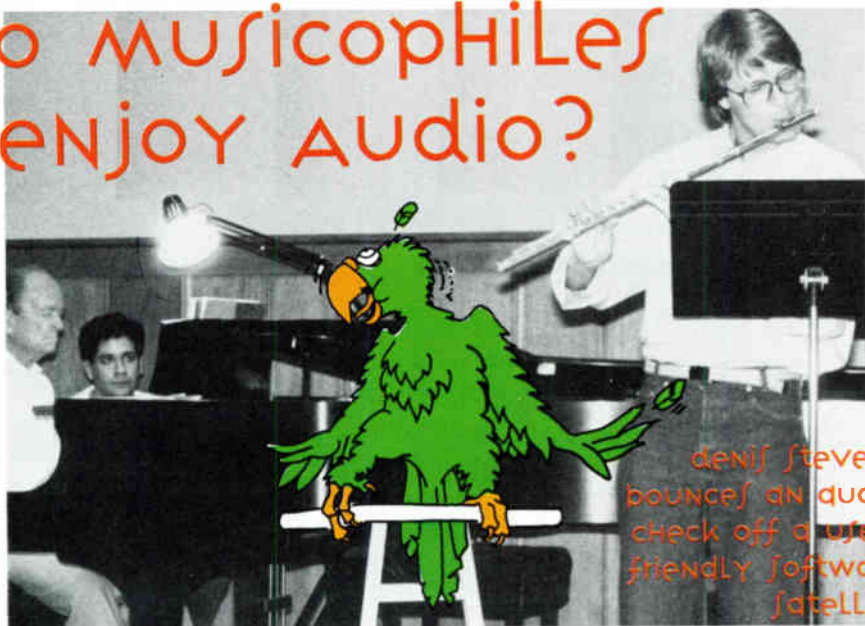
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AS WE SEE IT

do musicophiles enjoy audio?



denis stevens
bounces an audio
check off a user-
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Paul Gowan's letter in the October 1989 *Stereophile* hinted that, whether or not audiophiles enjoy music, it should be true that the emotional experience we derive from music is what really matters. There, barefaced, lies the problem: who are "we"? A well-known Latin epigram affirms that in matters of taste there is no point in discussion. And a Greek epigram (coined in fact by Max Beerbohm in his Oxford novel *Zuleika Dobson*) suggests that "for people who like that kind of thing, that is the kind of thing they like."

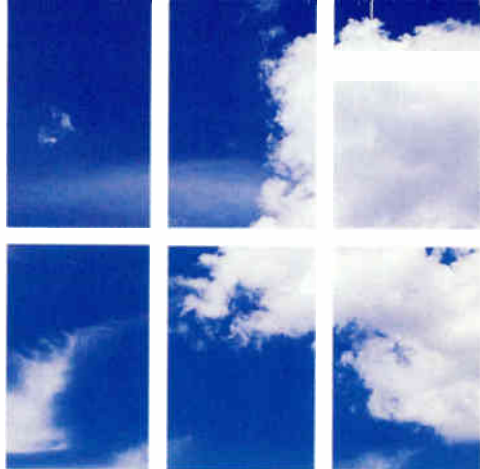
In the January 1990 *Stereophile* Melvin Elliot supported Gowan's viewpoint by stating that "the system should be [merely] the means to an end. . . it's the music that counts!" All very well if you are a musician—but what if you happen to be an audiophile? In a letter printed right after Elliot's, Ralph Gordon shines light on another facet of this argument by proposing that "perhaps audiophiles are would-be engineers who enjoy learning about equipment," but he insists that he still gets excited about the music. Can you be both an audiophile and a musician? It's a bit like politics—can you be a

square and a circle at the same time?

In a reckless attempt to pour water on troubled oils, I emptied out my audiophile and rifled through the floppies in order to find out all I could about this vexing matter, drawing at the same time on my own quaint experience, such as it is.

Put briefly, I reviewed records for 12 years (*The Gramophone*), conducted and produced records¹ for 35 years (overlapping the previously-mentioned activity), and am now reviewing again. So I should be able to see both sides of the question, except that my recording equipment would have made a high-end'er's hair stand high on end, consisting as it did of a prehistoric stereo mike intravenously fed into a wind-up tape machine running—when it ran at all—at (more or less) 7½ips. But the "master" (or, better, mistress) tapes delivered to top-ranking international record companies were not only made into commercial LPs, but were usually reviewed with unqualified praise. So

¹ An autographed discography of Denis Stevens's recordings is available for \$4 postpaid from Denis Stevens, 1524 Garden St. #5, Santa Barbara, CA 93101.



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I must have been doing something right. My elder son, who helped considerably while humoring father's foibles, was actually a genuine audiophile and is now chief engineer of a New York City sound-studio whose equipment somewhat resembles the flight deck of a Concorde.

Incidentally, a recent TV program on "Why Planes Crash" made it quite clear that too much attention to the means can sometimes mess up the end. A black box subsequently retrieved from strewn wreckage proved that, during a landing approach when a noncritical cockpit light wouldn't come on, the entire crew fell busy trying to make it function, completely ignoring the altimeter which, beeping madly, indicated an uncomfortably rapid descent to ground level.

This is comparable, in a way that is artistically rather than personally disastrous, to a record company which spends a fortune on a complete set of Schubert symphonies. They hire a competent conductor and orchestra. They supply incredibly sophisticated and expensive sound equipment. The producer gets a printed credit. (Walter Legge of EMI, who produced some of the finest records ever made, remained for the most part anonymous.) So much for the means. But what of the end?

Well, to begin with, the musical text used for the symphonies was faulty. (This recording really took place and is currently available.) I mean, actual wrong notes! When the scores were first edited just over a century ago, none other than Johannes Brahms straightened out quite a few obvious errors and inconsistencies. His text—or rather, that of Eusebius Mandy-czewski, the responsible editor—was not perfect, but it was musical in the Schubertian sense. Yet three years ago an unskilled person was hired to undo (yes, undo!) all that good work, and in consequence the entire set, notwithstanding all the digital dexterity involved, is more or less useless.

Listen to the voice of Walt Whitman, a marvelous poet who also knew and loved music:

*I bear not the volumes of sound merely,
I am moved by the exquisite meanings,
I listen to the different voices winding in
and out, striving,
contending with fiery rebemence to excel
each other in emotion. . . .*

You see, he understood in a way that we don't. He heard "not the volumes of sound

**Do audiophiles, their ears
blocked by their own
finite impulse responses,
ever ask themselves about
the meanings?**

merely" but was "moved by the exquisite meanings." Do audiophiles, their ears blocked by their own finite impulse responses, *ever* ask themselves about the meanings? They could try studying music along with audio, and refine their perceptions way beyond the conventional so that they can distinguish between a good and a poor performance, or a musical text *vs* a phony one. With so little music taught in schools, and less in colleges, how can they hope to understand? Their approach to life, far from being humanistic, is totally technological.

And they will argue "we don't have the time—it's as much as we can do to keep up with the built-in obsolescence of sound-systems." My answer: then get back into shape! All you have to do is exercise—be kind to your mind, train your brain. Discover the exquisite meanings! Buy and read the best books on music and composers. Shut off the other senses when you listen to a magnificent performance of great music. Put the lights out. Relax in your favorite chair. Don't fiddle with magazines. Leave the 'fridge alone. Quit smoking (if you haven't done so already). Refuse all conversation. Concentrate.

You'll hear ten times as much as you did before. And you'll feel better!

There is a parallel to audiophilia in automobilophilia. As with the struggle for superlative audio equipment, so with the automobile. How to make it more reliable, more responsive, more economic—and quieter. You can buy cars of all nationalities. There is also the Rolls-Royce (if you can afford to insure it), and if you own one you will have a precision-built machine whose engine runs at such comparatively low revs and is so well insulated that when you sit at the wheel and turn on the ignition, you won't hear a thing.

Drive off and there's still silence, provided the windows are rolled up. But what on earth can you *do* with silence? Some drivers like to



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think, or converse with a companion, but there are many not-so-scrupulous citizens who enjoy *VROOM*, and as if that's not enough they convert their vroom-boxes into boom-boxes to the dire distress of all those within half-a-mile radius who may like a little peace and quiet. John Atkinson had some pertinent remarks about this in January's "As We See It." I almost wish they'd been *impertinent!* Once again we are up against a matter of taste, which could be allied to good manners and consideration for others.

Not to mention the spirit of the age. Britain and America, both democratic in outlook, view certain problems in slightly different ways. For instance, in Britain all broadcasting used to be a monopoly, financially supported by a license (that cost far less than a road license) and additional revenue from the advertisements in BBC publications. The ads were never broadcast! They still aren't. In America, the laudable idea was to sell via audio (later video) advertising, which brought about a *coitus interruptus* kind of entertainment in which concentration for more than ten minutes was virtually impossible. In order to pull in as many buyers as possible, program standards were dipped. On the other side of the pond, the BBC's Director-General Lord Reith was saying: "We know precisely what the British public wants, and by God they're not going to get it!" He wouldn't have lasted long in New York City.

In the long run, people *do* get what they want. That is why most things are 90% junk, ardently desired (apparently) by 90% of the world's population. Narrowing the matter down to a smallish area, J. Gordon Holt (in a letter following directly on Ralph Gordon's in the January issue) states that "the vast majority of rock music *is* unmitigated garbage. . . all the way back to before Hildegard of Bingen." She, by the way, was a poetress, authoress, and composeress who lived from 1098 until 1179. Her problem was that she never recorded anything

24 tracks in and 96 tracks out on 6" tape. She had to sing with her own unamplified voice. No company offered her a contract, and no agency would sign her up for a tour, so she had to fall back on the Almighty, which was really tough. More or less the same happened to Bach, Mozart, Wagner, and others. They upped and died before they could even reach out for their royalties. So they are not very highly regarded, whereas the Purple Hereafter and comparable groups have a hundred million fans who, perhaps unknowingly, keep their idols in conditions of unbelievable wealth and luxury. JGH refers to these in his strictures on a "trend-driven, marginally literate public."

Never mind: Memorex sound-cassettes have it all wrapped up. On their Korean-made products a revealing blurb appears in both French and English. "Formule à haut rendement donne une reproduction claire comme en direct pour tous les types de musique." I translate: "High-output formula provides a reproduction clear as the original for all kinds of music." And I assume that "all kinds" includes everything from Hildegard onward, via Palestrina's rolling polyphony *Tu es Petrus* ("Thou art the rock") all the way up to Frank Zappa, who once said "People wouldn't know what music is if it came up and bit them on the ass." But wait! You haven't heard Memorex's English version yet! "Special formula provides clear-life reproduction of your favorite rock, pop, jazz, or country music."

Aha! So now we know! Like the Old Testament idols, "having eyes they see not; having ears they hear not." Which might well be applied to many record producers unfortunately active today. In the past year alone I have listened to CDs with unbelievable and ineradicable faults. For instance: a Purcell masque which omits one of the published verses and a vital piece of incidental music, while the notes never outline the plot; a Charpentier oratorio in which a quartet of trombones is supplanted by a quartet of bass viols; several sets of 18th-century concertos with no organ to back up the orchestra—only a harpsichord; string quartets recorded with a ubiquitous and distressing vibrato; an otherwise good recording of Elgar's *The Kingdom* with solo vocalists doing the same, and about 12 seconds of total drop-out; a DIY set of Monteverdi Vespers for St. John the Baptist bringing in works he didn't write but omitting one that he did (*Fuge anima*

In the long run, people *do* get what they want. That is why most things are 90% junk.



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John Oakley
HI-FI Answers, England

Even without fancy instrument tests, I can unequivocally report that sound rings do work—and I'm not alone...the proof of this pudding is in the listening. The sound of the CD with the SoundRing installed was more focused, the bass was more pronounced and the imaging of the various instruments was sharper.

Harry Somerfield
San Francisco Chronicle,
San Francisco, CA

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Bill Brassington
The Audiophile Society Journal,
Rye, New York

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mea mundum); and so on and so forth.

Dear friends, you possess magnificent equipment, and it cost a great deal of money. But you could spend ONE MILLION DOLLARS on equipment and it still wouldn't restore Purcell's missing musical items; it could never cause viols to sound like trombones (or sackbuts, if you like); it can't put the necessary organ sound into a texture from which it was willfully excluded; it would not be able to straighten out vibrato; and it couldn't possibly put Monteverdi's motet on St. John the Baptist back where it belongs.

It is not the clarity of sound that counts, nor its purity, sanitation, or sheer volume. WHAT IS VERY IMPORTANT is to start with a proper musical text—and there's only a handful of people who even begin to understand what this is all about. Not musicologists, please! They are the worst of all! Musicians are slightly preferable, although as Frédéric Louis Ritter, the Vassar College professor, wrote in his *History of Music* published more than a century ago, "Their whole attention is directed, in most instances, towards the technical side of musical art." This observation is still largely true, for it cannot be said that musical taste has been

It cannot be said that musical taste has been improved in large measure by either musicians or musicologists.

improved in large measure by either musicians or musicologists. We are still faced with 90% garbage, and since it is now frequently amplified beyond the threshold of pain, *everyone* must endure it.

"At many performances of the *Requiem* I have seen one man listening in terror, shaken to the very depths of his soul, while his neighbor could not catch a single idea, though trying with all his might to do so." That was Berlioz writing on 25 May 1858. We have an origination of sound, and a human being on the receiving end. If either of the two is out of joint, the message is lost. And the music of the moon—as in Tennyson's words—"sleeps in the plain eggs of the nightingale." **S**

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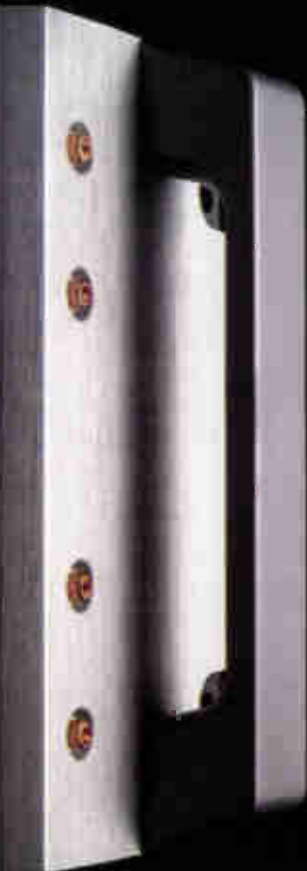


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LETTERS

We regret that resources do not permit us to reply individually to letters, particularly those requesting advice about particular equipment purchases. Were we to do this, a significant service charge would have to be assessed—and we don't have time to do it anyway! Although all are read and noted, only those of general interest are selected for publication.

More jazz, please

Editor:

I really enjoy *Stereophile*; enough, as a matter of fact, to subscribe. However, I feel you should have more coverage and reviews of jazz.

You have, in Jon W. Poses and Richard Lehnert, two very fine jazz critics. I find their comments to be consistently right on the mark. Please give them more space to write about jazz in the pages of *Stereophile*. **D. H. Zeilke**

British Columbia, Canada

Epistemology 101

Editor:

After reading all the epistemological arguments on the standard for judging component accuracy, I also couldn't resist throwing in my two cents' worth of Epistemology 101.

Would you believe that truth is both categorical and dimensional or deterministic and probabilistic; and, in basic logic, truth is never "relative"—but contextual. Extended to the issue at hand, I think that both acoustical- and electrical-instrument recordings can be used to gauge varying *degrees* of certain *types* of component inaccuracies. Yet, the overall edge still goes to recordings of acoustical instruments in real space. With everything else being equal, there are always fewer electronics in the recording chains of acoustical-instrument recordings. I find that Mr. Courtivron also concurs on this point in his letter to *Stereophile* (Vol.13 No.1).

Tom T. Wong
Alhambra, CA

Recorded garbage?

Editor:

Ralph Gordon's words on p.21 of the Jan. '90 issue hypothesizing that "engineers who are also audiophiles are probably audio engineers" prompted my two cents: I am an engineer (not audio) concerned with the impact of the recording process on my analog listening sessions. Specifically, the degradation caused by multi-track recordings and equalizers.

In response to your question, Mr. Atkinson, on p.23 of the same issue: no, I find it unbeliev-

able, not ironic, that drums on heavy metal records are recorded in a natural fashion. Lately, I've been displeased with the garbage recordings I am forced to purchase so I can hear that new metal band I like on my system. Yes, I like heavy metal. And classical and jazz and rock and etc., as much as any other audiophile.

Based on the recording quality of my heavy metal collection, I envision a typical recording session going something like this: "Bass boost? Check. Mid boost? Check. Treble boost? Check. Okay guys, we're ready in here. Anytime you're ready to play, give us a four count so we can be on time to pan the drums." Am I wrong?

About two years ago I was interested in possibly becoming a recording engineer. I attended an introductory lecture at a prominent recording school in Hollywood. At the front of the room was a \$1000 (including speakers) stereo system and a chalkboard on which was written: "The music you are listening to was recorded by students here at our school." Even on the mid-fi stereo system, my ears had no trouble detecting the presence of an equalizer used without reserve during the recording. The drums were two-dimensional and sounded as if they had been disassembled and stretched across the room. Sonic purity was nonexistent, and I could barely fill out the questionnaire because my ears were begging me to leave.

Why do my old rock/heavy metal albums sound so much better? Were there fewer cooks in the kitchen? Where have the focused electric guitars, isolated vocals, and three-dimensional drum sets gone? What kind of recording engineers are we producing that allow recording sessions to happen on a 24-track machine, over six months, in three studios, on two continents where each member of the band comes at his/her convenience to lay down his/her guitar riff on each of ten songs so that any shred of studio ambience that may have been, *isn't!*

There are good recordings of heavy metal being made by Elektra using Direct Metal Mastering. Are there others? If so, I would

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greatly appreciate the new knowledge. . . I can only hope that some day, some recording engineer will place digitally synthesized instruments in a digitally synthesized studio trying to recreate a live heavy metal jam session. If that day comes, I may even buy a CD player.

Spencer Delcamp
La Canada, CA

Heard from One of the Herd

Editor:

Speaking as a 1990 *Homo sapiens* who's cut his musical teeth on such bands as Van Halen, Kiss, and the Sex Pistols, I'd just like to say that if ever I reach Mr. Holt's age—I'm 27—I probably *will* get dew-eyed listening to my old favorites. Does the term "emotional involvement" ring any bells?

JGH is entitled to his opinion ("Letters," January), but he shouldn't be insulting. When it comes to equipment, I'll trust his ears, but when it comes to music, I'll trust my own.

One of the herd [Hunter]
Portland, OR

OK

Editor:

Can the video.

Katy Chayka
Jacksonville, FL

"Saying the sooth"

Editor:

It must have been about 40 years ago, out in Los Angeles, that I bought my first hi-fi equipment. As near as I can remember, it was a General Electric 1201D speaker—which I put in an Altec Lansing bass reflex enclosure somebody had given me—an Audio Development Company 8W amplifier, a Webster changer, and a GE variable reluctance cartridge with a turn-around stylus, one end of which played 78s and other 33s. The whole setup set me back damn near \$100 before I was done. (Of course, that was after I had tricked the supply store into selling it to me for "audiophile net," rather than list, price.)

So I loaded the stuff in my car and started home, and all along the way people were yelling at me, "but hi-fi nuts don't *really* listen to the music." (We hadn't yet progressed to being called "audiophiles" by the average civilian.) And ever since, I have heard that shibboleth from people whose lives are severely damaged because of my buying and listening to high-

fidelity equipment: "You just listen to the equipment, you don't *really* listen to the music." It used to cause pain every time I heard that. And then I noticed some things.

In those days I used to go to concerts. (I could do that because 1) I was young enough to be able to tolerate the horrible behavior of the average audience member, and 2) in those days we had some people who had learned the rudiments of how to behave at a concert.) At intermission, I would circulate. Think, now; what do you hear when you circulate at intermission?

"I like X's interpretation better."

"The trumpet missed three notes."

"We need a new hall; the acoustics here are poor."

"The orchestra isn't up to par tonight."

"It's flat/sharp/too fast/too slow."

"S/he sounds OK, but s/he looks like hell."

"The bitch next to me keeps talking. I finally said to her, 'I didn't pay my money to hear you, I paid to hear the concert.'"

And on and on and on. Very few of the comments are *really* about the music.

I'll tell you who used to *really* listen to the music: my ex-wife. When it was all over, she didn't know what it was or who played it or anything. All she knew was that she had enjoyed it.

So, as Zero Mostel used to say, "I will now say the sooth." And that sooth is that, yes, "They" are right, audiophiles *do not* really listen to the music, because neither do concert goers, and neither do non-audiophiles who listen with great enjoyment to horrible consoles, and neither does anybody else, because nobody can define what "really listening to music" involves.

When I went to the old Philharmonic Hall in New York and noticed that I was hearing the trumpets twice, once from the front of the hall as they whizzed by me and once as they were reflected off the back wall, was I listening to the music any more than if I had been at home noticing how the trumpets seem to have a fog covering them? If I am listening to the St. Louis Symphony at a concert, marveling at the bloom of the cellos (all right, dammit, celli), am I listening to any more than if I am at home thinking the celli (enough already) are not prominent enough?

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probably "listen" to something else. But, even more, during the course of a single concert or record, you will listen to any number of different things. And it doesn't matter.

Paul Alter
Hyattsville, MD

Prevalent preemphasis

Editor:

I believe preemphasized CDs are much more prevalent than you (Jan. '90, p.181) and Neil Sinclair (Mar. '89, p.199) think, at least among the classics. Many of the releases of the following labels are preemphasized: Astrée/Valois, Denon, Dorian, Hyperion, Newport Classic, Virgin, and Wergo. Among these labels are some of my favorite recordings, for instance, the preemphasized 4-CD set of Newman playing Bach organ music on Newport Classic. A somewhat unusual case is the definitive 14-disc set of Chapuis/Bach organ works on Valois, in which Vols. 2, 5, and 6 are preemphasized and the rest are not. I believe Harmonia Mundi rarely preemphasizes, but they do on the 2-CD set of *The Art of Fugue* played on the harpsichord by Moroney.

A particularly unfortunate case occurs on the *HFN/RR* Test CD II (which, by the way, I consider grossly inferior both to their first Test CD and to the Chesky test record JD37). A subtle difference between tube and transistor miking is supposed to be illustrated by bands 19 and 20, "Entry of the Queen of Sheba." Yet, band 19 is preemphasized and 20 is not! The typical errors of about 0.5dB in player deemphasis will probably invalidate any conclusions about microphone differences here.

Bernard A. Engholm
Carlsbad, CA

Empty eristics!

Editor:

I was not amused by the empty eristics of those February letters from John Marks and Kevin Conklin. One of my teachers was a friend of Gustav Mahler; and I used to play in an orchestra that launched Herbert von Karajan on his career (see *Stereophile*, November 1989, pp.175-182). Mr. Conklin's review contained at least one regrettable statement, and his letter (February, p.35) includes some misinformation. Mr. Marks, however, in his Talmudical zeal to defend Mahler, gratuitously attacks von Karajan, perhaps under the impression that two

wrongs make a right.

Both correspondents have missed the point, which might well be sought out in the town of Bray (Berkshire, England), where the attitude of a 16th-century vicar later inspired a famous popular song:

*And this is the law I will maintain
Until my dying day, Sir,
That whatsoever king shall reign,
I'll still be the vicar of Bray, Sir.*

He managed to retain his living throughout the often violent religious changes that took place during the reigns of Henry VIII, Edward VI, Mary, and Elizabeth, by bending as a supple willow before prevailing winds.

Mahler followed a similar course when he converted in 1895, while at Hamburg, long before his appointment to the Vienna Court Opera in 1897. But his position was thereby made reasonably secure.

Von Karajan, whose history is quite the opposite of Mr. Marks's suggestions on p.33, is further misrepresented by Mr. Conklin on p.35.

The true facts are as follows. Von Karajan, in order to qualify for a position at the Aachen Staatsoper in 1935, was informed that it would be in his best interests to join the Nazi party. At this time, he liked to go skiing with an Austrian guide, but when he wanted to ski in Switzerland he had to join the Swiss Alpine Club and hire a Swiss guide. Which he did. For similar reasons he joined the party so as to make his position at Aachen reasonably secure.

He did not divorce his first wife because she "happened to be fractionally Jewish by Nazi accounting." His first wife, an opera singer, was with him only for two years. But in 1942, by taking as his second wife Anita Güterman (who was one-quarter Jewish), he undoubtedly incurred the wrath of the Nazis. One month after the marriage he made a formal request to leave the party; and he not only left the party but also the country, vanishing into Italy for the duration of hostilities.

Most significant of all is that his first international success as a recording artist was due to his conductorship of the Philharmonia Orchestra in London. He made his first recording with them on April 9/10, 1948, Dinu Lipatti being the soloist in Schumann's Piano Concerto.

Since the Nazis had reduced London to a pile of rubble, it is hardly likely that the orchestra would welcome a "Nazi" conductor. They knew better; and although there were a few

non-Christian members of the orchestra, they raised not the slightest objection to him.

On the contrary, the Philharmonia recognized von Karajan for the genius that he was, and supported him wholeheartedly. It was only in America that prejudice persisted—a prejudice based partly on insufficient understanding of the true background, and partly on a lack of evangelical tolerance. By which I mean that it is sacrifice, not good works, that brings salvation.

Denis Stevens
Santa Barbara, CA

Derogatory references

Editor:

John Marks's hysterical letter and Kevin Conklin's response to it in your February issue contain derogatory and inaccurate references to Herbert von Karajan that need to be corrected. I do not claim, of course, that Karajan's record in the Nazi era was spotless, but it certainly was a great deal more complex than the unrelieved villainy depicted by these two ill-informed writers. I also believe, as do many others, that he was a great musician.

Mr. Marks's attack on Karajan appears gratuitous, since it has no detectable relevance to anything else in his diatribe. It is not "an indisputable historical fact" that Karajan lied about his membership in the Nazi party or that this membership was anything other than what he always said it was, a formality needed to hold musical posts under the Third Reich. Those who think they know all there is to know on this subject ought to consult Richard Osborne's articles in *Gramophone* (November 1989) and *Musical America* (January 1990). The issue of Karajan's record as a party member is still very much in dispute.

In his reply, Mr. Conklin compounds the error by asserting, in a ridiculously garbled version of what actually happened, that Karajan divorced a "fractionally Jewish" woman in the early years of the Third Reich in order to advance his career. The truth is that this "Nazi married a partly Jewish woman in 1942, as the Final Solution was gathering momentum. They were divorced in 1958. (In addition to the Osborne articles, see Roger Vaughan's biography, pp.115, 128.) Mr. Conklin should not have made this scurrilous and utterly untrue accusation on the basis of dimly recalled information from a magazine letters column. Such carelessness in establishing the facts does not

inspire confidence in a reviewer.

Daniel Morrison
New York, NY

The anti-Semitic philosophy and policies of the Nazis were so powerful that even now it is possible to faintly and unwittingly echo them, as with the phrases "one-quarter Jewish" and "partly Jewish" in the above two letters. As I see it, someone can either be Jewish or not Jewish. Being "fractionally" Jewish is as much an impossible human condition as being "fractionally" Catholic—though not, of course, in the eyes of the Nazis, who killed millions on the basis of such specious distinctions.

—JA

Now you have

Editor:

I have always wanted to write to you and hope to do so again some time.

Haines Ely, M.D.
Grass Valley, CA

Carver's OK

Editor:

Your uncertain relationship with Bob Carver got another chapter in the December 1989 issue (Vol.12 No.12). Sam Tellig, on p.77, says the Carver amp has desirable tube-like sonority but not much bass. Yet Sam was powering typical overpriced small systems that can't reproduce much bass anyway. Larry Archibald, on p.274, says the Carver amp was impressive on the expensive IRS Betas. Perhaps I can add my opinion. It has taken me a long time to discover Carver equipment because of bias among audiophiles and magazines. Your high-end shows were my first exposure to this equipment. After listening through Stax headphones and speakers that can put out deep bass, I find the Carver amp a pleasant compromise between tube-amp opaqueness ("warmth" distortion) and limited bandwidth, and the hard sound of most high-end transistor amps. . . For limited amounts of money, Carver provides innovative products. I suspect Bob Carver tries to cater to fashionable high-end tastes even if there is no particular quantifiable engineering reason for doing so. Warranty service has been above average, and upgrades are available at moderate cost for earlier, less efficient versions of his speakers.

Bill Swenson
Colfax, CA

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A great disservice?

Editor:

You have done a great disservice to your readers with Robert Harley's very negative review of an obviously malfunctioning Carver Silver Seven-t mono amp or amps in the January issue. If an amp doesn't measure up to spec and sounds like shit, it must be broken. Common sense. Right? Right.

I read "The Final Word" in your December issue where Larry used the word "impressive"—not shit, but impressive—to describe the sound of the Carver amps. Something doesn't add up, so get it added up and correct it.

David Keith
Torrance, CA

A total disgrace?

Editor:

I thought your review of the Carver Silver Seven-t was a total disgrace to anyone with any type of intelligence whatsoever. It was obvious that because the amplifier was a "Carver" it would deserve nothing less than the compliment of being "a sound reinforcement amplifier" as well as sounding "hard, metallic, white, edgy, without depth, and low-frequency notes were amorphous blobs, without definition." Creative words, very creative.

Having a pair of these myself, I found the review quite amusing. I think the Silver Sevens sound very open and "sweet." For example, Jennifer Warnes's voice on "Bird on a wire" is very warm and silky, the soundstage is very stable, and upper frequencies are very lucid and smooth. It is by no means harsh! I also feel they are an excellent value at any price!

If you guys at *Stereophile* have such "Golden Ears," why were three other magazine reviewers blown away by the incredible sound? Of course, those other reviewers are probably deaf, and Bob [Carver] must have taken time out of his busy day and bought each one of them a new Acura sedan. I think now that Carver is "hot" again, you have your pincushion back that you had just a few short years ago.

Since you're open to suggestions, you should change your name to *Stereotype*—those pants fit you better. **Randal S. Bingham**
Phoenix, AZ

A trashing?

Editor:

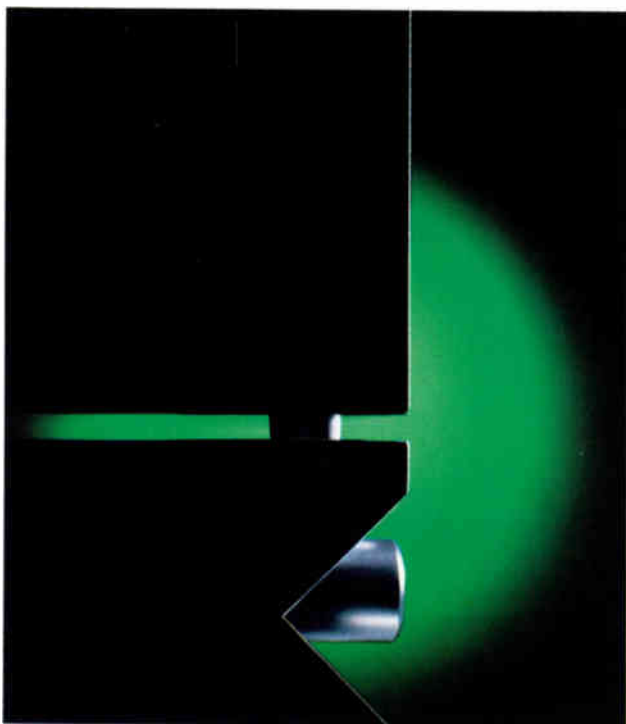
Robert Harley's trashing of the Carver Silver

Seven-t mono power amp in the January 1990 issue prompts this note. It might prove amusing, for reasons which will soon become evident, to begin with an excerpt from my "Random Noise" column in the November/December 1989 *Fanfare*:

"By virtue of Carver's proprietary power supply, a pair of SS-ts weighs together 32 pounds—something, I shouldn't wonder, of a prima facie bummer for a clientele accustomed to seeing its amplification delivered by forklift. Should the high-end fantasy mills charge the Silver Seven-t with hubris and throw away the key (God only knows what they'll think they're hearing), Carver would do well to initiate listening tests wherein his critics are encouraged to specify the hardware against which they'd like to see the monoblocks compared, along with whatever else they fancy. So long as the procedure's carried out in an objective fashion, I'll make book now on the outcome."

So much for my words. Your Technical Editor writes, "... the pair of Silver Seven-ts were the worst-sounding amplifiers I have heard in a long time" It appears, then, that he got a *pair* to review. Inasmuch as he found an SS-t oscillating at 50mV into two ohms and asks in something resembling a stage whisper whether he hadn't damaged the amp in an earlier clipping test, one wonders why he didn't measure the other for a similar problem. Or was his purpose to do a number on Carver? Further evidence supports the view. The reported frequency response bulge pictured on p.156 amounts to 0.1dB worth of infidelity. The reader, of course, sees a bulge on a graph, and bulges on graphs are very bad news. Perhaps one reader in fifty understands that the bulge appears in an environment of *remarkably* exquisite resolution. Perhaps one in a hundred is capable of savoring the implications behind the fact that, of Harley's too-few measurements, one of the two he chooses to illustrate just happens to reveal the bulge. (Most physiologists and physicists would agree, I think, that the listener who claims to be able to hear a 0.1dB frequency-response aberration in an amp playing test tones or music quite likely has bats in his family tree, and likelier yet in his hyperactive belfry.) I find it no less curious that Harley refers to this measurement as a "slight peak" (p.155), whereas in his VTL review (p.161), an excursion that goes clear off the inset he calls a "slightly rising HF response"! Peaks, of course, are nasty brutes;

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Law Kong Ink Audiophile Magazine, January 1989

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Ken Kessler HiFi News & Record Reviews, March 1989

That's the kind of design it is: it sounds right from the very first note. More correctly, it doesn't really sound much at all.

Alvin Gold HiFi Answers, December 1988

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rising responses, euphonious. However, since measurements have so very little to do with what subjectivist reviewers claim to hear, one wonders why they take them at all.

As to measurements, my technical half looked for Harley's oscillation and found none, anywhere, at input levels varying from 50mV, in steps of 1dB, down to 35mV and up to 70mV. He repeated this into loads of 1, 2, 4, and 8 ohms. (Perhaps we should name this furtive oscillation "Harley's Comet.") He checked frequency response into the same range of loads and duplicated Harley's findings with the same impedances as well as a simulated electrostatic load (2.2 μ F). Still seeking evidence of instability, he checked squarewave response with resistive as well as, again, a simulated electrostatic load, and found no trace (pun intended). Incidentally, the squarewave response grew comelier yet with the 2.2 μ F capacitor in parallel with the resistive load. As a fillip, he measured the amp's power capability into a 2-ohm load and gave up at 40V RMS (800W), lest the load explode in his face. The amp was nowhere near the end of its tether; my technical half was.

Harley hears the SS-t so utterly lacking in refinement as to be fit only for PA systems. What can one say? That I like it well enough to have arranged with Carver to keep the pair I got to review? Consider it said. They're gorgeous to look at and would seem to do the job as well as, or better than, anything I've heard. I listen to recordings several hours a day (I write about them) and have visited a great many audiophile installations, pretty much for the same reason people pick at scabs. I've yet to hear a system I favor over my own. It consists of a pair of Mission Isoplats supporting a Yamaha 1110 CD player feeding directly into the amps (the player has a volume control), thence to two pairs of back-to-back Allison IC-20s wired in parallel in an omnidirectional, near-field configuration which manages to turn the acoustic liabilities of a large, reverberant space to an advantage. (Roy Allison has heard this eccentricity and approves.) Signet PC-OCC wires connect the lot. If the source is well recorded, I get a spacious, rock-solid, clearly etched soundstage, a thrilling dynamic, and a low end capable of tripping alarms. (I should mention, too, that the Allisons so wired will offer, at points, a close-to-two-ohm load.)

With all due respect to *Stereophile's* aggregate *savoir-faire* and methodology, I find

audio-hardware evaluations arising from impressions of very little use. I could probably write a book about colliding subjectivist opinions *vis-à-vis* a given product, and would, were the subject less tiresome. If the SS-t is as bad as Harley says it is, its cacophonies will no doubt penetrate one's ignorance of what precisely he's listening to. I allude, of course, to the above-mentioned *objective* test, with this key shift in emphasis: *Stereophile*, as the aggressor in this sorry affair, rather than Bob Carver, the victim of what seems to me a gratuitous slur, ought to initiate it, since the burden of proof does appear to rest with your publication. You're certainly under no obligation to take me up. I put forward the proposal only because I'm convinced of your ironclad commitment to Truth, Beauty, and the American Way. The SS-t can be compared blind, into any impedance or manner of load, to its tubed namesake, Krells, Thresholds, Jadis, you name it—whatever sets tweak pulses to fluttering. I've every reason to believe Bob Carver would cooperate. I've also every reason to believe that the Silver Sevent, assessed thusly, would acquit itself as well in that rational environment as it does in my home.

Mike Silverton
Brooklyn, NY

It's a necessary part of the human condition, for someone who disagrees with the conclusions of an honest, thorough piece of reporting, to attempt to discredit it by ascribing those conclusions to political motivation. To put such criticisms to rest, the Carver Silver Sevent amplifiers that Robert Harley reviewed unfavorably in our January issue were not defective. As explained in the review, it was Bob's attempt to drive a 2 ohm resistive load to clipping with the amplifier that had led to a spurious oscillation subsequently appearing on its output. The measurements were performed after the auditioning, so it is a non-sequitur to suggest that this was the reason the amplifier sounded so bad. When RH informed me of the Carver's apparent inability to drive a 2 ohm load, I asked him to repeat the measurement on the other amplifier of the pair in my presence. It, too, broke in the identical manner: there was no oscillation before the power test, but there was after. In addition, as we also had another pair of Carver Silver Sevent amplifiers to hand which sounded identical to the formal review pair before they

broke, I am happy that Bob reviewed a representative product.

Regarding graphs featuring what Mr. Silverton feels to have exaggerated vertical scales, my brief to Technical Editor Robert Harley is for him to look for possible explanations for what is heard, not to produce the best straight line. Measurement as Diagnosis. The vertical scales mentioned may be exaggerated, meaning that the effects are small, but that is not the same as saying that they are insignificant. Mr. Silverton is plain wrong in his suggestion that "Most physiologists and physicists would agree. . . that the listener who claims to be able to bear a 0.1dB frequency-response aberration. . . has bats in his family tree." (The unsupported "most [professionals]" usage, in my experience, is always an indicator that the writer's argument has inadequate factual foundation.) Whether or not a 0.1dB peak in a response will be audible depends very much on the frequency range that is boosted by this amount, the "area under the curve," if you please. (See also Tom Norton's interview with Kevin Voecks in the March issue.) I doubt that a 0.1dB peak 10Hz wide at 10kHz would be audible. But if that 0.1dB peak covered the two octaves from 2kHz to 8kHz, it would be audible as a slightly bright character to the sound.

If you look at Bob Harley's response measurements of the Carver and VTL amplifiers in this light, Mr. Silverton's statement that "measurements have so very little to do with what subjectivist reviewers claim to bear" and the associated implication that Bob's analysis of the measurements was biased are also without solid foundation. Fig.1 shows the Carver's response into an 8 ohm resistive load. Though the overall rise in response reaches just +0.1dB at 10kHz, the rise starts at 2.5kHz and doesn't recross the 0dB line until almost a decade higher, at 20kHz. Yes, it is a "slight peak," as Bob said—if Mr. Silverton objects to the word "peak," I am at a loss to substitute an alternative—but I would expect it to be audible, particularly as the lower "skirt" of the peak lies in the region where the ear is most sensitive. The VTL's response into the identical load is shown in fig.2, which has an identical scaling. Though the response continues to rise above the audio band, I agree with Bob's classification of it in his review as a "slightly rising HF response," it reaching just +0.2dB at 20kHz. Eyeballing the areas above flat of the



Fig.1 Carver Silver Seven-t, frequency response at 1W into 8 ohms (0.2dB/div.)

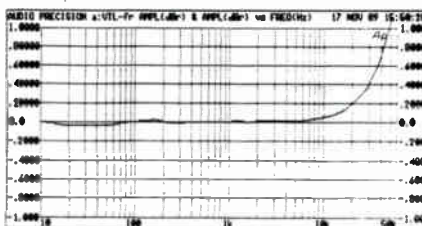


Fig.2 VTL 225W monoblock, frequency response at 1W into 8 ohms (0.2dB/div.)

two curves, the Carver's excess audio-band treble energy would appear to be twice that of the VTL. In addition, the VTL's rise lies mainly above 10kHz, where the ear is generally less sensitive. (Most adults also cannot hear above 16kHz or so—certainly I can't.) As both response aberrations are small, I wouldn't venture the opinion that they would totally explain the large subjective differences between the two amplifiers. There are many other factors involved. But for the reasons explained above, I feel the VTL's departure from flat response to be more innocuous/less audible than the Carver's and Robert Harley's terminology therefore justified.

As to why Mike Silverton's samples would appear to drive 2 ohm loads and ours wouldn't, I would point out that his "technical half" failed to examine the limits of the amplifier's power-delivery envelope. 800W into 2 ohms may be a whole bunch of power, but it is still lower than the amplifier's rated output, Carver specifying that the SS-t should deliver 1000W, presumably continuous, into 2 ohms. It was our exploring the specified envelope that caused both our samples to self-destruct. Had Mr. Silverton's "technical half" looked for instability after testing the clipping-limited voltage delivery into a 2-ohm load, then he or she might well have found it.

The violence of the reaction to negative

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reviews of Carver products—things were no different with J. Gordon Holt's and my review of the M1.0t amplifier three years ago—leads me to think that those who are upset are actually protesting a different matter altogether: that reviews like the one in question give the lie to the message inherent in the Carver advertising that Carver customers can buy nearly \$20,000 worth of sound quality for a tenth of that price. "Something for nothing" is a seductive dream indeed, particularly when it is coupled with a belief in Bob Carver's design "genius." (It seems a more prevalent trait in the US than in Europe to accept on trust someone else's definition of him- or herself.) The scorn that Messrs. Silverton, Bingham, and Keith pour on Stereophile's value judgments I am sure reflect the depth to which each of them is committed to this powerful idea. They have no option, therefore, but to totally reject the implication in Robert Harley's review; that their purchase of the SS-t hasn't bought them \$20,000 sound, and to accuse the messenger of malice and/or bias. (And if they like the Carver's sound, what does our opinion matter anyway?)

It is useful to examine the reality of this claimed sonic identity: ie, to ask what is the objective evidence that the Silver Seven-t amplifier should sound the same as the expensive tubed Silver Seven design? In my recent interview with Bob Carver (February, p.92), I asked him what kind of null between the two amplifiers was achieved in production. "When you play music, the null will typically bover around the 36dB area," was Bob's answer. As I understood this to mean at the time of our conversation, this is the maximum depth of the null, in the midrange, which means that at best the amplifiers are 98.5% the same. Alternatively, you could say that the solid-state clone sounds like the expensive amplifier but with 1.5% of added character. Which in amplifier terms is a lot. (In the original "Carver Challenge" article in Vol.8 No.6, Bob implied that a 70dB null—0.03% difference—between two amplifiers was required to be sure that they sounded the same, with 48dB or so, 99.7% similarity, being typical between two channels of the same amplifier.)

So, if the two amplifiers should not really be expected to sound the same, it is feasible that the Silver Seven-t might sound quite disappointing. Which was Robert Harley's ulti-

mate conclusion, one that Dick Olsber and I share, based on our own auditioning of the amplifier. And one that has nothing to do with our personal feelings toward Carver the man or Carver the corporation.

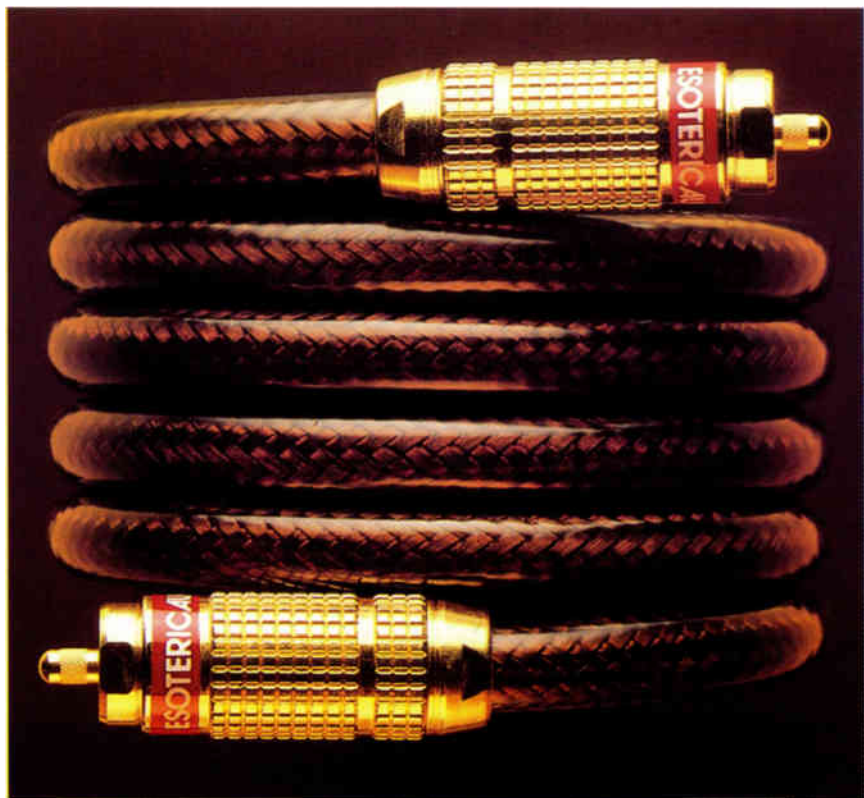
Though I have no interest in carrying out the blind listening tests proposed by Mr. Silverton—does Mr. Silverton exclusively carry out blind listening for his reports in Fanfare?—there remains one aspect of Stereophile's coverage of the Silver Seven-t which is still to be sorted out: as pointed out by Mr. Keith, why the amplifier was felt to sound poor in the opinions of Robert Harley, Dick Olsber, and myself, yet in his "Final Word" column in the December issue, following his experience with the amp driving the IRS Beta, Larry Archibald had written that "The capture of ambient details, the delicacy of voices, the richness of ambient information . . . are dramatic." To attempt to resolve this matter, we have sent the undamaged pair of amplifiers to J. Gordon Holt for a "Follow-Up" review. Readers may remember that the venerable JGH was proclaimed by Bob Carver in Vol.10 No.3 (p.208) to have hearing that was "flawless, like that of a wee lad," so I assume that his eventual verdict on the Silver Seven-t will be accepted by Mr. Silverton, et al as the final word on the subject. —JA

Errata

Editor:

First, regarding "Building a Library" in Vol.13 No.1, I would like to point out that the two Oistrakh recordings mentioned are not played by David Oistrakh. Only one of them is (Monitor MCS-2073E with Kondrashin). The other is played by son Igor Oistrakh (Mobile Fidelity MFCD-888 with Rozhdstvensky). Barbara Jahn's comments on the performance of the Monitor version are on the spot. Indeed, poise, subtlety, and refinement are all hallmarks of David Oistrakh. On the other hand, the interpretation of the younger Oistrakh is more impassioned and energetic. The first movement is almost a minute faster than David's, which could partially account for the "rushed" feeling. But the whole concerto is marvelously played, especially the Scherzo movement. If the Monitor LP can't be found, the Mobile Fidelity CD is worth buying.

Second, I think that Sam Tellig, fickle soul he, has really gone off the deep end. I am, of



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course, referring to his columns in Vol.12 No.6 and Vol.13 No.1. Specifically, his "observations" on the Thiel CSI.2 and the Vandersteen 2Ci. Why the change in tone (no pun intended)? And the Monitor Audio 7s. First he raves about them. Then he chucks them. What's the deal, Sam?

Hector V. Corpus, Jr.
Philadelphia, PA

Courage

Editor:

I want to applaud Sam Tellig's courage in standing up for the Shure V15 Type V-MR cartridge. I also think it's terrific, and I've been disappointed by the moving-coils I've tried.

I remember reading about the Shure in *The Absolute Sound* and getting the impression that it was at best bland, boring, emotionally uninvolved. For some reason I also had the impression that you folks included it in the *Stereophile* list of "Recommended Components" only rather grudgingly.

So I tried the Grado Signature 8. It hums and it mistracks miserably on even a slightly warped record. I tried the Denon DL160 and the Ortofon X-5MC. Lots of detail and excellent bass, but after a while unsatisfying. A mechanical sound, especially on voices.

I was riding the train one morning and saw an ad for the V15 Type V-MRE—Shure's 25th-anniversary "limited edition" of the cartridge. Apparently they pick the best of the lot, put them in fancy boxes, and sell them as collector's items. I was going by J&R, and the devil made me go in and buy one (\$189). What a wonderful surprise! It does *not* lack detail. It is *not* bland or boring. It *is* emotionally involving. You are right. It makes music. And it will repay any kindness you show it—better arm, better headshell, better cables, whatever. I can't compare it with the \$1200 cartridges because I wasn't born with silver bridgework, but compared to other highly touted cartridges in its price range, it's terrific.

Since people think we're nuts for using the Shure cartridge anyhow, here are a couple of other iconoclastic things you might try:

Use Stylast. I guess it will reduce record wear and the \$0.08/hour stylus cost even further; I know it sounds better. I don't care what Enid Lumley would think.

I also don't care what Harry Pearson and company say. Use the "dynamic stabilizer." The sound is more focused and natural.

Every once in a while, take the stylus out and run the cartridge (*without* the stylus) on the Fluxbuster—a gadget I bought to try to fix the moving-coil cartridges, but now use to make a slight improvement in the Shure.

Sam Tellig's article amazed me further by recommending Radio Shack 18-gauge solid-core wire to connect his amp to the speakers. I had tried that and didn't like it. But after I installed the Shure cartridge, I thought, what the hell, and tried it again. Amazing. Apparently the "synergy" between the more expensive stuff I was using and the moving-coil cartridges was that the cable was removing high-frequency components that shouldn't have been there anyhow—one fault compensating for another. My runs are about 30', bi-wired, and I don't hear any bass loss or dynamic compression compared with the other cable.

Ken Craven
Morristown, NJ

Can Sam explain?

Editor:

I respectfully request that Sam Tellig explain or otherwise reconcile: "what [Krell Digital] means, among other things, is that high-end, really high-end analog playback systems, are dead" (Vol.12 No.8, p.71); "analog is still king" (Vol.12 No.11, p.84); and "I never hear magic with solid-state. Never. Not with Krell. . . It's tubes for me" (Vol.12 No.11, p.89); with his subsequent purchase of a new Krell KSP-7B and KSA-80.

I find analog more natural sounding, but even one moment of vinyl surface noise destroys the illusion of realism. Consequently, I am coping with digital as well as I can by using a Krell SBP-16X. The rest of my system consists of a Mod Squad Deluxe Line Drive, an Aragon 4004, and Martin-Logan Monolith IIs (soon to be IIIs). I believe you will find the Monolith IIIs to merit a "Class A" rating, and *Stereophile's* reviewers' apparent unfamiliarity with them is causing your readership to remain unaware of very special speakers.

Ron Resnick
New York, NY

Is Sam serious?

Editor:

I'm faxing you about Sam Tellig's article in your February issue of *Stereophile*. Armor Alling your CDs?! Is Sam serious? Is there any real sonic benefit to this ritual? Sam was not clear

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if his article was on the up and up, or just another audio anarchist attack on the CD lovers of the audiophile world.

Please clear the air. Does it work or not? I trust your ears. (Somewhat more than my own.)

Mark R. Zyskowski
Chicago, IL

Soooo mellow

Editor:

With regard to Armor All (*Stereophile*, February 1990, p.67), I must confess that I prefer a zinfandel white on my CDs. It just makes the sound soooo mellow, probably due to the fruity aroma.

Oh yeah, when my favorite vineyard's grape juice is applied, the sound level from my CDs drops at least 4dB. Honest! Of course, I sneak a few nips during all application sessions.

Even the neighbor's red setter hears a difference. Eureka! And I also found two deceased mice in my garage, next to my sound room. Wonder what all of this means? **Brad Miller**
By The Numbers, Incline Village, NV

Anarchy, indeed!

Editor:

It's the first annual High-End Hi-Fi Achievements Awards ceremony. All of the luminaries in the field are present, anxiously waiting to see which one of them will win the final award—that of "Greatest Achievement in Perfecting the Art of Digital Audio Playback." Dan D'Agostino grits his teeth. Mike Moffat sighs nervously. Tony Di Chiro fidgets impatiently.

"And the winner is . . .

. . . the winners are Sam Tellig and his friend Lars for their discovery of the use of Armor All protectant in enhancing the fidelity of the CD medium."

Anarchy, indeed!

Sam, I take back everything bad I ever said about you—and that's a mouthful! I refer, of course, to your exposé of the sonic virtues of treating the playing side of a CD with Armor All solution (February p.67). Armor All works! My brain does not want to believe what my ears are hearing; after all, I haven't spent hundreds of dollars upgrading one interconnect, or thousands replacing my electronics! Maybe I oughta get an extra bottle before the manufacturer decides to inflate the price.

What gives?

Stew Glick
Springwater, NY

First a word of warning to Mr. Craven: If you use a Flux Buster on the Shure, be sure to remove the stylus assembly first.

So uptight, Mr. Resnick. I guess that comes from living in New York. This is supposed to be a hobby—for fun. My views keep changing. I've said it before—I often change my mind, so don't do anything on my say-so. Next month I may say differently. As to my ambivalence over analog/digital, things are in such a state of flux. I'm with you, Ron, as to the excellence of the Krell 16X processor—I bought one. Paint the edges of your CDs green once the CD Stoptlight from AudioPrism becomes available (more about that next month—but don't use another green paint marker in the meantime; the paint may eat your CDs). Buff your CDs, if you like, with Armor All—or, better still, 3M Imperial Hand Glaze (more about that, too, next month).

As for my well-documented, long-running, tube/solid-state ambivalence, I am hearing magic from a Krell KSP-7B and a KSA80. The trick was getting the Krell gear into my own system. I still like tubes on Tuesdays and Thursdays. But on balance, I'll take the Krell gear as my reference. The Krell combo gives me smoothness, musicality, neutrality, resolution, and balls. Years ago, I said that the Audio Cheapskate should be read as the chronicle of one man's neurosis. I agree with my friend Lou's wife, Anita, who says, "Audiophilia is a disease for which there is no cure. At least with an ordinary disease, the patient either gets better or dies."

Yes, Mr. Zyskowski, the Armor All works. But there is one hitch. Applying Armor All to your CDs tends to leave a dusty film after a few days. No big deal to wipe it off, but you should—in order to avoid any possibility of getting dust on the laser lens. In the weeks after I wrote the Armor All article, I learned about another, and I think preferable, way to polish CDs: 3M Imperial Hand Glaze (Part No. 05990), available from auto-supply distributors and used mainly by auto body and detail shops. You get a shine like Armor All but no dust (assuming you buff the disc well). As for the sonic benefits, ask Mr. Glick. (Mr. Miller: Take a tip from my pal Lars. Just listen.)

Here's what I think happens. Any way you can put a shine on your CDs will tend to improve the sound—make it easier for the laser to get at the bits in the pits, hence less error cor-

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rection. If you think Armor All—or 3M Imperial Hand Glaze—makes a big difference, wait till you hear the CD Stoplight, from Audio-Prism. —ST

Wadia say?

Editor:

I happened to overhear the following conversation at the regular Thursday night audiophile schmooze session at Sal's Moonlight Lanes & Pizza in Armonk, New York:

"Awright, awright, Arnie, lemme get this straight. Ya got this little silver thing, sort of like the little mirror on the lid of the case the old lady uses to put that schmutz on her puss, with music on it. Ya say its got over 40Gs' worth of holes or something punched in it per second, and that's the music. Okay. Now, ya put this thing into some kind of toaster oven or something which is connected to some computer gizmo, whaddaya call it, a Whadiya? Okay, so the computer reads all them holes and then you say it *guesses* a bunch of holes or bits or something between the ones it actually reads on that little silver thing? Geez, Arnie, that's great!!! Sixty-four times, you say!! Okay, so the computer makes all them guesses, then kind of connects the dots and, Ba-da-bing, out comes Frankie Valli and the Four Seasons just like they was in my living room standing right there next to the Sylvania.

"Hey Arnie, how much does this gizmo run? 7700 clams!! Shees, that's a fair chunk a' change. Ya know, a guy could pick up a real sweet '84 Coupe de Ville for that.

"But Arnie, I gotta ask ya . . . My buddy Vito says he has this turntable thing. Says that *all* the music is right there on the record. No guessin' at all. Says that all it takes is a needle connected to some kinda generator that runs across the record. Says the records are cheaper too, if you can find 'em, and they last pretty long too. Vito says that with the right turntable, something called a Soda or a Yuppie, I think, you get sounds with life and air. You get a feel of the size of the ballroom of the Sands Hotel in Vegas when you put on a Wayne Newton record. And get this, Arnie—Vito says a real good turntable that gives ya all that this Whadiya is trying to guess at sets you back only about a third or half of what they get for the computer gizmo. Can ya beat that???

"Now Arnie, come on. Stop stroking that hose. Yeah right, Music Hose (heh-heh). Yeah,

I know, progress is important. But geez, Arnie, why pay enough for a car to get some machine that guesses about music using some formula, when for a lot less you can get something that reads all the music right there with no guesswork. Something that's been around for a long time and only gets better?

"Yeah, yeah, I know. It's not as high-class or high-tech as the computer gizmo, but they sure look nice enough, those turntables, and you get to see it all. Awright, Arnie, I know. Why don't ya go ahead and hit that 7-10 split, we're down by 20 pins." **The Sound Thinker**

Madison, CT

Wadia prove?

Editor:

I do not doubt that the Wadia 2000 is a quantum leap in digital audio. But let's put the significance of the Wadia in perspective.

The Wadia has given us a sort of quantitative proof that the human ear/mind processor is extremely adept at sensing the time-domain features of sound. This is great; however, it's quite another matter to conclude that we suddenly have the ability to find all the answers because digital is comprised of ones and zeros, is mathematically black and white, and therefore fixable. After reading the review, I find all evidence to the contrary! In fact, it appears that we may be entering a subjective realm which could be as illusive as ever. Why doesn't Balgalvis explain quantitatively why we can hear the difference between 8x or 64x resampling rates? Can we mathematically show that 64x is sufficient? Perhaps 128x is better. A reviewer of a futuristic processor with improved algorithms and increased processing power may conclude that the resampling rate has improved the sound. But subtle changes to the algorithm may be responsible. Or how about the cabling and connectors? Perhaps it was the improved clamping arrangement on the CD. I know Balgalvis is content with the situation, but I'm afraid *be's* suffering from a digital version of "analog madness." The "black and white" conclusion I draw is that the Wadia has just opened a can of worms.

It appears that it may be time to reevaluate the entire digital recording/playback process. I think it's pretty logical that if 64x resampling at playback and subtle differences in algorithms are audibly detectable, it's certainly just a matter of time before the benefit of increased sam-

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Stereophile,
"Recommended Components,"
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pling rates at the *recording* is explored. This opens a whole new evaluation of the benefits of increased data storage, which may lead to revised standards for recording/playback. Are Gigabit CDs out of the question?

The problem is, with all the variables involved, it could be extremely difficult to decide when any part or process in the digital chain is truly optimized or free from any compromising of the musical truth. Maybe we can develop new methodologies for analyzing digital. New test methods and parameters which help measure subtle time-domain effects may help, but history and experience have shown us that we can never really get black-and-white answers from spec sheets. It's more or less the same problem in that it's difficult to relate numbers to the musical experience. Overall, there's certainly plenty of work which has to be done.

No, I do not share Balgalvis's enthusiasm. To revel in the fact that digital progress has been fast is quite off the mark. When you look at the big picture, it's ironic that many of the elusive qualities of analog will probably have their counterparts in digital. I envy his experience with the Wadia, but I'm afraid a \$7700 processor is not going to be the solution for most of us. Meanwhile, he can go ahead and hound all of us who have preferred to listen to analog while digital is going through growing pains. The bottom line is (as evidenced by the Wadia), *our ears were right.*

Robert Wade
Newton, NJ

A little extra information

Editor:

I may be able to add some useful information to Barbara Jahn's excellent review of Monteverdi's "Vespri di San Giovanni Battista" (February, p.199). In the notes to this CD, it is said that the party including the Dutch diplomat Constantijn Huygens visited the Venetian church of San Giovanni in Bragora toward the end of June 1620. But Huygens, who wrote his diary in French, noted down "St. Jean et Lucie," and no church dedicated to John and Lucy exists in Venice, or anywhere else for that matter. What Huygens heard (and tried to write) was "Saint Jean e Lesi," and the church where the Vespers took place was that of San Giovanni Elemosinario in the Ruga Vecchia San Zuane (St. John) just across the Rialto Bridge. The patron saint of this church was St. John the Almsgiver, Patriarch of Alexandria in 610 AD.

This reconstruction leaves much to be desired. The editor drags in a very obscure dialogue by Natale Bazzino, but although this in fact relates to St. John the Baptist, it has nothing to do with Monteverdi. On the other hand, Monteverdi's own motet for St. John (*Fuge anima mea*) is unaccountably omitted, although it was published in Venice in the very year of Huygens's visit, of which it may well be an offshoot. First published in Dom Lorenzo Calvo's *Symbolae diversorum musicorum*, it reappeared in our own times in the *Collected Works of Monteverdi*, G. F. Malipiero, ed. (Vol.16 p.444).

For instrumental pieces the editor avails himself of sonatas by Dario Castello, a Venetian but no particular friend of Monteverdi's. It would have been better to draw upon the *Affetti musicali* (1617) of the composer's good friend and colleague Biagio Marini, who actually dedicated one of his compositions to Monteverdi.

The final oddity is the hymn *Ut queant laxis*, with its famous "Ut re me" line-beginnings. In this recording, stanzas 2 and 4 are omitted, the editor claiming that they were "replaced" by ritornels for violins and continuo. Not so: for Paul the Deacon's poem would then make little sense, as the CD booklet proves (p.36). Try reading your favorite five-stanza poem and leaving out nos.2 and 4!

Incidentally, you can find the original tune in Gustave Reese's *Music in the Middle Ages*, p.150. What should have happened is that the missing material ought to have been suitably interpolated on the *alternatim* principle common to countless liturgical compositions. This principle has been known in the scholarly world for at least the past 40 years.

And this is what happens to music!

Imagine flying in a jet with half-a-dozen major faults, none of which had been checked. Far from landing, you wouldn't even take off! Many of the recordings issued today don't take off for the very simple reason that nobody checks before the buttons are pressed.

Do "they" ever ask an expert? Rarely, in my experience. They will spend unbelievable sums of money on fancy equipment, and not a penny on what really matters—the knowledge and expertise that make a recording as near authentic as possible. You see, they can't show off someone else's expertise, but they can show off their equipment! So much for the musicians...

Denis Stevens
Santa Barbara, CA

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Stereophile, Vol. 12. No. 10. Oct. 1989

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• Some unequal information

Editor:

I much enjoyed reading Les Berkley's footnote to his review of some *Well-Tempered Clavier* recordings in the January '90 *Stereophile*. Explaining equal temperament to the layman is a beast of a task, but Leslie manages remarkably well in a very small space. However, he does convey one wrong impression: that equal-temperament tuning imposes the same compromise all 'round, with every musical interval subjected to a similar (if small) error. It is true that all *keys* are affected equally, but the intervallic errors themselves differ considerably between fourths and fifths on the one hand and thirds and sixths on the other.

This is because "equal temperament" is a misnomer. It is the gaps between notes that are made equal, not the degree to which those gaps are thereby "tempered" away from the ideal scale of just-intonation. The latter's simple frequency ratios ensure (in any one key) that all but two of the consonances are exact, whereas equal-temperament tuning shifts them away from perfection by the following amounts: minor third (0.92%), major third (0.8%), perfect fourth (0.11%), perfect fifth (0.013%), minor sixth (0.79%), major sixth (0.91%). Thus, while fourths and fifths are very well favored, the thirds and sixths edge toward a 1% error, which can still grate on sensitive ears. Bach was well aware of this, as Leslie hints, and people have gone on tinkering with alternative temperaments ever since.

One interesting point arising is that it may be possible with some electronically generated music to have continuously mutable pitches, so that all intentionally harmonious chords are given a perfect intervallic structure as the music proceeds—despite key shifts, etc. This would be a highly sophisticated version of various 19th-century "enharmonic harmoniums," a sort of Infinitely Tempered Clavier. Perhaps such an idea is already being applied. Any offers?

John Crabbe

London, England

The cable wars?

Editor:

I am not given to writing home anymore, to friends or to my congressman. In fact, after one year's subscription I was seriously of the mind to simply and quietly leave you.

I think no single issue summed up and

epitomized my frustration with *Stereophile* as the labyrinthine turns of "The Cable Wars." The series of articles read something like a bad detective novel, with a new and definitive resolution around the turn of each page.

The authors seemed to range from shepherds lost in the stock room of Radio Shack with rolls of 18 gauge, to Mr. Machiavelli with \$100/foot Intergalactic Connectors, to Professor Heathkit from the school of subjectivity wherein "anything will do ya because it all depends upon the elements of the configuration."

This strabismic analysis also seemed always lurking at the very edges of expensive equipment reports—the Audio Anarchist *vs* Mark Levinson *vs* the adjunct author. I prefer the outright lie, the firm mistake, or a quorum of idiots to the muck of indecision.

And then came Gideon with his trumpet. The sound of cool reason. Ken Cowan's article on cables (Vol.13 No.1) says, in essence, "Here, you can listen to the difference on paper, now go forth and look for the difference in your listening room."

While I do not appreciate his having left the players unnamed, I respect his position and decision, and especially his invitation to your staff to join in a thoughtful inquiry. My curiosity is piqued.

Based upon my expectations that you *will* follow his lead, I am renewing my subscription. \$35 is peanuts to pay for an intelligent review and well-reasoned ground for a point of reference.

Nathan Brunhoff

San Diego, CA

Discontinue "Recommended Components"

Editor:

I recommend that you discontinue publishing "Recommended Components." A brief examination of the type of components listed in this section leads me to conclude that you and your staff tend to evaluate components by the underlying, yet untrue, adage that "newer is better." You try to subconsciously deny that this principle is not adhered to by awarding special designation (a star) to those components that have managed to survive in this listing over time. The reason why some components receive special designation at all may be attributed in part to the generally slow progress in development (*ie*, low new-product release

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frequency) that has been made in their component categories (tuners, tonearms, and turntables) relative to other component categories (pre- and power amplifiers and CD players). While I cannot deny that actual improvements are realized with some new product releases, this is certainly not true in most instances.

There is also a general inconsistency with respect to how components appear and disappear in this listing which is confusing to the reader. Does it seem fair to the audiophile community to dismiss a component's merits merely because a newer model has been released or because it has not been auditioned recently? Often, overlapping product styles and generations are marketed simultaneously by a manufacturer for good reason: balancing product diversification with strong consumer demand for a particular product. The likely answer to the latter question is that I suspect that the collective auditory memory of the review staff is failing. Oddly, a new component occasionally receives a preliminary rating (generally A or B, as opposed to the more customary K rating) based upon a brief audition. Should the *Stereophile* readership seriously consider such a component in the same light as other, more thoroughly auditioned components within the same class?

The single most important change you could effect in your magazine is the removal of "Recommended Components." Such an action would elevate your magazine from what I perceive as an industry trade journal to an authoritative consumer publication.

Daniel Celander
Boulder, CO

Adcom confusion

Editor:

I'm very confused by Gary A. Galo's review of the Adcom GFP-565 preamplifier in the February issue of *Stereophile*. He praised the unit no end, said it was better than the Class A ARC SPII in some respects, but ultimately gave the '565 a Class B rating.

So what keeps the unit out of Class A? His review was too good for a Class B rating.

Chris Strawser
Winter Park, FL

Which Adcom?

Editor:

I have followed with interest the recent discus-

sions in *Stereophile* regarding the Adcom GFA-555. I recently was in the market for a new power amp, and I auditioned the GFA-555 at home along with the less expensive, 100Wpc GFA-545. To my ear, both amps had great clarity, but the GFA-555 had a bit too much of a hard quality playing my B&W Matrix 802 Series 2 speakers. The GFA-545 had the clarity I sought, but none of the hardness of the GFA-555. I decided to buy the GFA-545, since it has plenty of power for the B&Ws, and, to my ear, better sound. I'm surprised that I've seen no review of this amp in your magazine, when you have so favorably reviewed the Adcom GFA-555 and GFA-535. My Adcom dealer was not surprised at my selection. He has had other customers tell him they prefer the sound of the Adcom GFA-545 to that of the GFA-555.

Bob Noblitt
Houston, TX

Taking a beating

Editor:

Lately, I've noticed a rather nasty tendency to bash previously recommended products. Specifically, I'm referring to the downward spiral of the Adcom GFP-555, which has gone from a Class C recommended preamp to Class D, and is currently deleted. Most recently, the '555 took a beating at the hands of Gary Galo during his February review of the new GFP-565. In fact, GAG spent more than 400 words—during the review of another product!—telling of the alleged design flaws which doom the '555. Way back in Vol.12 No.6, PWM went out of his way during his mini-review of the GCD-575 to take a couple of quick shots at the '555. Why waste so much time and space chipping away at the reputation of a well-regarded and proven component?

Where were GAG and PWM when Anthony H. Cordesman reviewed the GFP-555 for *Stereophile* more than three years ago? My point is that the comments of GAG and PWM serve only to degrade the reliability of *Stereophile*'s recommendations. If GAG's and PWM's observations are correct, then the '555 should have never been Class C. If they're wrong, then their comments can only steer readers away from auditioning a product which deserves their consideration. The best reviews reserve their wrath or praise for the DUT.

Paul A. Cervantes
West Hills, CA

Two mechanisms lead to products slipping down the "Recommended Components" ladder with time. The first is that progress in product design inevitably leads to a raising of our review team's expectations. The introduction of products that either push forward the subjective frontiers at the cost-no-object front or redefine what is expected at a particular price level inevitably means that a Class C recommendation from three or four years ago would probably these days be better rated in our Class D category. In the specific case of the GFP-555, it would still be in Class D except that the revised Mk. II version appeared from our preliminary information to be sufficiently different to render our recommendation invalid. ("Recommended Components" almost exclusively concerns components that are current: ie, that can be auditioned in a dealer's sound room. Of course, Mr. Celander, "new" doesn't necessarily mean "better." It does, however, equate with "easily accessible," which is why we drop recommendation of discontinued components.)

The second mechanism concerns the effect of our reviewers' longer-term exposure to products following the initial review. This is particularly relevant where the initial review was extremely favorable or unfavorable. We try to ensure that we obtain additional samples of the product in question for further listening. Such was the case with AHC's original review of the '555; such will be the case with GAG's review of the GFP-565.

If the rating of the component in question changes slightly as a result of such continued scrutiny, does that mean that the reliability of Stereophile's recommendations is "degraded"? Only if you ignore our fundamental advice on how to read reviews, which is not to regard our published opinions as being carved in stone and banded down from God on high. Instead—although I know that J. Gordon Holt disagrees strongly with me on this and intends to write an "As We See It" on this subject in the near future—I intend our review opinions to be used as the starting point for you, the readers, to form your own. Our conclusions on components may be informed opinion, even very-well-informed opinion, but they are still opinion; if you adopt a reviewer's value judgment as your own without ever questioning whether it truly fits your needs or matches what you think, it is unlikely that you will get a sound

from your system that will be satisfying in the long term. Too many times I have experienced audiophiles trying to ignore how much they dislike the sound of their systems and how little they enjoy their music because the components they own have all been highly praised in the magazines.

And yes, despite our best endeavors, it is always possible that a reviewer may have overpraised a product. It is also possible that the reviewer may have been too stingy in his praise for a particular component. Which is why, despite Mr. Celander's dislike for "Recommended Components," I regard it as a very important part of the magazine. It is the only place where all of our reviewers' relevant experiences of every component are taken into account when deciding on the ultimate value judgment.

(Incidentally, the apparently arbitrary classification of unreviewed components mentioned by Mr. Celander—some get a Class rating, most are just mentioned in passing in Class K—has an straightforward explanation. Our policy goes as follows: Promising new components that haven't yet been formally reviewed in the magazine's pages always appear in class K, except when one or more of the review team has had sufficient hands-on experience of the product to feel confident in giving it a formal rating.)

There is a final point worth making to those overly concerned with the "Recommended Components" "Class System." Whether a product is Class A or Class D, that product is still strongly recommended. There is no shame a component's owner need feel if his or her preamplifier, for example, drops a class with time. Whether they enjoy their music is all that's important. For example, the system I'm listening to as I tap this out this on my laptop consists of some Class A components (Mark Levinson No.25/26 preamplifier and No.20.5 power amplifiers, Linn Ekos tonearm and Linn Troika cartridge), a Class C turntable (Linn LP12 sitting on a Sound Organisation table), and Class C loudspeakers (Rogers LS3/5as sitting on Celestion SL stands). Does the presence of the less-than-the-best turntable and the inexpensive loudspeakers mean that I should hang my head and shun the company of audiophiles? No way. My records sound great and that's all that's important to me. And should be to you.

—JA

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Aragon by Mondial Design	Hobson Ultimate Sound	Rabson Audio
Arcam	Home Recording	Rafa
Arcisi	Rights Coalition	Reference Recordings
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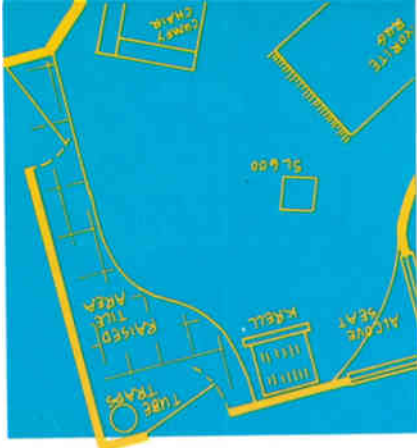
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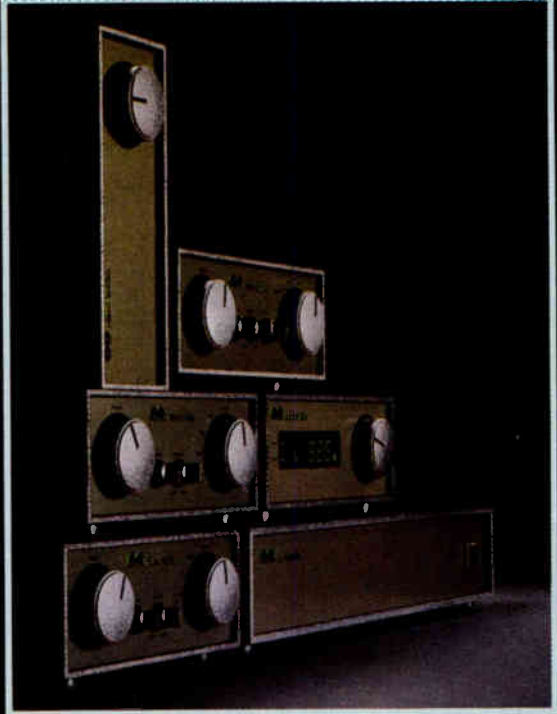


US: Richard Lehnert

In the March 1990 *CD Review*, editor/publisher Wayne Green, in his "The Last Word" editorial, excoriated US record companies' attachment to the wasteful CD longbox. (See my "Industry Update" on this subject in Vol.12 No.9.) Green pointed out that "more than 250 million CDs [are estimated] to be sold this year. That's 250 million boxes and blister packs added to our waste disposal system . . . about seven million cubic feet of added trash." What can we do about this?

As of the first of this month, with the Canadian subsidiaries of PolyGram, A&M, Warner/Elektra/Asylum, and Virgin dropping the CD longbox, the US will be the *only* country in the world continuing to use the cardboard packaging. In protest, Rykodisc, that model, innovative record company (they were the first to release a 3" CD) of, believe it or not, *music* lovers, has once again scooped the entire record industry. A recent press release announced Ryko's "cost credit on compact discs ordered by and shipped to our distributors in a jewel box only, without the standard 6x12 packaging." For retailers who still desire longboxes, Rykodisc will print them on recycled cardboard.

The major labels' prime objections to giving up the longbox have been the apparent greater security provided by the packaging, and the increased space for attractive graphics. Retailers are reluctant to give up the box because of the costs of installing new CD racks and displays (like the LIFT system). But Ryko began working toward elimination of the longbox a year ago, in a *Billboard* "Commentary" of April 1, 1989 by chief financial officer Robert



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"International Audio Review", Hotline #43-45

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"Fanfare", Vol.10, No.4

CES — Summer '87

"Pure musicality is the only way I can adequately describe what I heard: no sensation of electronics or speakers, with believable sound staging and tonal accuracy... I think it would be safe to say that this represented the most 'music for dollar' at the show."

Lewis Lipnick

"Stereophile" Vol.10, No.5 Aug, 1987

CES — Winter '88

"The Death of Mid-Fi: The Big Chill in Vegas"

Michael Fremer

"The Absolute Sound" Vol.13, Issue 52, page 250

CES — Summer '88

We weren't there.

CES — Winter '89

"...I am pleased to note that the sound in the Kinergetics room was stunningly true to the sound of the original Steinway. Nice one, Ken and Tony!"

John Atkinson

"Stereophile" Vol.12, No.3, Mar. 1989

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associates will have done that in the March issue.

On, now, to the exhibits that I remembered a week after the show without having taken notes. (I did make a few phone calls, but I had to remember who to call.) These are listed in no particular order.

ATC

In the US, where the term "music" means rock, audiophiles have long considered professional monitor speakers as a breed apart. Designed primarily for extreme ruggedness and the ability to break windows, they are righteously scorned by audiophiles for their lack of any redeeming perfectionist values. Most of them are horn systems—and rather poor examples of the genre at that—which image poorly, produce no perceptible depth, and are very highly colored through the midrange and spizzly at the high end.

In Europe, where "serious" sound reproduction starts and ends with classical, there is far less difference between the speakers designed for the home and those intended for studio use. The latter will play much louder and are designed for the maximum possible reliability, but they are not categorically different in terms of sound quality. As a result, professional monitors often end up in the homes of well-heeled audiophiles, where they earn more praise than scorn from picky house guests. The legendary LS3/5a, for example, was originally designed for the Beeb as a portable monitor for on-location recording of orchestra concerts, and some KEF and B&W models are just as popular with professionals as with audiophiles.

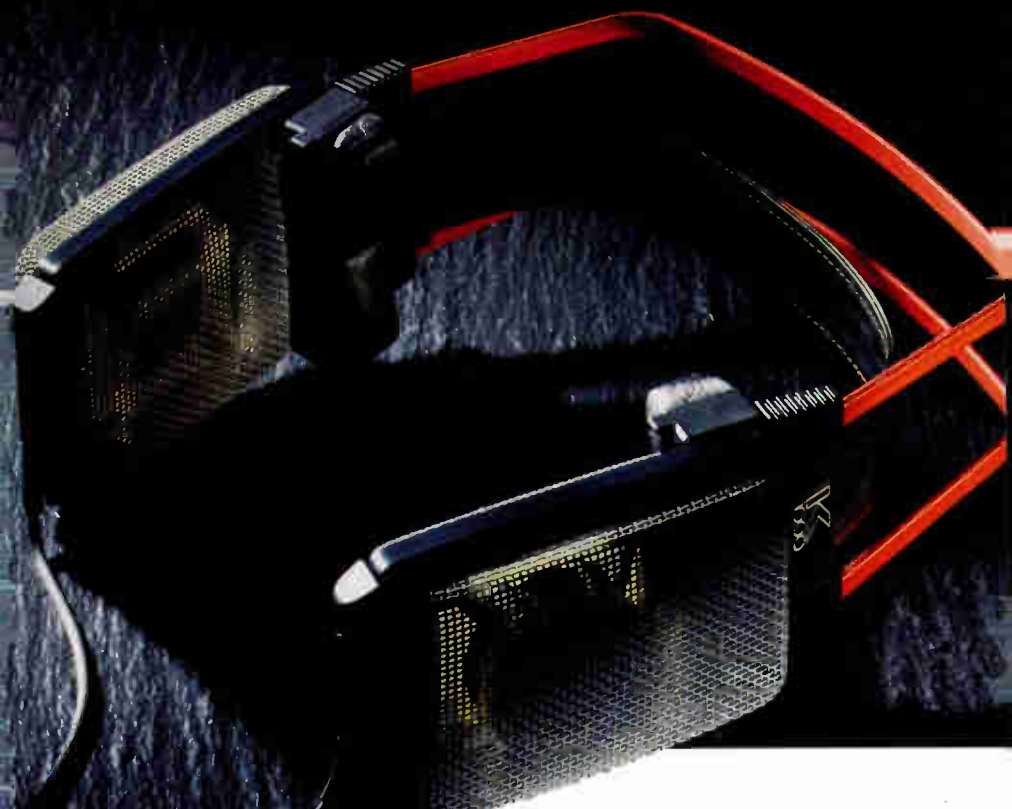
ATC is not an active ingredient of flu remedies, it is the name of the English firm that makes Nelson-Reed's superb midrange drivers, and has been producing monitor loudspeakers and OEMing raw driver units in Europe for the past 15 years. ATC is now offering its professional loudspeaker line to US consumers, and the firm showed two of them at CES: an SCM-20 two-way satellite-sized mini for \$3290, and an SCM-50A self-powered three-way unit for \$7840. I liked the 20, but I was very much impressed with the 50A.

For years, I have been arguing that power amplifiers and loudspeakers should be designed for one another. The difficulty of finding that magical energy synergy through trial and error should make the wisdom of my contention

self-evident, yet the reality of the matter is that really good amplifier designers don't know how to design loudspeakers, and really good loudspeaker designers don't know diddly-squat about amplifiers. But manufacturers of both products are uneasy about what would seem the obvious solution—a collaborative effort—because each is afraid an apparent endorsement of a specific company's product would lose them dealers who don't carry that other company's products. Then there is the simple fact, demonstrated time and time again in the past, that US consumers just don't like so-called powered loudspeakers. One can speculate about the reasons for this until hell becomes a democracy, but the bottom line is that powered (or "active") loudspeakers have never sold to American high-enders. I must also confess that, while I have tirelessly pushed the *idea* of active loudspeakers in *Stereophile*, I have never met one I didn't actively dislike. Until now.

My first impression of the SCM-50As was of remarkable tidiness. Everything was under tight control, and nothing seemed to be flopping about at the edges wondering where it belonged in the musical scheme of things. There was no awareness of individual drivers, and if the system's detail was not as great as I have heard, I did not notice the lack. All instrumental timbres, from the brassy tish of cymbals to the rich bloom of cellos, were right on the nose. The large brasses had a delicious, blatty fatness to them, and even massed violins had exactly the right timbre for two-channel reproduction, and were "stringy" without sounding the least bit steely. (Massed violins are always just a bit thin without rear-channel augmentation.) Bass was very tight, respectably deep, and quite detailed, and all the audiophile-type things like imaging, soundstaging, depth, etc. were there in proper proportion, but never obtrusively. There was none of that reticent, laid-back quality so characteristic of many British speakers.

I can confidently state that the 50As weren't perfect, but I can also state that, whatever faults I might have picked up on after lengthier listening, they would probably have been ones of omission rather than commission. But what about output level capability? These are studio monitors, so they should be able to play *very* loudly. I confess, they were only hitting about 93dB on peaks while I was in the room.



AKG has designed new reference headphones: the K 1000. It was clear from the start that natural spatial reproduction is only possible without any ear cushions that would change the sound. This was the idea.

Based on unbiased studies of all transducer types, AKG chose the proven dynamic transducer. However, AKG has updated this concept by developing a new type of magnet assembly called the VDL (Ventilated Linear Dynamic) magnet, using laser interferometry, and coating the diaphragm with an organic violin varnish formulation that has been in use for centuries.

The way in which state-of-the-art audio technology has been put to work in carrying out a revolutionary idea placed the K 1000 in the "Reference" class in all reviews that appeared to date. Listen to Reference at the selected K 1000 dealer nearest you.



and it never occurred to me at the time to ask for window-rattling levels.

I would say that these are well worth looking into, but I do have reservations about them. With three power amps per speaker (one per driver), the chances of one blowing up are higher than when running speakers full-range with a single stereo amp.³ Mitigating against that prospect is the fact that, as pro speakers which have (presumably) been in production for some time, these *should* be very reliable. But mitigating against *that* are two other considerations. The first is that one amplifier breakdown will ground the whole system. The entire afflicted speaker must be shipped off for repair, leaving the owner without stereo music until it returns. He can't just dust off his trusty old Stereo 70 and use it in the interim. Second, and perhaps more troubling, is that ATC's supposed importer doesn't seem to exist. The manufacturer's blurb sheet bore the address of a West Coast firm, whose phone was picked up by an almost unintelligibly noisy answering machine both times I called for info, and who has not seen fit to return my calls.

Sound-Lab

My home territory, so to speak. After a bit more than three years of living with a pair of Sound-Lab A-3s, I still have little inclination to replace them with anything else. No, they aren't fabulous in the imaging/soundstaging departments, and they can't blow you out of the room, but they are still the most durably enjoyable speakers I've ever owned. (If you dig out my original review of this in Vol.9 No.6, read also the upgrade followup in Vol.11 No.6.) Well, now they've been upgraded again.

Designer Roger West has come up with a way of extending the A-3s' low-end range and upping their output capability by a dB or so without changing their basic design: by adding wings. These are a pair of full-height, slightly curved panels which, attached to the sides of each speaker, act to increase the acoustical path length between the front and back of the diaphragm. The result is less cancellation of deep bass and increased acoustical LF coupling to the air (along with—in my opinion—a certain loss of aesthetic appeal). I also had a feeling the speaker's lower midrange was slightly better

³ I'm not implying they are *three* times higher. In fact, three reliable amplifiers may be *more* reliable than one unreliable amplifier.



Sound-Lab A-3

fleshed-out, but I couldn't be sure of that because of the unfamiliar room and program material (symphonic, of course).

The idea of adding passive surface area to a planar system is by no means new; the relationship between size and front/back cancellation was recognized in the 1920s, when the flat baffle was a popular way of mounting paper-cone loudspeakers. But this is the first time (to my knowledge) that it's been done with an electrostatic.⁴

Sound-Lab's room was home to me in another, unexpected way. Instead of the Rowlands he had used at previous shows, Roger was using

⁴ The short-lived fad during the early '80s of stacking Quad ESLs was a misguided effort along these lines. Because of its modest panel size, the Quad is normally subject to a lot of front/back cancellation, for which the speaker has built-in compensation that allows its low end to extend fairly flat down to 40Hz. Stacking a pair of them reduces the amount of that cancellation while at the same time doubling their radiating area; the predictable result is a severe response rise at low frequencies. Bass freaks loved it!

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Boulder Amplifiers' big 250Wpc 500AE units, and the sound was *gorgeous*: big, rich, and gutsy, with beautifully silky highs and what may have been the deepest and tightest bass I've heard from full-range electrostatics. How much of that sound was the amps and how much the speakers I couldn't tell, but I can tell you there aren't many solid-state amplifiers which work really well with the A-3s or, for that matter, with any electrostatics. This Boulder amp may deserve a lot more attention than it's gotten in the high-end press—something else I've got to look into when I get my new listening room up and running. And the speakers? It may be time to upgrade my A-3s again.

Avalon

I've heard of Avalon loudspeakers, but for various reasons (an insipid corporate image, maybe) I never paid much attention to them. At this show, I bumped into Avalon prez Charles Hanson at the airport shuttle curb, and was invited to drop into his CES room out of—if nothing else—loyalty to my new home town. Avalon is Boulder-based, something I had conveniently forgotten since I moved here.

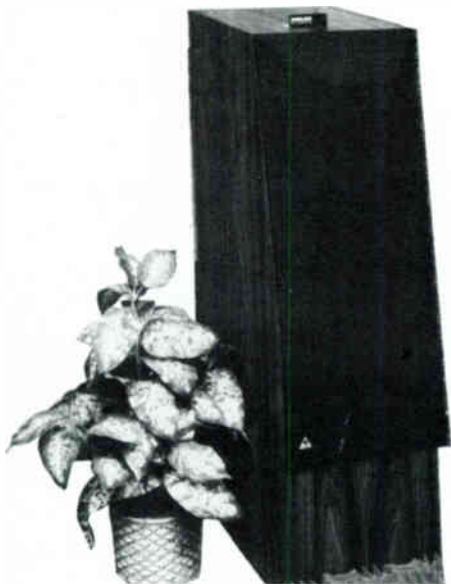
In the final hours as the show wound down, a growing pall of guilt led me into Avalon's room. They were showing yet another (hohum) pair of three-way boxes, with the un-

likely name of Ascent Mark II. Okay, so they were unusually shaped. Each was a rectangular tower, about 46" high, with a rounded and sloped-back front panel. Then I heard them, playing the opening of the Athena Rachmaninoff Symphonic Dances, and my jaw dropped. This sounded like music! I could only stay about 20 minutes, but my initial impression was sustained. I would have stayed longer, but I had some other guilt trips to expiate before the show closed. These speakers are *good*, although at a cool \$13,500/pair, they *should* be. *Stereophile* has gotta review these!

Shahinian Acoustics

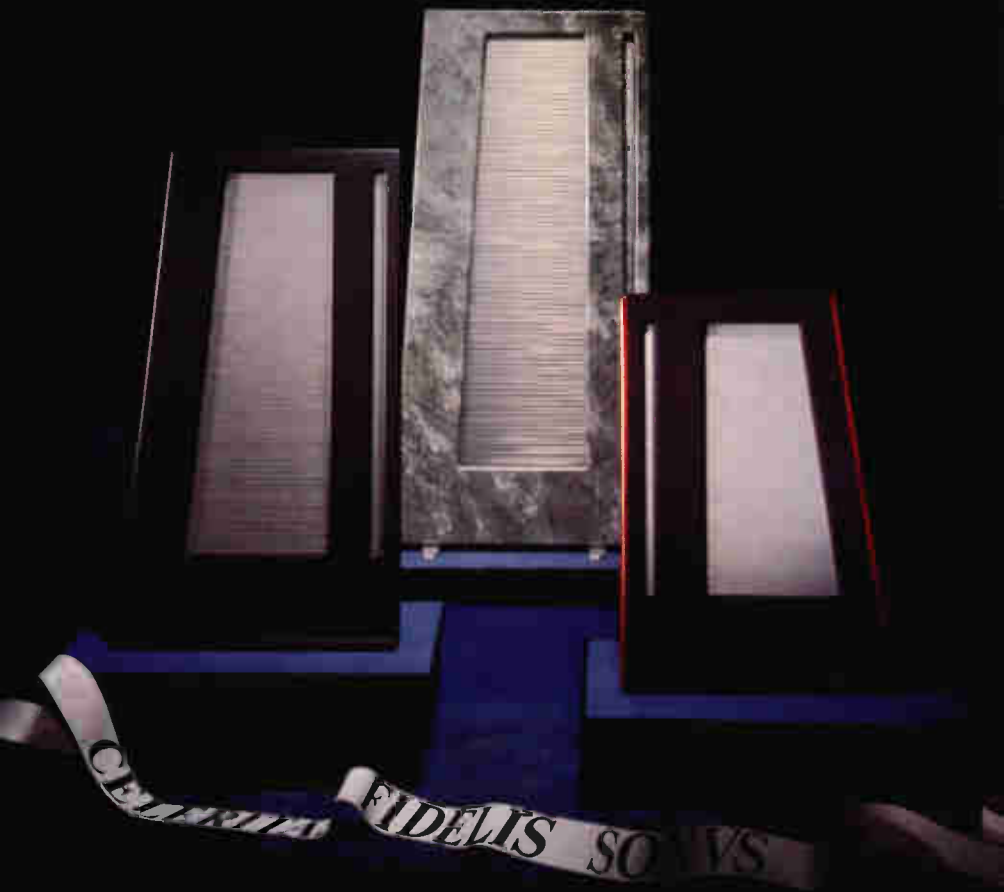
I like Richard Shahinian. He shares my appetite for good food and drink, his musical tastes fit mine like a custom-tailored glove, and he has what I find to be a refreshing disregard for the true, shamelessly commercial purpose of CES, which is to sell PRODUCT. Shahinian loudspeakers have been around for eons, and they are demonstrated at every CES and some of the *Stereophile* shows, yet no one knows they exist. That is because Richard S. does not know the meaning of Hard Sell. He comes to a show, sets up his system, settles his substantial bulk into a comfortable chair within arm's reach of a CD player and a large portable case full of classical (mostly orchestral) CDs, and plays music. He does not attempt to attract visitors by playing the loudest, trendiest audiophile floor-shakers of the month. He plays what *he* wants to listen to: good recordings of good performances. (Yes, Virginia, Holt's First Law of Recording is occasionally violated.)

If you happen to like the music, you're welcome to come into the room and listen. If you ask Richard about his speakers, he'll tell you about them, at length even, but he would really much prefer to discuss the thing we all pretend that audio is about: the music. Like me, Richard believes music should touch us emotionally rather than cerebrally. His knowledge of that kind of music, and the best performances of it, is encyclopedic, and if you question his judgment about an interpretation, he will dig into his portable collection and let you *hear* what he's talking about. If a visitor also happens to notice that the sound bears a more-than-passing resemblance to live music, then Shahinian may pick up a new dealer or two. If he does, that's fine; if he doesn't, what the hell. He's enjoyed himself, and has reminded every-



Avalon Ascent

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one in the audiophile press corps that he and his loudspeakers are still around, just in case they should develop an interest in the kind of music that high fidelity has been all about from its very inception.

I have grown accustomed through the years to Shahinian's presence at shows, but for reasons I am unable to explain, I had never taken his loudspeakers seriously. Maybe it was his laid-back "demonstration" style, maybe it was because I was confident that his multi-driver, spray-the-sound-all-over designs could never



A shoal of Shahinians

do anything of interest to critical audiophiles. But then, last summer in Chicago, the two of us arrived simultaneously at the revolving doors of the McCormick hotel and, after a quick hand of Alphonse and Gaston, invited each other to sit down over a cold beer or two. That was when I learned about his devotion to my kind of music. Next day, I spent some time in his room after show hours, listening to disc after disc and becoming increasingly convinced that the man was on to something. Shortly thereafter, my life fell apart and Shahinian speakers were forgotten.

This January in Vegas, I renewed my acquaintance with the man and his speakers, and can

now report that, indeed, Richard Shahinian is on to something.

Shahinian speakers are modular in design, with several available models of woofer and upper-range driver modules, none of which appears to offer anything new or even all that unusual in the way of loudspeaker design. I spent my time listening to his top-of-the-line \$6950 Diapason⁵ system. The upper end of this consists of a pair of low-profile pyramids slathered with 14 drivers of various sizes and shapes, all aimed more or less outward but mostly upward. There is no way this contraption could deliver anything resembling a coherent wavefront. The subwoofers looked like plain-vanilla rectangular boxes, each housing two 8" drivers, one at each end. The whole system was driven by a single dual-250W Model 803 Bedini power amplifier, fed by Bedini's line-control unit. (These were the only Bedini electronics I saw at the show. Bedini did not exhibit.)

Why am I devoting all this space to what would appear to be a quite undistinguished system? Because its *sound* was absolutely magnificent, that's why. These speakers came closer to creating the *impression* of live-orchestra sound than any other speakers I have ever heard, and that includes the WAMMs, the IRS Vs, and my beloved Sound-Lab A-3s.

The first thing you notice is that they seem to be heavy through the upper bass and lower midrange. Then you notice that this "heaviness" is a gorgeously rich "bloom" that has nothing to do with boominess or soddenness. Then you notice that it sounds exactly like the luminous warmth and power you hear from a great orchestra in a great performing hall. And that's just for starters.

Take the matter of dynamic range. Without touching the volume control, the Diapasons reproduced levels from whisper-soft to almost frighteningly loud, *without a trace of audible strain!* I have heard this kind of ease at high levels from large horn-type loudspeakers, but rarely from direct-radiators. This is the kind of volume level at which the usual dome tweeters turn steely-hard, midrange drivers become defocused, and woofers (and listening rooms) tend to go completely bananas. There was a lot of all of those things to be heard at the show.

⁵ For the musically igerant, a diapason is a variety of lower-register organ pipe that sounds like flapping leather. In most organs, the largest, deepest bass pipes are diapasons.

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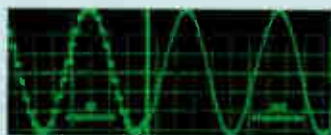
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The photo on the left shows Wadia's internal circuitry. The two large red modules are proprietary 18-bit transversal, multipoint DACs. They have been called "BOSS DACs" in the press. This is in sharp contrast to finger-nail sized off-the-shelf commercial DACs, that cannot handle 2.8-million conversions per second (64X oversampling), nor can they produce the dynamic Wadia Sound!



4X VS. 64X OVERSAMPLING: The left trace is the DAC output at a 92 nanosecond (ns) phase. The signal is at 3 MHz. Notice the 92 slots per cycle. The right-hand trace is the output of the Wadia DAC utilizing 64X oversampling. Notice the smoothness due to the fact that there are 353 slots per 3 KHz cycle.

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But the Diapasons sounded as if you were just tickling them—as if you could just go on cranking them up louder and louder and you would start to bleed from the ears before the speakers gave up. They're rated at an impressive 90dB sensitivity, which means that with that 250Wpc Bedini amplifier, the system should theoretically be capable of 114dB of output. But the fact that it held together so well even at what sounded like mere 105dB peak levels was astonishing enough. The impression of power and ease defied belief! (I did not ask for more volume, although Richard let it loose for a few seconds just to make his point. It was *still* clean!)

Bass drums and timpani, for example, were so tight and concussive you could feel them, yet were completely under control at all times. Loud kettle-drum strokes were "whacks" of the correct pitch and timbre, rather than undefined thumps. Hard-mallet bass-drum strokes retained the characteristic skin-tension attack, built to a profound impact (with superb pitch delineation), then either died out abruptly or trailed off, depending on how the percussionist chose to handle the decay. Organ pedals shook the floor (and the window frames), and had as clear a melodic line as the upper frequency ranges. There was *no* hangover! (I later found that each subwoofer contains two transmission lines, presumably with different cutoffs.)

Massed violins, digging in hard, had the proper rosinous bite (well, maybe they were a little closed-in at the extreme top), but were completely free from steeliness. Woodwinds sounded light and natural, brasses were round and powerful, and cymbals were brilliant and metallic-sounding with virtually none of the sizzle that has generally been attributed to artifacts of CD reproduction. All in all, the sound I heard from recording after recording was almost exactly what an orchestra is supposed to sound like. I found it immensely involving; while the music was playing, it was almost impossible not to become immediately immersed in it. And all this, mind you, was from CD—the medium which many critics claim is "emotionally uninvolving."

I was less impressed with the Diapasons' treatment of small-scale material, which I felt to be a little too warm, but a jazz aficionado I was with told me that what he was hearing was what he remembered hearing when listening in a small nightclub from the apparent distance of the recording.

There was no question here about homogenized sound. Even though the system images rather vaguely, different recordings made in different halls sounded as different as you would expect them to. Good recordings sounded more convincing than mediocre recordings, but they *all* conveyed to me the *illusion* of live music in a real performing space. What's all the more remarkable is that Shahinian seems able to get this kind of sound at every show, regardless of what kind of room he's in, while other exhibitors tear their hair out about the God-awful acoustics.

These speakers are not, however, everyone's cuppa tea. I mentioned imaging. They don't pinpoint instruments across the soundstage; rather, they "suggest" their lateral locations. This is actually what you hear at a concert: frequent concertgoers will recognize this "limitation" and accept it, most audiophiles—less accustomed to seeing orchestra members in the flesh—will find the vague localization disturbing. The Diapasons don't "throw" a soundstage very well, either. The reproduction of spaciousness is excellent, but the *limits* of that space—the rear and side walls—are not nearly as clearly audible as from some other speaker systems. This too does not bother me in the slightest, but it will be a liability to those for whom superlative soundstaging is a must-have.

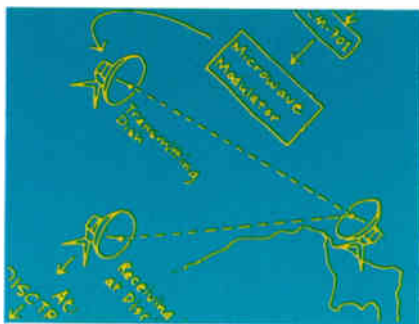
While the Diapason does a lot of specific things very well, it is clearly not so much the sum of those things which makes it so hypnotically seductive, but rather the speakers' ability to create an overall *impression* of reality so persuasive it makes the listener unwilling (or unable) to listen analytically to them. They drew me into the music like no other system I have ever heard!

But there are questions. How would they sound with other amplifiers? Shahinian commented that later solid-state amplifiers don't sound as "crisp" as the Bedini he was using, which made me wonder if his speakers might not sound dull with Thresholds or Levinsons. I don't know what the Bedini sounds like, so I couldn't extrapolate anything.

And that rich, lower-midrange bloom that contributes so much to the Diapasons' realism. . . That's the kind of roundness I normally hear only from well-implemented surround ambience systems. Might there then be too much of this good thing if one used the Diapasons with surrounds? I resolved that I would try a pair of

these speakers in my own listening room, with or without that particular Bedini amp, at the earliest possible opportunity.

There were probably other rooms at the show in which I could have heard the good stuff, but either I missed them or, like Wilson Audio, I just *assumed* they'd be doing the right thing properly as usual, so didn't consider it to be hot news. But if I missed some surprises that should have been included here, my apologies to those who tried but were passed by. Maybe in Chicago. . .



US: Peter W. Mitchell

As I had done a year earlier, I prowled the 1990 Las Vegas CES with an Ivie IE-30A realtime spectrum analyzer and a few familiar CDs in search of loudspeakers worthy of a full review. When a speaker is fed broadband pink noise (which contains equal energy in each one-third octave of the audible frequency range), the analyzer instantly displays its frequency response on a bank of 450 LEDs (30 wide by 15 high). The resulting curves are shown in the accompanying charts.

In most cases the reading was taken at a distance of approximately one meter, directly in front of the speaker at the height that yielded the flattest curve (as long as that was a reasonable height for a seated listener). In speakers with vertically aligned drivers the response may vary drastically with height, especially in the crossover region; so I moved the analyzer microphone up and down and side to side within the normal "listening window" to find the best response.

Even at a distance of 1m, some room-interaction problems may creep into the measurement. The dip around 500Hz in some of the curves is likely to be a cancellation caused by the woofer's mirror-image reflection off the

floor, and a dip around 80Hz may be a standing-wave reflection in the small rooms used for this year's CES. Most of the curves show a broad rise at low and low-midrange frequencies because of reinforcement by wall and floor reflections. I regard this as a desirable property, at least for classical music.

My comments on tonal balance and imaging are based on listening to Hogwood's recording of highlights from Handel's *Messiah* (L'Oiseau-Lyre 400 086-2), which I've heard through about 200 different speaker systems. It's not a flawless recording, nor even my favorite performance (John Eliot Gardiner's Philips set is more satisfying), but it has proven very useful for diagnosing common speaker flaws.

Track 1 features a tenor solo accompanied by harpsichord and cellos, providing an excellent test of imaging, ambience, and midrange accuracy. In many over-bright speakers designed to emphasize imaging and clarity, overtones are prominent but fundamentals are suppressed; the tenor lacks body, the harpsichord is tinkly, and the cellos sound like violas. Through speakers with superior depth imaging you can easily discern the reflections of the voice off the walls of the stage.

Track 4, with a boy-soprano choir and a male chorus, is good for judging high-frequency peakiness, power-handling, and low-midrange coloration. (The boy choir was recorded with a rather chalky-sounding accent mike; speakers with a peaky top exaggerate the sibilance, while speakers with a rolled-off top make it sound sweet.)

With many speakers I also listened to a pop recording, an excerpt from Jennifer Warnes's *Famous Blue Raincoat* Cypress CD. It shows off a speaker's handling of complex material with dynamic transients and energetic bass passages that may excite box resonances.

When loudspeakers were claimed to have extended deep bass, I tested the low end by listening to track 20 of the Pierre Verany *Compact Test* disc (PV-784031), which contains warble tones from 16Hz up. Ideally, any speaker should reproduce cleanly down to some cutoff and be silent at lower frequencies. Bass-reflex designs often let the cone flap wildly and noisily below the cabinet tuning frequency, while acoustic-suspension woofers that have inadequately linear cone suspensions may produce severe distortion in the bottom octave.

I've arranged the following notes in alpha-

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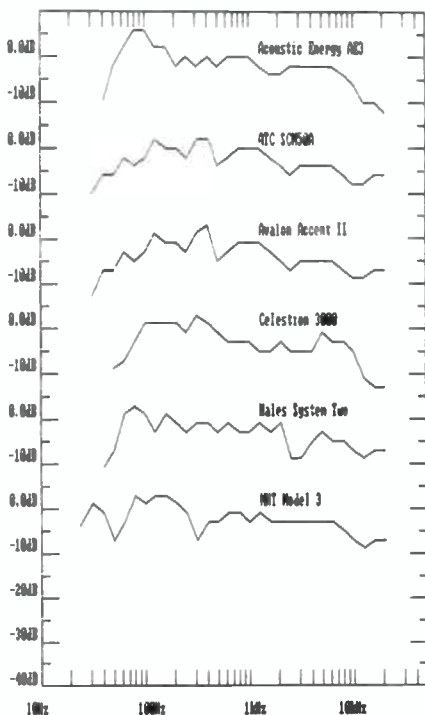
betical order for convenient reference. For some speakers I have listening notes but no curve, either because I didn't have the analyzer with me when I reached that exhibit or because the manufacturer declined to allow testing.

The **Acoustic Energy AE-1** minimonitor struck me as unacceptably lean and bright, but the new full-range AE-3 (\$3990/pair including heavy spiked stands) sounded wonderful. Initially the speakers were too close to the walls and were bass-heavy and somewhat congested. Moving them forward opened up the sound, but the bass was still rather rich, suggesting that the speakers may perform best in a mid-room setting. The analyzer curve, taken at a greater-than-normal distance, indicates how splendidly smooth, neutral, and uncolored the AE-3 is. It has connections for either bi- or tri-wiring.

The **ATC SCM50A** tri-amplified monitor speaker didn't sound quite as impressive in Las Vegas as it had last June in Chicago. After I finished the main listening test and measurement, I discovered that the close listening distance placed me above the best axis of the system. The speakers should have been tipped back more, or the chairs placed further away; slouching to lower my head yielded a more satisfyingly full-bodied sound while retaining the transparent highs and amazing resolution that first attracted me. If nothing else, this shows how tentative all judgments at shows must be: I have requested a pair of the larger SCM100A speakers for at-home trial.

The new Mark II version of the **Avalon Accent** (\$13,500/pair) features a metal-dome tweeter and an improved crossover with Litz-wire coils and "Hyperlitz" stranded internal wiring made of six-nines copper (99.9999+% pure). Someone accidentally bumped a tweeter on the first day, so for the rest of the show the speakers were demonstrated with protective tweeter covers that reduced their output by 3dB in the top octave. With the covers in place, the sound was notably sweet and musical, flawed only by too much low-midrange richness that muddled upper-bass textures. (This may be related to the 400Hz peak in the graph.) With the tweeter covers removed for the analyzer measurement, the sound became more airy but remained essentially warm and musical.

The **Celestion 3000** ribbon-tweeter system seemed to be suffering from difficult room acoustics. Its sound lacked both body and air



in the front row of chairs; moving to the back row improved the low end but lost the imaging. According to the analyzer, the ribbon produced maximum treble energy about 45° off-axis from the front of the box, as expected, but with a pronounced peak around 5kHz and a dip at 2kHz. The smoothest and best-integrated response was about 30° off-axis; this is the curve shown in the chart. The top-octave roll-off was evident at all positions and contributed to the ribbon's "sweet" sound.

The **Hales System Two Signature** (\$4850/pair) is a tall, floor-standing speaker whose dense, rigidly braced cabinet weighs 181 lbs. The sound was okay, but treble harmonics seemed overly prominent. The analyzer curve shows why: insufficient energy around 2.5kHz at normal listening height. At chest height (which might become a reasonable listening height if you slouch in a low chair), the treble level was lower and more uniform, yielding a smoother sound.

At the big Convention Center, **JBL** was showing two very different speakers with confusingly similar model numbers. The L-200t3 (\$2000/pair) contains a 12" woofer and a bi-



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Bill Sommerwerck—*Stereophile*, Vol. 12, No. 12, December, 1989.

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radial horn tweeter adapted from a JBL studio monitor; it played loud but added an unpleasant edge to the sound. The XPL-200 (\$3400/pair) is the top model of a group aimed at audiophiles and at critics who view JBL as a maker of excellent drivers but mediocre systems. It has a 1" titanium-dome tweeter, 3" titanium-dome midrange, a composite (polypropylene and fiber) woofer, a very solid and non-resonant cabinet, and a crossover that allows biwiring or biamping. More to the point, it sounded good—smooth and airy with strong bass (clean and solid down to 25Hz), full-

bodied midrange, clear highs without exaggeration, and excellent resolution of complex textures. It also has the traditional JBL virtue of being able to play loud; unlike most speakers of comparable tonal accuracy, the XPL-200 doesn't become congested or progressively harder at high volume levels.

Now Hear This is the annoying name of a company whose nonexotic speakers deliver pretty good imaging and generally accurate timbres at a budget price. That's an accurate description of the floor-standing \$1000/pair NHT Model 3, which resembled several high-

...remarkable!



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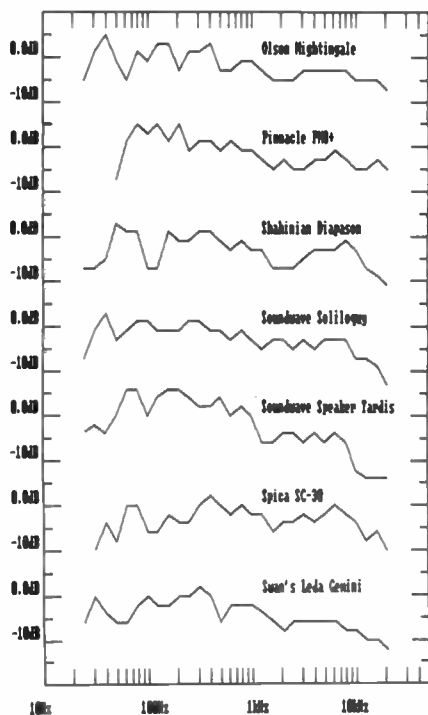
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priced designs in overall timbre but seemed a bit coarse by comparison. (This impression may have been aggravated by the too-close listening distance mandated by the small room.) If you're on a tight budget and are more interested in full-range sound than in midrange refinement, this speaker is worth a look.

Olson Loudspeakers of Berkeley, CA, a company I hadn't encountered before, introduced a well-executed three-way bass-reflex design called the Nightingale (\$1675/pair). It features time-aligned drivers, including a ribbon tweeter. It reproduced the Handel disc with silky strings, a believable tenor voice in a nice frame of ambience, and clearly resolved choristers. Other recordings sounded crisp and clear on the top but a bit "slow" at the bottom. This impression was supported by the analyzer measurement, which is exquisitely flat in the treble but somewhat lumpy in the lows, and by a hands-on test that disclosed some cabinet-panel resonance. With a thicker or better-braced cabinet, this Nightingale might really sing.

Pinnacle speakers are low-cost two-way bass-reflex bookshelf designs produced by two youngish brothers and their mother. The PN5+ (\$179/pair), praised by Julian Hirsch, left me cold. The larger PN8+ (\$400/pair) was shockingly good for the money, providing plenty of air and depth without stridency, and full-bodied midbass that doesn't obscure midrange detail. In a universe of small speakers that either sound too lean (depriving cellos of their natural warmth) or have lumpy bass that casts a veil over everything, the PN8+ manages to sound both rich and clear.

The **Shahinian Diapason** (\$7800/pair including Double-Eagle subwoofers) is a 14-driver pyramid-topped multi-directional system that flies in the face of current high-end convention, in part because Richard Shahinian's first love is the symphony orchestra. Tonal richness, scale, and involvement are the goals here, not pinpoint imaging. Nevertheless, the speakers did a fine job with the tenor solo on the Handel disc, presenting a well-focused central image within a realistic frame of ambience. Pipe organ was reproduced with tonal authenticity, power, and appropriate size, as was grand opera, and the woofers delivered strong fundamental tones down to 20Hz. Some hardness was apparent in soprano sounds, which may be related to the lumpy treble response in the curve—but it is impossible to guess how well

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or poorly a measurement in front of the system represents the combined output of its 14 drivers. If you enjoy music on a large scale, you may find the Diapason as involving as I did.

Soundwave Fidelity makes a line of four speakers with rigid cabinets in the form of five-sided prisms in which drivers are mounted near the apex (the point of the prism). In order to minimize excitation of panel resonance, the drivers are not simply bolted to the box but float on vibration-absorbing polymer sleeves. I looked at the second-largest model, the Soliloquy (\$2400/pair); except for a bass peak that may be a room standing wave, the analyzer curve is astoundingly smooth. Subjectively, this speaker's most outstanding characteristic was its superb clarity and resolution of inner detail in complex textures, achieved without excess brightness or exaggeration of sibilance. String sound was smooth and rosy, imaging was excellent, and choir voices could be identified individually. I've heard few speakers that are as satisfying with both pop and classical music.

The TARDIS Elite speaker (\$2800/pair) from **Soundwave Speaker Works** stands 7' tall, with a curved front panel that places all drivers at the same distance from the listener for the sake of precise time alignment. It was demonstrated with two pairs of \$1700 subwoofers whose fundamental output extended below 20Hz and yielded a bass-heavy balance. Revisions were still being made to the design, so perhaps the production units won't have the three-shelf response seen in the graph. The sound was warm and full, but lacked air.

Spica introduced a new budget speaker, the SC-30 (\$399/pair) in a conventional rectangular box, that evidently is aimed at a broader market than the company's earlier, somewhat idiosyncratic designs. The tonal balance is a bit lean but is wonderfully smooth, transparent, neutral, and uncolored, with impressive depth and clarity. This speaker is a clear best-buy that will put many more expensive designs in the shade.

Some of the best sound at the show was heard in the **Swan's Speakers** demo, partly because proprietor Jim Bock had the biggest and best room in the Sahara Hotel annex. The speakers are built in a picturesque fishing village on Swan's Island, off the coast of Maine. The demonstrated system, costing about \$8000, consisted of a pair of LEDA full-range satellites based on a design by Joseph D'Appolito, plus a pair of GEMINI subwoofers that deliver

strong bass fundamentals down to 25Hz. The sound of the system was warm, clear, full-bodied, smooth, uncolored, spacious, involving, and deeply satisfying. I found it difficult to tear myself away to return to auditioning less natural-sounding speakers in the cramped and ill-shaped rooms that most exhibitors were forced to use.



UK: Ken Kessler

Spring is just around the corner, a time for "rebirth" and all that Mother Nature jazz. So too, is hi-fi reawakening after the year-end madness of Christmas and all that it entails. Within days of posting this copy, the first major London dealer-sponsored show will take place, organized by the award-winning Audio T. Within weeks, the Bristol Hi-Fi Show will open, to the delight of audio fans in the West Country. Shortly after, the Federation of British Audio will have its annual dinner, where hands will be bruised from so much unjustified backslapping.

Frankly, this FBA business is growing more and more like had *commedia dell'arte* (although they'd prefer it if I said *commedia erudita*). A gentlemen's shouting match, a lot of big fishes in a small pond, a clash of egos—whatever may be the condition which has created this most ineffective of industry bodies, the bottom line is a distinct shortage of perception of scale or self-image. One of only two organizations which exists to improve the health of British hi-fi (the other being the dealer organization, BADA), the FBA enters each new calendar year with another grandiose scheme and another list of award winners which everyone (including some of the winners themselves) finds risible.

As far as the latter is concerned, the "public" voting forms have just appeared, and the list is about as extensive as a McDonald's menu. The total number of nominees for no less than four categories is a whopping 12. This doesn't say a whole lot for the creative output of the entire British hi-fi industry for the previous two years, but I suppose it's the best they could muster under the current rules. The nominees were determined as follows: Each manufacturer in the FBA is allowed to nominate its own

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- DOR-90108 *Solid Brass at the Opera - Opera favorites arranged for Brass and Percussion / Solid Brass*
- DOR-90109 *The English Lute Song / Baird, Soprano, McFarlane, Lute*
- DOR-90110 *J.S. Bach: The Goldberg Variations / Guillou, Organ*
- DOR-90112 *Organ Encores - Works by J.S.Bach, Handel, Purcell, Haydn, Schumann, Liszt and others / Guillou, Organ*
- DOR-90113 *Christmas in Leipzig - Choral Music for the Nativity by J.S.Bach / The Bach Choir of Bethlehem and Bach Festival Orchestra, Funfgeld, Cond.*
- DOR-90114 *Christmas with Solid Brass, Christmas favorites arranged for Brass and Percussion / Solid Brass*
- DOR-90115 *J.S.Bach: The Seven Toccatas for Harpsichord / Tilney, Harpsichord*
- DOR-90116 *Piano Music of Robert Schumann - Carnival, Kinderscenen, Phantasiestücke, Op. 111, Gesänge der Frühe / Kubalek, Piano*
- DOR-90117 *Mussorgsky: Pictures at an Exhibition; Stravinsky: Petrouchka / Guillou, Organ*
- DOR-90119 *Improvisations for Christmas / Guillou, Organ*
- DOR-90120 *The Enchanted Isles - Harp Music of Ireland, Scotland, England and Wales / Thompson, Harps*
- DOR-90121 *Czech Miniature Masterpieces - Short works by Dvorák, Smetana, Suk, Janáček and others / Kubalek, Piano*
- DOR-90126 *Greensleeves - A Collection of English Lute Songs / Baird, Soprano, McFarlane, Lute*
- DOR-90127 *Wachet Auf! J.S.Bach: Cantatas BWV 56, 140 and Motet Anh. 159 / Bach Choir of Bethlehem and Bach Festival Orchestra, Funfgeld, Cond.*
- DOR-90134 *The Great Organ of St. Eustache, Paris - Inaugural Recording, Works by J.S.Bach, Mozart, Liszt, Widor, de Grigny and Guillou / Guillou, Organ*
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products at £100 (to charity) per submission, with the members of the FBA selecting a short-list by secret ballot; each manufacturer is allowed only one product on the final voting form. This ensures that no single company can win more than one award, which is as stupid as, say, giving New Kids On The Block a Grammy because Quincy Jones is only allowed to win one. It also means that the FBA is giving awards to *itself*. What you're left with is the most ludicrous awards set-up since Spielberg⁶ got cold-shouldered at the Oscars:

Category 1: Source

Meridian 206 CD player
Roksan Shiraz cartridge
Revolver Rebel turntable

Category 2: Amplification

Creek CAS 4040 integrated
Mission Cyrus Two integrated
Naim NAC72 Preamp

Category 3: Loudspeakers

Celestion 3000/5000
KEF Reference 105/3
Linn Kaber
Mordaunt-Short MS 3.10

Category 4: Digital

A&R Arcam Delta Black Box II
Quad 66 CD player

Okay, here's where we can have some real fun: First of all, how come the Meridian 206 comes under Category 1, but Quad's CD-spinner is in Category 4? Is that to make certain that both CD players can win? And has anyone noticed how the FBA's Gang Of Four (as I've heard them called) all managed to earn a nomination? The Gang consists of Quad, Linn, Naim, and A&R, the manufacturers who sit at the head table and dominate the proceedings. What about the British products—not necessarily the fruits of FBA members—which really *did* try to advance the art of hi-fi? No Radford CD player, nothing from Musical Fidelity, no Croft Micro II preamp (the best bargain in all of hi-fi), no Pink Triangle PIP II, nada as far as ATC or Audio Innovations or JPW or Kelvin Labs or Lynx or Ion Systems or Harbeth or Spondor or Rogers are concerned. And isn't the Celestion 3 a more important speaker in real terms than the 3000? Does Mo Iqbal so upset the mob at the FBA that Monitor Audio's recent

successes should go ignored? Whither B&W, the truly "hot" Acoustic Energy, TDL's exceptional Studio 1, ProAc, Rose Industries, Origin Live, and a couple of dozen others who showed more imagination than at least two-thirds of the nominees? And what about the products which Great Britain makes best: cables, stands, and accessories? According to FBA heavy Norman Crocker, also the chairman of TGI: "Accessories are naff." (Note: "Naff" is the British equivalent of "crap.") Naturally, FBA members like Target and Hunt-EDA were not amused.

I'm certain that some FBA spokesperson can rule out every truly deserving non-nominee without sounding too political, but the tragedy is that the FBA, yet again, has chosen not to use the awards to promote British achievement by recognizing innovation. Instead, it's the same old-school-tie nonsense which makes the FBA such a bore. Okay, so this time around Roksan is in with a chance, which is about as radical a move as you can get when you consider what a mover and a shaker is Linn's Ivor Tiefenbrun in FBA circles, but maybe the Roksan nomination is tokenism to keep the likes of me from reporting on a full slate of obvious candidates. I'll let you know who won what in a few months, but don't be surprised if it reads: 1) Meridian, 2) Naim, 3) Linn, 4) Quad.

Given that the object of the FBA is to improve the lot of British manufacturers (it's more BADA's concern to improve the actual state of the UK retail sector), the FBA Awards are absolutely useless as a PR tool. Which takes us to this year's grandiose scheme—first approved in late 1988—intended to make the combined might of the FBA some form of threat to big Japanese companies which don't even know that the FBA exists. I've read that the FBA is to spend "serious" money on a research project to produce a digital loudspeaker. However remarkable the fact that these companies are prepared to collaborate, the bottom line is that they're prepared to spend an amount which—if the Japanese were to undertake the same research—wouldn't even cover the printing costs for the press releases.

Not being a member of the FBA, or an associate, or whatever it takes to sit in on a meeting, I cannot offer you any details about this project. I cannot tell you what kind of mass hysteria allowed this motion to be carried, or what led the assembled throng to believe that such a piddling amount would help unlock the

⁶ As KK raised the subject, where were Spike Lee and *Do the Right Thing* in the list of this year's nominees? Oh, sorry, I almost didn't see Danny Aiello's name in the "Best Supporting Actor" category. —JA

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secret to a project which one learned designer told me is about as viable as a perpetual-motion engine. The other side of this view, though, is at least they're *trying* to do something about Japanese world domination of the hi-fi industry, and for that we in the UK should be grateful.

If you sit back and take stock of the situation, you realize that, with few exceptions, these guys are still acting like it's 1980, not 1990. The immaturity, the amateurism, the pettiness—so little professionalism has been allowed to intrude into this club that I'm amazed they still have the nerve to assemble. True, the TGI Group (Goodmans, Tannoy, Creek, Mordaunt-Short, Epos) is big enough to warrant mention in the financial pages of the mainstream newspapers, and the company's deal with Jensen Loudspeaker and Ford is serious stuff. Yes, KEF and B&W can take on the Yanks in their home territory. Sure, Mission is now considered a very serious manufacturer of upmarket computers. And, for the most part, they can out-demo any manufacturer at CES. But the vibe is still the same.

Quad's Ross Walker still regards the British hi-fi press in the way the Church responds to Satanists. Ivor'n'Julian—though now about as close as Dean Martin and Jerry Lewis—still pander to a lunatic fringe which makes non-affiliated high-end consumers look like subscribers to *Consumer Reports*. Some so-called "established" companies still manufacture products so ugly and uncommercial that most cottage industry-sized brands wouldn't even sink so low. And they still go on and on about a "national hi-fi show" to rival CES or Funk-austellung when the only thing they're capable of organizing is an annual dinner only slightly more complex than booking reservations at a restaurant.

Why do I waste so much space on the FBA? Because of what it *could* be. Here's a body of manufacturers which could influence the future of British hi-fi in a constructive manner, and in ways which other sectors of the community—the retailers, the press—cannot do. It could strive to establish standards of manufacture among its members in the way that BADA strives to create standards of retailing among its members. They could make the FBA Awards something akin to an Academy Award instead of a gold star in the classroom, so they would mean something more than they do at present. Their advertising could be conceived

by someone who knows how to sell. Their goals could be established by someone who cares as much about the industry as a whole as he or she does about his or her own ego.

But, as in many organizations, the people who have the skills, abilities, or motivation to turn it around are probably too busy making and selling hi-fi to get too involved with the activities of this sex-free version of a college fraternity. At least one new face moves into a position of power each year. I just hope that the rank-and-file members have the stones to vote in someone who has no interest in overseeing a mutual admiration society. Lord knows that's the last thing the British hi-fi industry can justify.



US: Jack Hannold

Government reports occasionally do some good. It was the National Bureau of Standards' report on Copycode that spared us from that sonic horror. After reading it, congressional leaders must have realized that discrediting a single anti-taping scheme is like cutting off a single head of the Hydra: two more proposals, equally monstrous, will soon take its place. They knew they would need a thorough study of the economic impact of home taping, both on the record industry and on consumers, as well as a comprehensive study of existing copyright law, in order to make an informed decision on what action, if any, was warranted.

The Office of Technology Assessment was charged with the task. On October 30, 1989, nearly 20 months after it was ordered and 31 months after the peak of the Copycode controversy, the OTA report, *Copyright & Home Copying: Technology Challenges the Law*, was released.

It was well worth the wait. This 293-page document could do to *all* anti-taping legislation—royalty tax bills as well as measures to require anti-copying technology, whether in a sonically innocuous form like SCMS or a sonically disastrous one like Copycode—what the NBS report did to the Copycode bills. Here, in a single volume, is everything you need to know about the issue.

But I don't recommend that you read the

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entire report. No single author is listed, and it reads like the work of a committee. Much of it is written in legalese and econobabble. But there are some clear and lucid passages; and even the tedious parts hold some valuable information. For that reason, I think members of Congress and their advisors—at least those on the copyright subcommittees—should read it all the way through, as should key people in consumer electronics, including those in high-end audio. But many of them will be too busy. So for those who haven't the time or the inclination to wade through the whole thing, and for *Stereophile* readers, I'd like to offer a few brief highlights.

"Choosing an appropriate balance of harms and benefits from uses of new technologies is a political decision, not a technical one, in which the public has a stake." (p.19)

"It is noteworthy that none of the alternative approaches of limiting recording technology or imposing new fees seemed to have an identifiable constituency among the public. In general, tapers, purchasers of prerecorded products, and nontapers seemed to feel that it was fair to leave current home taping practices unchanged." (p.165)

In a representative democracy, we should expect our elected representatives to take our views into account when making a decision that is essentially political; and we can assume that the OTA's survey findings reflect the views of most congressional constituencies. But what about the rights of copyright owners? They aren't absolute.

"Copyright was developed for the promotion of intellectual pursuits and public knowledge, primarily for the benefits of the public at large. Benefits accrue to the public from the creativity of authors, and the limited monopoly granted authors is a stimulant to ensure that creativity. *Without a public benefit arising from the copyright system, the grant of a monopoly would not be justifiable.* Thus, there is a balance between the rights of copyright proprietors and the rights of the public. Arguments that equate copyright with royalty income run counter to this concept and appear to be inconsistent with the intent of the Framers of the Constitution." (p.5; italics in the original)

So when Congress considers enlarging the "unlimited monopoly" of music copyright owners, whether by imposing royalty taxes or by limiting the capabilities of consumer re-

corders, the only relevant question is whether the proposed change would yield any benefits, not to copyright owners, *but to the public at large.* And if the expected benefit is an increased number of new releases, the answer is probably not.

"The economic effect of home copying on producers," says OTA, "depends on whether home copying stimulates or dampens the demand for originals. Either case is theoretically possible." (p.181)

And even if anti-taping legislation were to generate a windfall for the record industry, there is no guarantee that this would result in more choices in the record store. It is quite likely that the leaders of the highly concentrated, oligopolistic industry described in Chapter 4 ("An Overview of the U.S. Record Industry") would prefer to use added revenues either to buy out small competitors, further concentrating the industry, or to boost dividends, rather than to invest in new talent.

What does all this have to do with DAT, or more specifically with the Athens agreement on SCMS? Plenty. Early drafts of the OTA report were circulating in Washington last Spring, and RIAA officials were among the first of the "interested parties" allowed to see them. It must have been obvious to them that the report would badly damage their efforts to get royalty taxes enacted in the US, and would probably hamper their efforts to get limitations on new technology, too.

The RIAA has been criticized by its erstwhile allies—composers, music publishers and licensing agencies, talent unions, and even some of its own members—for selling out at Athens, but nothing could be further from the truth. With this report hanging over their heads, the record industry negotiators did better than they could reasonably hope to do. It was the hardware representatives, also privy to the preliminary drafts of the report, who blundered in making the agreement, in my opinion. They gave their reluctant support to something the record industry desperately wanted—a measure that would serve as a precedent for governmental regulation of personal taping in the US—and they needn't have.

But if *Copyright & Home Copying* receives the attention it deserves, legislation to require SCMS in the US, like any other kind of anti-taping legislation, should never make it through the copyright subcommittees.

"Sticker Bills" & song lyrics: Pornography or free speech?

"Sticker Bills" have been springing up like mushrooms—or is it toadstools?—in state legislatures around the country. These laws would require record manufacturers to warn purchasers and/or their parents of possibly offending lyrics contained in recordings. How? By applying warning stickers or reprints of lyrics to the album covers (not the shrinkwrap). In the February 24, 1990 *Billboard*, appeared the following "Open Letter" from the editor and publisher of *MUSICIAN* magazine. A cover story in the very next *Billboard* told of the 119-store Disc Jockey retail chain's decision "to stop carrying manufacturer-stickered album titles." In other words, to stop ordering records from the very companies attempting to comply with

the Parents' Music Resource Center's voluntary record-labeling guidelines. (The conservative PMRC, headed by Tipper Gore, is looking almost middle-of-the-road these days.) This underlined even more strongly the idiocy of policies which most penalize the parties—in this case, record retailers—who have the least to do with generating the offending material. As the *MUSICIAN* letter said everything we would have wanted to say, JA and I decided to simply reprint it here (with permission).

By the way, *MUSICIAN* is a fine monthly publication covering contemporary mainstream rock and jazz. A year's subscription costs \$17; write to *MUSICIAN*, Box 1923, Marion, OH 43305; (800) 347-6969. —RL

AN OPEN LETTER FROM *MUSICIAN* MAGAZINE

The Pennsylvania state legislature is considering passing a law (S.B. 938, the "Gamble Amendment") that requires any record, cassette or compact disc that contains any reference to "suicide, incest, bestiality, sadomasochism, rape or involuntary deviate sexual intercourse, or which advocate(s) or encourage(s) murder, ethnic intimidation, the use of illegal drugs or the excessive or illegal use of alcohol" to be affixed with a warning sticker that says: "WARNING: May contain explicit lyrics descriptive of or advocating one or more of the following: suicide, incest, bestiality, sadomasochism, sexual activity in a violent context, murder, morbid violence, illegal use of drugs or alcohol. PARENTAL ADVISORY."

The sticker must be affixed to the cardboard of the record jacket or plastic of the cassette—not to the shrink wrap. Any merchant who sells an unlabeled record ("Down by the River," perhaps, or "Mack the Knife," *West Side Story* or a Wagner opera) could be arrested, fined and jailed.

This legislation is not only bad law, it is genuinely un-American.

People of good conscience can sincerely disagree about the need for legislation to protect children from entertainment meant for adults, and people of good conscience can certainly debate how best to control pornography. But this legislation goes so far beyond the parameters of legitimate concern that it should be opposed by all honest citizens.

Under this law a merchant could be jailed for selling a copy of Frank Sinatra singing "I Get a Kick Out of You," or virtually any Beatles or Rolling Stones album, or a recording of Laurence Olivier performing *Hamlet*.

If the same law were applied to books, one could be arrested for selling almost any of the great novels of the twentieth century. If the same law were applied to movies and videos, many Disney cartoons could be indicted. If it were applied to plays, Broadway would go dark. Popular music has frequently been a magnet for attacks by forces too cowardly to attack literature, film or theater. There is in some quarters a sense that as popular music and the recording industry have less academic and political protection than other art forms, the recording industry is a safe target for opportunists and demagogues.

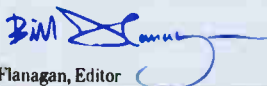
But certification by universities is not a prerequisite for freedom. And art should not depend on political contributions to insure its protection. All Americans, but especially the makers and buyers of sound recordings, should make clear to their elected representatives that they find laws such as the Gamble Amendment to be repugnant.

MUSICIAN magazine calls on the record companies to withhold all product from states passing such repressive laws until those laws are repealed. This is a drastic and expensive step, but it is the only way to protect the manufacturers and the merchants from endless and arbitrary prosecutions, and to alert the general public in those states to how badly their freedoms are being abused by their politicians.

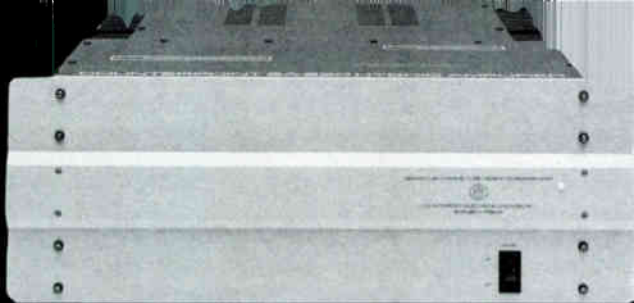
Such a boycott would be a terrible burden on record store merchants—but in the long run not so severe a burden as being arrested and jailed for selling a Beatles album.

All of us who are parents know how hard it is to instill strong moral values in our children. But we will not transfer our parental responsibilities to the state. Nor will we allow ourselves to be unfairly regulated by those who would take away our freedoms under the pretense of protecting us.

All decent Americans should oppose the Gamble Amendment.


Bill Flanagan, Editor


Gordon Baird, Publisher



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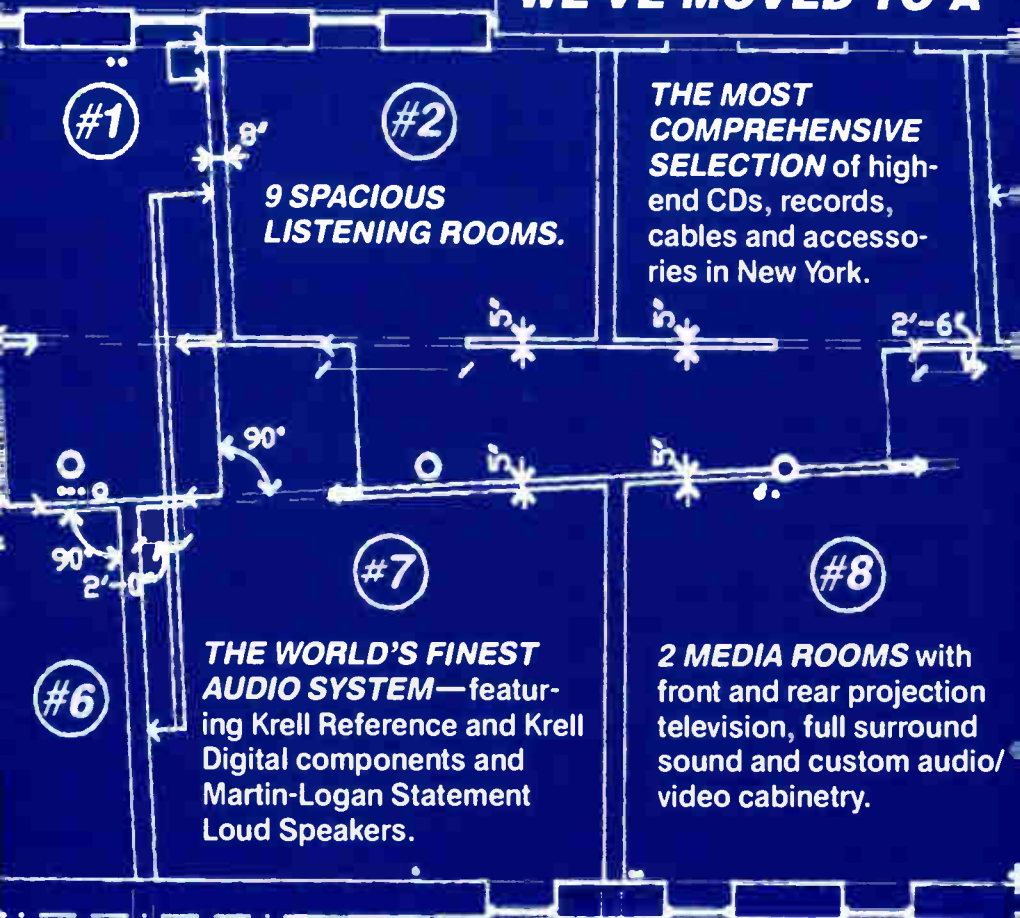
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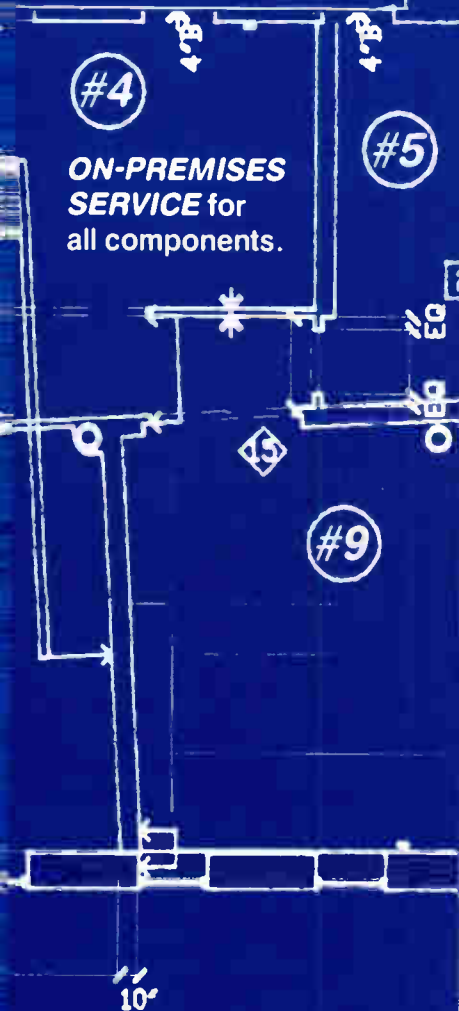


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THE AUDIO ANARCHIST

Sam Tellig

My friend Ben has the right idea. He's stopped hanging around with audiophiles.

The problem, according to Ben, is all those opinions. Views on this equipment, that equipment—often vehemently held. It can all get a little . . . well, suffocating.

I know what you mean, Ben.

Take my Spica Angelus speakers. (No, don't take them. I'm keeping them.)

When the august J. Gordon Holt heard I was using Angelus speakers, his reaction was, how could I stand listening to anything that so deviates from neutrality?

Huh?

I grant you, the tweeter can get a little peaky. But I've found a cure—OCOS speaker cable, from Sumiko. Otherwise, the Angelus is one of the most neutral speakers I know. It is notably free from that most irritating coloration of all—cabinet coloration, which usually manifests itself as a boomy, boxy quality on male voices.

I took criticism from Larry.

When LA visited my listening room and heard my Angeli, he noted a) that I was having problems with stability of imaging, and b) that the Spicas didn't have all that much bass.

Actually, I should be grateful. The speakers were too close to some record cabinets, and this messed up the imaging. The solution was to move the speakers further out into the room—actually about $\frac{1}{2}$ the way out into the room, and well away from the cabinets. Miraculously, the speakers now throw the soundstage all the way to the back wall and beyond.

But the bass—well, Lorenzo Archibaldo, I am just as happy there isn't all that much. Every bass-rich speaker I've heard has been so problematic that I would sooner not bother. Bass-rich usually becomes bass-overripe.

The Gindian—a shrink who reviews for another stereo rag—also has his opinion of the Angelus.

"I would say you are an audiophile in transition."

Meaning I should bite the bullet and buy speakers like his set of Infinity IRS Betas. The Gindian doesn't think I'm really serious about audiophilia. And he's right.

I remember that AHC suggested much the same thing when I once told him I was using a Quad 34 preamp and Quad 306 power amp.

"Quad . . . !" quaked Tony, aghast. It was as if I'd said Sanyo.

But, you know, the Quad 34 was—and is—one of the most listenable solid-state preamps around: very smooth, spacious, musical. I wonder if Tony had ever taken the time to listen.

The most flak I get is over my fondness for Shures.

You should've seen Dan D'Agostino when I told him I was using my new Krell KSP-7B preamp with a Shure Ultra 500.

"A Shure?"

"Sure, Dan, how will I know how swell the Krell KSP-7B really is unless I try it with a Shure cartridge?" I paused for effect and puffed up my chest. "My reference."

Dan just shrugged, and you probably will, too, but the Shure Ultra 500 in an SME 309 tonearm on an AR ES-1 'table into a KSP-7B preamp is a killer.

My otherwise amiable friend Steve likes to shovel you-know-what on the Shure. Steve is known in audiophile circles as "Mr. VTA" for his vaunted ability to set VTA on Versa Dynamics turntables.

"Boy, I'd love to have you set the VTA on my Shure," I told Steve, who almost dropped the van den Hul Grasshopper cartridge he was tweaking. Steve delivered this incredulous stare, as if across the airwaves, which said: shure-ly you are not serious. You are not a true audiophile. . . like me.

But hell, Steve, your friend and mine, Harvey Rosenberg, formerly of New York Audio Labs, is a great fan of the Shure. And you know, say what you will about Harve, he has a great set of ears.

Now I see that the Shure Ultra 500 is one of Trevor Butler's favorite cartridges. That's terrific. (He's a contributor to Britain's *Hi-Fi News & Record Review*.) It's particularly brave for a Brit to come out strong for a Shure. I tremble for you, Trevor.

Harvey also likes the Angelus, which means, as you might guess, my respect for my Rosenberg rose yet another notch. This is a guy who



Spica Angelus loudspeaker

has pattered around—I should say, Futtermanned around—for years modifying Quad speakers, old and new, and building OTL tube amps.

The other day, at Definitive Hi-Fi, I greeted the proprietor, Rudi Kothe.

"Hi, Rudolfo. How's the pair of Angeluses sounding?"

"Uh," groaned Rudi.

"Not as good as the WATTs/Puppies in the back room, heh? Or the Wilson WAMM?"

(inaudible grunt)

The problem was that the Angeluses—new to the store at the time—hadn't been set up with the same meticulous care as the Wilson Audio equipment in the back. Position these speakers at the wrong place in the room, use crummy cable, feed them a signal from a mediocre CD player or turntable, and you'll get mediocre sound. Treat them like a pair of Wilson WATTs and be surprised at what you get.

Lars got on Rudi's case about the Angeli—the

speaker positioning in particular. (Lars fancies himself an expert on that.) Sure enough, Lars was right (he occasionally is). The speakers snapped suddenly to life—soundstaging, focus, dynamics, everything.

Yustifiably yubilant, Lars yabbered, "When you get the speakers positioned at the right spot in the room, they disappear. And the two speakers work with one another to give you greater dynamics."

Lately Lars has been on Lou's case, too, about speaker cables. Naturally, he recommended his favorites—the new OCOS cables, from Sumiko.

"I've had very good results with them, too," I told Lou.

Poor Lou. He got his cables and phoned me the next day.

"It's a disaster—the sound is thick, ponderous, muddy."

"That's what you get for listening to Lars."

A few days later, though, Lou was all smiles when he talked about the OCOS cables. He reported that the sound with the OCOS was more focused than it had been with his previous cable.

"OCOS-focus, huh?"

I continued. "What I want to know, Lou, is whether the cables changed or *you* changed over the last few days."

Recently, Lars got on my case about digital processors, urging me to try Mike Moffat's new \$1995 Theta Basic. It would be almost as good as Lars's own Frankenstein—his super-kludge Moffat-modded Magnavox CDB650. (Of course, it wouldn't be *as* good.)

Well, Lars is right and the Theta Basic processor is very good. What is particularly striking is the spaciousness of the sound—lots of there and lots of air there.

Then I got the \$3200 Krell Digital 16X processor.

"Yumping Yimminy," I told Lars. "The Krell is more detailed than the Theta. More resolution."

But more clinical, perhaps, suggested Lars.

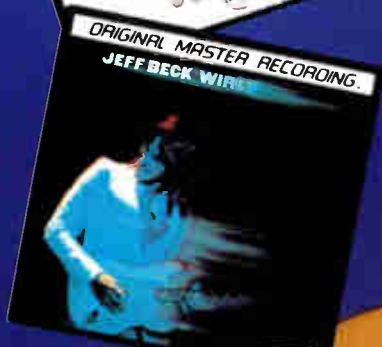
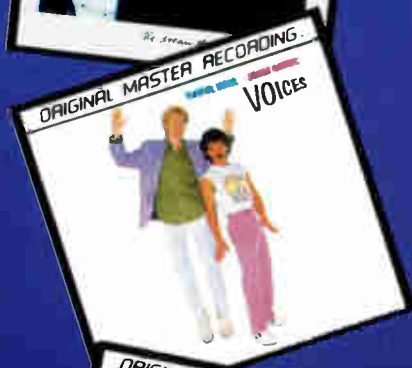
More revealing, more interesting, said I. Methinks the Theta tends to impose its own character on each disc—a seductive softness, a specious spaciousness, perhaps the product of Mr. Moffat's digital prestidigitation.

"Who wound you up today?"

"Look, Lars, I know the Theta Basic is a damned fine processor. There may be no better unit at the price, and I can hear why people like

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it. The sound is spacious and relaxed—very musical. But I happen to prefer the Krell, with its greater resolution.”

Lars almost insisted that I had to like the Theta more.

“Come on, Lars, this is why Ben hasn’t been around lately. All these opinions. *You* can like the Theta more, but that doesn’t mean *I* have to like the Theta more.”

See what I mean? It gets a little heavy. Egos get mixed up in all of this.

Lars is the expert on digital—Mike Moffat, in particular. Mario is the guru on speaker placement. When he enters a room, his first impulse is to move the speakers—you almost have to bolt them to the floor. Steve is Mr. VTA—never met a Versa he couldn’t be versatile with. I’m surrounded by experts. And expert opinions!

Who am I to say anything? I should at least purchase a Versa and a pair of Infinity IRS Betas or Wilson WATTs. . . *then* maybe my word would have some weight.

Lars catches a lot of flak, too—after all, the Swede has sworn off vinyl. What kind of audiophile can he be? The other day, poor Lars invited three of us over to hear his latest cable tweak, through his pride-and-yoy ESB speakers.

None of us was blown away.

In my opinion—which, of course, isn’t worth much—Lars had gone over the edge. At one point, some months ago, he had got his system to sound very, very good indeed—perhaps the best I have ever heard from digital. But not now. The “improvements” weren’t, and it showed in our faces.

Lars was devastated, didn’t want to talk with us for days. Still, he stoutly asserts that his system has never sounded better.

Meanwhile, Lars says he will no longer favor me with his opinions. “I’ll have to tone down my opinions. Or keep them to myself,” he said.

“That’s okay. I’ll know what your opinions are. You’ll tell Lou and he’ll tell me. Or maybe I’ll ask Yack English. Then I’ll disagree on Thursday night and get you all riled up, in spite and in sport—yust in yest.”

I turned to Lou. “Now he’s pissed off. One of these days I’m going to offend everyone with *my* opinions.”

Naim NAIT 2

You were expecting me to write about Krell, right?



Naim Nait 2 integrated amplifier

I thought the Anarchistic thing would be to write about the Naim NAIT 2 instead—a 15Wpc integrated amp from Britain that sells in the US for what appears to be a ridiculous \$795.

But is it really that ridiculous?

As usual, other audiophiles tried to tell me what to think. Or hear.

“Fifteen watts per channel for 800 bucks!” wailed my would-be Advisor, Wayne. “You could buy a B&K ST-140 amp and Pro 5 pre-amp for about the same price. 100Wpc.”

Yes, and if you bought the B&K combination, you would have B&K sound—which is quite good, actually. But if you buy the Naim NAIT 2, you will have, well . . . something that sounds a lot like a Krell.

You see, if there is one thing the Naim NAIT 2 reminds me of, it’s my Krell KSP-7B/KSA-80 combination.

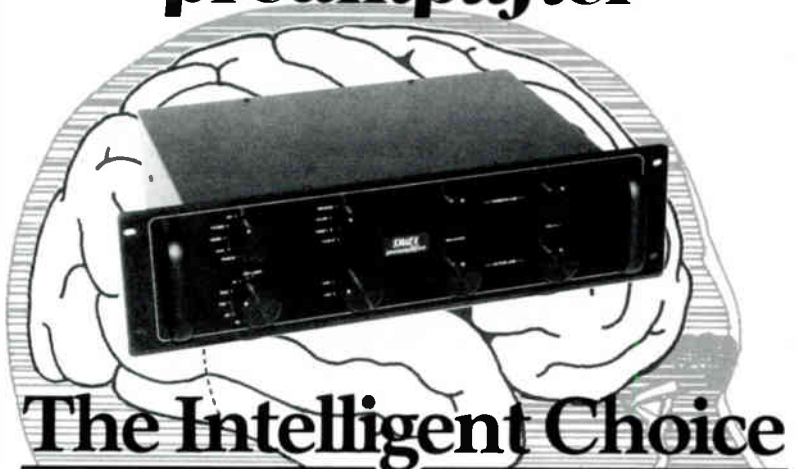
No, I have not gone totally off my rocker—my Swedish-made Stressless Chair, actually. There *is* a great deal of sonic similarity between the Naim NAIT 2 and the Krell gear.

Not really enough power for most applications, of course. The NAIT 2 cannot do justice to the Spica Angeli in my main listening room, for instance. Not enough oomph, kick, balls in the bass. Not enough Krell yuice, as Lars would say.

But put the Naim NAIT 2 on the Monitor Audio 7s (new pair—no rattle) in the living room and I had something quite remarkable indeed. The sound was sweet, smooth, spacious—above all, it was spacious.

According to Bob Harley, who reviewed and measured another sample of the NAIT 2, the line-amp section rolls off the high frequencies

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a touch, which makes CDs a tad more listener-friendly.

My cartridge is a Denon DL160 high-output moving-coil, not exactly a name Naim recommends, but what the hell, it sounds great. Rega RB300 arm (Naim would approve) on an AR turntable. Speaker cable is Naim Cable.

"Julian, how come this thing is only 15W? Or 18W, depending on what day someone asks you?" I asked Naim's Julian Vereker at the Chicago CES a few seasons ago.

"Well, we've tried making it more powerful," Julian jumped in. "When I was away on holiday, some of our people cooked up a more powerful version and presented it to me on my return."

"And?"

"It sounded awful."

I think the trick is this. It's quite easy to make a reasonably priced solid-state amplifier and have it sound super *provided* you make it low power. Remember the 15Wpc Advent 300 receiver of about 15 years ago? Same thing with the Naim. It's a profoundly anarchistic, almost subversive product.

Is it a ripoff? I asked my buddy Roy Hall, who rued the fact I wasn't getting on about an Onix or a Creek. But since Roy is a buddy, that might appear to be doing a friend a favor.

"Why does the Naim NAIT 2 sound so good?"

Roy paused.

"I think it's because there are no integrated circuits, and Naim very carefully tests all the parts. Plus they listen to each unit before it leaves the factory. Simple stuff like that."

"But surely there has to be more, Roy. This thing sounds insanely great. Like a 15Wpc Krell integrated amplifier. . . if D'Agostino dared to think small."

"You know what-tit is?" Roy said in his thickest Glaswegian. "The man is a bloody genius."

I told Lars about the Naim NAIT.

"You see, you could have one of these and a pair of Monitor Audio 7s, for instance, and forget all the hassle of hi-fi."

"This Yulius Vereker must be quite a guy."

"Yulian Vereker," I corrected Lars.

So that's what you're paying for—design genius (or yenius, as Lars would say)—and if the price seems a bit steep, look at what Lars and others are paying for interconnects these days. Who's to say the Naim NAIT 2 is overpriced—especially as I can't naim—oops, name

—a better-sounding integrated amp at the price.

It is underpowered, though. So be sure you use small, reasonably efficient speakers, preferably in a small room. If you can live with the low power, and especially if you want to forget all this audiophilia nonsense and just listen to music, you may find that the NAIT is neat.

Spica Angelus

One thing's obvious about the Angeli—these are incredibly fussy speakers to place. It's not just a matter of getting them more or less at the right place in a room. You have to get them right by a matter of inches—in order to get the amazing holographic effect and extraordinarily precise imaging. Worth the sweat, though.

In my case, I set up the speakers on the short wall of my listening room, and then moved them further and further out, until they are about a third of the way out in the room. This brings my listening position to within 3' of my back wall—a little awkward, perhaps, but worth it for the sound. My thanks to Mario, the speaker-moving maven. (What's the Italian for "maven"?)

You see the difficulty with these speakers? They are extraordinarily critical—of source material, electronics, room placement, cables and interconnects. It takes a dedicated dealer and a dedicated listener (and undoubtedly a dedicated room) to get these speakers sounding their best.

These speakers can probably best be heard at a dealer's in a locale like Alabama, Arkansas, or Maine—you know, someplace where people would rather work to make these speakers sound good than throw a lot of money into their hi-fi in order to impress their friends and build their egos. . . . someplace like metropolitan New York, where Infinity IRS Betas are big.

Armor All Update

Armor All Protectant, as I mentioned in my original report (February '89), can leave a dusty film on the disc. You should wipe off this film before each play. One reader has raised the question of whether this dusty film can fog the laser lens. Probably not, if you wipe the disc off first. If you use Armor All, be sure to wipe the disc before each play. And don't leave a disc in your player. (Here we go again: To remove Armor All from a disc, Dawn Dishwashing Detergent has been suggested.)

“The M-200 power amplifier is a smashing success by any standard, and an absolute steal at the price.”

**Kent Bransford
Hi-Fi Heretic, Autumn 1989**

Highlights of the review:

Over the years, B & K Components, Ltd. has become one of America's leading manufacturers of affordable, high-quality audio electronics. B & K has done an admirable job of providing musical, reliable preamplifiers and power amplifiers within the budget of virtually any music lover.

“I was floored by the M-200's sense of pace and drive.”

Impressed as I am by the MC-101, I find the Sonata M-200 monoblock power amplifiers on test here even more remarkable. The M-200 is John Beyer's effort to build a power amp that can drive virtually any loudspeaker load in existence. Rated at 200 watts into 8 ohms and 400 watts into 4 ohms, the M-200 can drive loads as low as .75 ohms and still pump out its rated 200 watts! Rated peak current output of the M-200 is an incredible 150 amperes. This might come in handy should you need to jump-start your Peterbilt on a frosty morning.

Internal construction is most impressive, with a massive, shielded toroidal transformer centrally sited within the steel chassis. Four filter capacitors, each roughly the size of the oil filter on my Honda, combine to offer nearly 70,000 mfd of storage capacitance. The input and driver circuits are carried on a single glassfibre board that sits

atop the power supply caps. A plastic panel bearing a silkscreened schematic of the amp covers this board. As with B & K's other power amps, the M-200 utilizes MOSFET output transistors. In keeping with the M-200's beefy design, no less than twenty of these devices are fastened to the amp's external heatsink. Quality (Corn-ing or Dale) 1% metal film resistors and premium film caps are used throughout the active circuitry. A gold-plated premium input jack is included, with gold-plated five-way binding posts handling speaker cable connection.

A good power amplifier will let you appreciate the rhythmic drive of Tommy Shannon's bass guitar, but it takes an outstanding amp to make the pitch of the instrument clear. The M-200 is such an amp.

“I was bowled over by its combination of smoothness (a B & K hallmark) and detail.”

All too often extremely powerful amps excel on bombastic symphony works, but fall down when it comes to conveying the subtlety and nuance of “smaller” music. The M-200 proved to be a glorious exception. Yes, the massed brass and great whomping bass drum shots in “Uranus, the Magician” were appropriately startling, but equally satisfying were the quiet flute and

violin passages that weave through this performance. Delicate instrumental shadings and nuances that are so important in communicating the emotion of the music were never glossed over or homogenized. The M-200 had that essential ability to draw me further and further into the music, rather than hurling it in my face. Equally impressive was the M-200's soundstage width and depth, as the size and power of the orchestra were communicated to great effect.

The M-200 was superb in its capacity to capture the (real and artificial) reverb on this track [Iggy Pop's *New Values*], helping to convincingly communicate the mood and tension of the composition. Pop's vocals were rich and resonant, while the synthesizer lacked the slightly harsh, piercing character imparted it by lesser-quality amps.

Obviously, I was extremely impressed by the B & K M-200. While offering the tonal naturalness that characterizes all B & K products, the M-200 goes far beyond previous B & K amps in its outstanding bass quickness and definition, as well as its excellent retrieval of low-level detail and recording acoustic. There is a fundamental quickness and alacrity to the M-200 that makes music more immediate, more compelling.

John Beyer tells me one of his competitors pays three times as much as B & K for the same Noble volume pot. These additional costs are passed on to the consumer in the form of higher retail prices. Of course, those small-volume manufacturers committed to meeting a specific price point may have to employ inferior-quality parts to stay within budget; their inability to make large parts purchases means they may actually pay more for parts inferior to those used by high-volume manufacturers like B & K, Vandersteen, etc.

B & K has undertaken the ... daunting task of manufacturing and marketing affordable equipment in numbers sufficient to ensure a reasonable return on invest-

ment. B & K's profit per unit may be modest compared to that of the typical "High End" component, but the company has achieved unit sales (and consequent profits) that are quite astounding for a specialist manufacturer. Equally impressive is the fact that Beyer hasn't compromised his products' integrity to achieve commercial success.

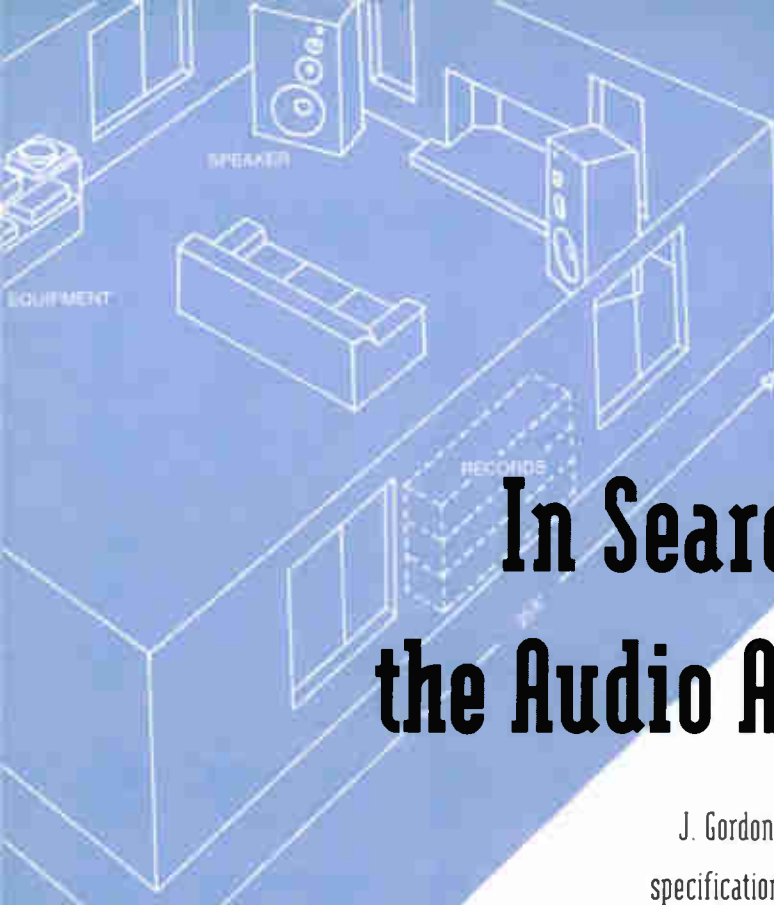


The above is a roundabout way of explaining the significance of B & K's new Sonata series. Beyer has now committed B & K's manufacturing efficiency and economies of scale to producing audio components that challenge the best "High End" marques.

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In Search of the Audio Abode

J. Gordon Holt outlines the
specifications for the perfect
listening room

When sociologists tell us America is a highly mobile society, they don't just mean we do a lot of driving. What they mean is, we do a lot of moving. The good old three-generation family homestead, immortalized in nostalgia TV and literature, is a thing of the past. According to census information, almost 20% of America's population changes its address every year. Of course, it's usually a different 20% every year, but pulling up roots and moving—to a bigger house, a better neighborhood or a nicer city, not to mention a place where your employer decides to transfer you—is almost as commonplace across the US of A as marriage, divorce, and unbridled greed.

Most of us don't particularly enjoy moving. It's disruptive, nerve-wracking, and—no mat-

ter how "full-service" the moving company—physically exhausting. But, for the serious (read: manic) audiophile, relocating to a new home offers a side benefit denied ordinary folk: It's a golden opportunity to acquire a listening room that's a sonic asset rather than a liability.

Acoustically speaking, most audiophile listening rooms are abominable. This is because they were designed to be living rooms or bedrooms or family rooms or recreation rooms—*any* kind of rooms except listening rooms. Often of asymmetrical shape, they tend to have doorways where the speakers should be, windows where sound absorption is required, flexible walls that leak low bass to other rooms or to the great outdoors, dimensions that mess up the frequency response, and inadequate AC service. Yet most audiophiles, including serious

high-end types, are blissfully complacent about their listening room. Because it "came with the house," there's a tendency to feel one is stuck with it, and that if it isn't up to snuff, there isn't much that can be done about it except for a certain amount of band-aiding with absorptive or diffractive wall treatments.

Moving to a new house is the time to start thinking seriously about your listening room, because the move can give you a clean slate, a new start, a new lease on your audio life, a chance to begin again your quest for the Holy Grail of perfect sound without the starting handicap of a lousy room. Here's a rundown of what to look for and what, in particular, to avoid, in order of importance.

Privacy

If your listening room is subject to the constant intrusions of barking dogs, lawnmowers, rapid-transit buses, sirens, chain saws, jet planes, freight trains, and other people's stereos, you might just as well forget all about retrieval of low-level information from recordings. Obviously, if you're foolish enough to buy a house right under the approach path of O'Hare International Airport or next door to a sawmill, you'll deserve what you get. Almost as bad is a location within a half mile of a busy highway, particularly if it's a sloping-grade truck route or has a traffic light on it. (All vehicles make much more noise starting than driving.) But even if you avoid the obvious mistakes, there are things to look out for. Neighbors, for instance.

Neighbors are nice, up to a point. Socially, they can be charming, polite, friendly people. Privately, they are loutish, insensitive, inconsiderate sonsofbitches. All of them own dogs that bark incessantly, they're into heavy metal played at overload levels outdoors on a boombox, and they have an abiding hatred for any music written prior to or later than their ill-spent youth. They do not understand or appreciate audio, and cannot conceive of how you could listen to that kind of music that loudly and then complain about *their* noise.

If you can hear your neighbors, and they can hear your system, you are almost guaranteed an ongoing series of hassles that will not be resolved until you choose between headphones or homicide. Supposedly, what you do in the privacy of your home is your business, but that is true only as long as what you do there stays there. If you insist on listening with the win-

dows open in nice weather, the noise you make will not stay in your home, and your neighbors' noises won't stay out. In this case, it will cost you a lot for your privacy, because the only thing that will buy it is distance.

Outdoors, sounds travel in all directions away from their source, like the skin of an expanding balloon. And, just as the wall of a balloon becomes thinner as it expands, the wavefront of a sound becomes weaker as it travels away from its source. Eventually a balloon will burst, but soundwaves just continue to expand until they dissipate into nothingness. This attrition occurs at a predictable rate: The sounds become $\frac{1}{4}$ as strong—that is, their level diminishes by 12dB—every time they double their distance from the source (fig.1).

If the sound-pressure level (spl) 10' outside your open window is 90dB, it will be 78dB at 20', 66dB at 40', and 54dB at 80' away. Now, an spl of 54dB is about the background level of an expensive restaurant (without music). This isn't all that loud, but a neighbor 80' from your open window will still hear your music quite loudly enough to know that he hates what you're listening to. You, on the other hand, will hear his lawnmower, his outdoor music, and his barking dog loudly enough to give serious competition to any musical pianissimo, let alone those subtle ambience cues and overtones. 80' of distance just ain't enough.

Just how much sound isolation *do* you need? The purist view might be that you can't have too much, but this doesn't mean you can't have more than you need or might care to pay for. An spl of 10dB—about the loudness of leaves rustling in a very gentle breeze—is also barely above the level where you hear the sounds of your own clothing rustling, the blood pulsing through your temporal arteries, and the motor drive in your CD player. As a background level for a listening room, it is overkill, but its major

Neighbors are loutish,
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Other manufacturers rely upon a closed feedback loop to correct distortion and establish acceptable specifications. The engineers at Bryston have focused on creating an almost linear or distortion-free signal across all amplification levels.

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Fig. 1: The effects of outdoor distance on sound-level attenuation and background spl, for a 90dB source. The figures are approximate, depending on topology and ground cover.

drawback is its impracticality. To reduce 90dB to 10dB would require about 1000' of outdoor distance from your open window to your property line. If the window is in the middle of a square plot of ground, that plot would have to be almost 92 acres in size. Try and find *that* in suburbia, let alone urbia!

For a 20dB noise level at the property line—the loudness of a whisper heard from 5'—your plot can be a more modest 40 acres in size. Are you starting to get the point? Unless you live on a country estate (or farm), open-window listening is just not very practical.

Note that the preceding figures are theoretical, hence approximate. The calculations are pretty accurate for a point source radiating into an open space, but actual sound attenuation with distance can vary by as much as 10dB depending on the lay of the land, its ground cover, and the facing direction of your window(s). For example, if you're near a hilltop and your window faces your neighbor's window on the next hilltop, sound attenuation will be much less than calculated. If your neighbor's house is below yours on the same hill, and his windows face the same direction as yours (that is, away from the source of your noise), and there is a stand of trees between you, attenuation will be substantially greater—by as much as 15dB or so. But we're still talking *large* plots of real estate. The sensible alternative is to listen with your windows closed.

A single pane of glass bestows almost 25dB of sound attenuation, while a second pane will add about 20 more. Together, they will give you about as much noise reduction as 130' of outdoor distance, before your racket has even left the house. Then, a mere 34' of distance will attenuate outgoing and incoming noise by an additional 20dB, reducing your original 90dB

to a neighbor's 25dB. That "impractical" 10dB background is easily achievable, with only 75' of distance, on a half-acre lot.

Closed-window listening is clearly the best solution to the privacy problem, for people who can't afford a rural estate.

Dimensional ratios

In any enclosed space, soundwaves will bounce back and forth several times between opposite room boundaries before dying out. At most frequencies, the decay is rapid, but when a sound's wavelength is precisely twice that of a room dimension, something interesting happens: Compressions and rarefactions occur simultaneously at opposite boundary surfaces, reinforcing the wave from both directions and creating a resonant condition. This is called a standing wave, because the zones of compression and rarefaction in the room are stationary during the resonant period. (Of course, the soundwaves themselves aren't stationary: they are continually bouncing back and forth between opposite walls.) (fig.2)

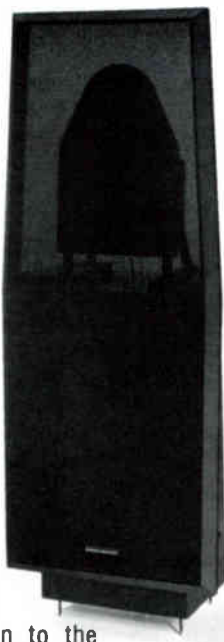
A single pane of glass bestows almost 25dB of sound attenuation, while a second pane will add about 20 more.

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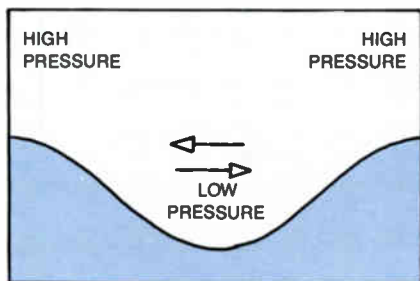


Fig. 2: A standing wave between two wall boundaries. The reflecting soundwaves reinforce one another at the boundaries and produce a pressure dip in the middle of the room. Both effects are minimized by placing the loudspeakers and the listening seat at intervals of $\frac{1}{3}$ of their room dimension.

Like most other resonant conditions, standing waves produce a fundamental tone (the lowest-frequency resonance the space will support) and a series of harmonics at one-octave intervals. If the fundamental is at 20Hz, there will be other, progressively weaker ones at 40, 60, 80, 100, 120, 160Hz, and so on. Each of these harmonics causes a frequency-response peak in the room, with a dip midway between each adjacent pair. Fig. 3A shows the effect on an otherwise flat response of the fundamental and first four harmonics of the 20Hz standing wave.

Because a rectangular room has three dimensions (length, width, and height), it will exhibit three sets of standing waves. And if any two sets of these occur at the same frequencies, they will reinforce one another and exacerbate the room's frequency-response irregularities (fig. 3B). The worst case is when all three room dimensions are the same, at which time the lower-range resonances can become severe enough to cause pronounced hangover at those frequencies.

Since we can't get rid of the resonances (although some strategically placed ASC Tube Traps will help matters greatly), the next best thing is to stagger the resonant frequencies so that the response irregularities are as widely and as regularly spaced as possible. We do this by the proper choice of room dimensions.¹

Since we are working with three of these—length, width, and height—we have three fre-

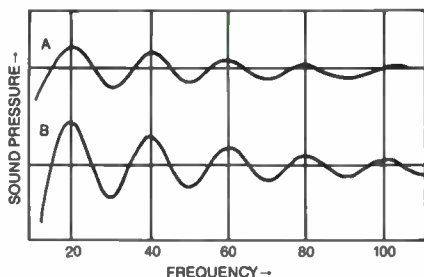


Fig. 3: A (above): The standing-wave resonances from a 20Hz tone in a 27.5' room. B (below): The effect of two such resonances in a square room.

quencies to place within each octave. This means the intervals between them should, ideally, be $\frac{1}{3}$ rd-octaves. Thus, the second-largest room dimension should be 1.25 times the smallest, and the largest dimension should be 1.6 times the smallest. Fig. 4 shows what this accomplishes.

Most residences have 8' ceilings, so if we are to end up with the proper $\frac{1}{3}$ -octave standing-wave distribution, the width and length must be based on that 8' height. Here's what that gives us: For width, $8 \times 1.25 = 10'$. For length, $8 \times 1.6 = 12.8'$. A nice, compact little room—which, unfortunately, won't support deep bass worth a damn!

Size

Here's another reason perfectionist audio can be very pricey: Low bass requires a large listen-

¹ Even when you have an optimally dimensioned room, successfully positioning two loudspeakers in a room is a large enough subject for a complete article. But as a rough rule, using the two loudspeakers to divide each room dimension into thirds excites low-frequency standing waves to the smallest extent and is therefore a good starting point. Quad's Peter Walker once told me that the best place to position a pair of loudspeakers was one-third of the way out into the room along each of the two diagonals, something confirmed by two software packages that I recently examined. The first is a service supplied by Snell dealers to owners of Snell loudspeakers free of charge. The customer supplies his room dimensions and the program indicates the best, good, and worst positions in the room. In Tom Norton's interview with Snell's Kevin Voecks last month, it was mentioned that non-Snell owners might also be able to use this service. Write to Snell Acoustics, 143 Essex Street, Haverhill, MA 01830, for further details.

The second piece of software, an update of his LMP program, was written by Ralph Gonzalez of Delaware Acoustics for Sitting Duck Software. The user enters one room dimension at a time and a plot shows how strongly each of the main standing-wave modes will be excited at each point along that dimension. You choose a speaker position where as many of the standing waves as possible are close to the 0dB line, then move on to the second room dimension. For more details on this useful program, write to Delaware Acoustics, P.O. Box 54, Newark, DE 19810. —JA



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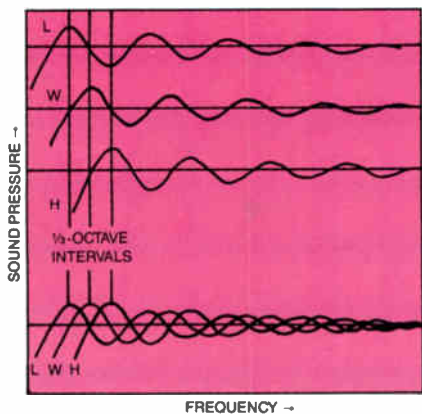


Fig. 4: (above): The standing-wave series for the dimensions of an ideally proportioned listening room. (below): The sound-pressure frequency response of a room having these dimensional ratios.

ing room, and you don't often find large rooms in \$125,000 houses these days.

When a sound is pitched below the lowest standing-wave frequency in the room, compression waves traveling in one direction are partially canceled by rarefactions traveling in the opposite direction, diminishing the strength of both. This happens to some extent at all other frequencies except those involved in standing-wave activity, but when the room dimension is able to support several waves in a row, the cancellations are of short duration and occur randomly in different places in the room. When only a fraction of the wave can be accommodated, though, bass performance is seriously impaired throughout the entire room.

The pertinent figures here are easy to predict by means of the number 550, which is half the speed of sound at sea level (in feet per second), as well as half the distance traveled by a sound-wave in one second. Dividing this figure by any room dimension gives the center frequency of that dimension's lowest-frequency standing wave. On the other hand, dividing 550 by any bass frequency will give the room dimension needed to fully support it.

Dividing 20Hz into 550 will show that opposite walls must be 27.5' apart to fully support that frequency. Dividing 12.8 into 550 will show that the longest dimension of our "nice, compact little listening room" will support

43Hz—okay for your average British speaker system, but a shameful waste for Infinity bass towers.

Suppose you want to go for a conservative 35Hz low-end limit? 550 divided by 35 is 15.7'—not at all unusual for a room in an average house. But... this is almost twice the height of the average ceiling, and that's bad news. The room will have the same standing waves in two directions. But all is not lost, because those ideal dimensional ratios are just that: ideal. Any one of them can be halved or doubled without changing their 1/2-octave relationship, and without seriously impairing the smoothness of the room's bass response.

Doubling the length dimension, to 25.6', would extend the room's response to an impressive 21.5Hz, but would make for a very narrow room, more like a wide corridor than a room. But doubling the 10' dimension would provide a more reasonable shape (20' by 12.8') and still give flat response down to 27Hz. Of course, you can always go for broke, doubling both the original dimensions to give a 20' by 26' space with a 21.5Hz lower limit. But you aren't likely to find a room like that in a 3-bedroom ranch home. On the other hand, you may get lucky.

Generally, flat ceilings of 9' or more will be found only in residences more than 50 years old or in very expensive newer homes, and the extra foot or so will make relatively little difference in a properly proportioned room's low-end limit anyway. But so-called open or vaulted ceilings, which are enjoying a vogue these days in "contemporary" homes, are a special case calling for special attention. Because they are of indefinite height and their undersides are not parallel to the floor, they generate less-pronounced standing waves than a flat ceiling. Their worst liability is that they tend to produce lots of quick-return echoes that smear detail. These are easily suppressed with strategically placed panels of decorative-surface fiberglass on the underside of the roof. Otherwise, a vaulted ceiling can be considered as a flat ceiling whose height is the *average* of the ceiling height. That is, if the walls are 8' high and the peak of the ceiling is 14', it can be viewed as an 11-footer for purposes of calculating the other dimensions.

Shape

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soundstaging, your loudspeakers must “see” a symmetrical room, and your listening seat must be symmetrical to your loudspeakers. And symmetry here refers to acoustical reflectivity as well as to dimensioning. The room cannot have a quaint little alcove to the left of where you plan to put the speakers, or picture windows on one side with bookshelves along the other. House buyers tend to be attracted by such things for visually aesthetic reasons, but they are the major cause of image biasing—a tendency for all program material to “pull” toward the left or right when the balance control is centered. The control can center the image, but it will need readjusting for different programs, and the system will never deliver imaging specificity that is any better than vague. (A mono signal source is an ideal test for imaging specificity. The “image” should be extremely narrow, and remain motionless at all times.)

With a two-channel system, acoustical symmetry is of much less importance behind the listening seat, because the differing patterns of reflections will be beyond your angular range of directional acuity. You can have a bare wall at the left rear and floor-to-ceiling drapes at right rear without undue effect on imaging or balance, but it’s still best to try and avoid large surface areas of right/left asymmetry. And it is *necessary* to avoid these if your system is outfitted for surround sound.

All accesses to the room should be on mid-walls rather than near the room corners. Most bass-energy buildup due to standing waves concentrates in the corners, and substantial leakage from any one will cause loss of bass. And if you plan to use Tube Traps for controlling standing waves (which I most highly recommend), you’ll need unbroken corners for these, because that’s where they work most efficiently. A midwall access need not be closeable if it is small relative to the length of its wall, but if it is wider than one third of its total wall length, it should have heavy sliding or folding doors, and these should be kept closed for serious listening.

If there is a fireplace, it should be in the middle of its wall, so that if that wall turns out to be the best one to have the speakers backing against, the fireplace can be between them. (Watch the distance, though; too close and you’ll fry the backs of the enclosures or, worse, set the rear fabric grille on fire.) You can expect

to get a mild cavity resonance from the fireplace opening, which can be suppressed with large blocks of fiberglass when the fireplace isn’t in use. (Fireplace-stuffing blocks can be made from several layers of 4” fiberglass with fabric covers, like large sofa cushions. An earth-tone fabric will work better, design-wise, than a Paisley.) When the fireplace *is* in use, you must learn to be tolerant of imperfection.

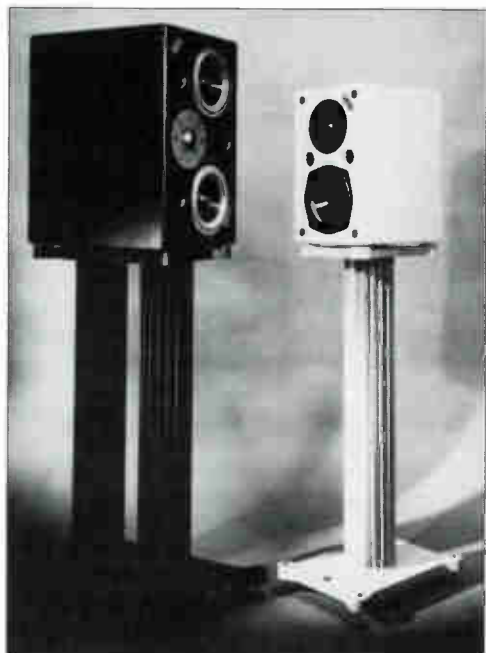
Window asymmetry will be a problem if the room isn’t a wing, and there may be conflicts of exterior view *vs* interior light *vs* acoustical symmetry. If the windows are in the wrong places, they should be as small as possible. Picture windows and floor-to-ceiling sliding doors may look lovely, but they’re as reflective as anything you can get, and at least some of them will probably need to be covered with heavy pull drapes while you’re listening. So much for that fabulous view of the mountains! Another alternative is free-standing fiberglass panels, which can be kept in a closet when not in use, and laid up against the walls when you are, but you can expect some flak from the lady of the house about this. It has very low WAF (Wife-Acceptance Factor). Maybe you can persuade her to listen with her eyes shut.

L-shaped rooms make almost classically bad listening spaces, because they add another set of standing waves to the equation, and produce a very asymmetrical soundfield. Don’t dismiss them on sight, though, because if their dimensions allow it, you can always partition-off one leg of the L.

Weird shapes

Although there would seem to be compelling reasons for listening in a room having no parallel surfaces, the fact is that they just don’t work very well. Acoustical spaces with converging walls, a sloping ceiling, and perhaps a curved rear wall are ideal as performing halls, because they tend to have fewer “dead spots” than rectangular halls. Many well-heeled audi-

L-shaped rooms make almost classically bad listening spaces.



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ophiles, bent on building the perfect listening room, have made the mistake of assuming that what works in a 60,000ft³ space will work in a 600ft³ one. It won't. An auditorium is so much larger in every dimension than the lowest audio frequency that standing waves are virtually out of the question. And the multiple reflections are so randomized by the time they reach the listening seats that they have no effect on the perceived frequency response.

While the traditional rectangular listening room might seem very boring by contemporary architectural design standards, it is this very simplicity of shape that makes its acoustical properties so eminently predictable. While this predictability is certainly no guarantee that you can just stick a pair of loudspeakers anywhere in the ideal room and get superb sound, it *will* guarantee that any system can be *made* to work at its best in that room, given adequate speaker-placement experimentation and proper treatment for wall reflections. But the pattern of reflections in a room with non-parallel surfaces is so formidably complex that putting a system in it will be a game of audio roulette, with the stakes being the money you paid for the equipment and the house. It *could* work out fine, but considering the almost limitless possibilities for disaster, the chances of success are slim.

If the floor plan is rectangular and the ceiling slopes, treat the latter like a vaulted ceiling, using its average height for your dimensional-ratio calculations. The slope should, however, be in the direction you'll prefer to face when listening, otherwise you'll have a reflective asymmetry that will cause left or right image biasing. (The only solution then will be to cover the entire ceiling area with absorptive material.)

So-called "open" house designs, with few interior dividing walls, may look nice and airy spacious, but they're terrible for audio, because the relative lack of boundary spaces acts much like the classically horrible L-shaped room. It may work out, but again, because the results are completely unpredictable, the chances of it doing so are very poor. The most usual audio casualty of open designs is bass performance, which will be thin in your listening room and superb when heard from another room.

Construction

Low frequencies—the reason you might opt for the big Duntechs instead of Celestion 700s—

must be confined to the listening area if you want to hear them properly. And large doorways (or the lack of interior walls) are not their only escape route. Bass is surprisingly powerful, which is why it takes a lot of power and a large radiating area to reproduce it. This is also why it is easily lost through the room boundaries if these are not extremely rigid.

If the boundary surfaces, including the floor and ceiling, are capable of flexing under pressure, the bass will flap them back and forth like drumheads and pass right on through them to the great outdoors (or to other rooms in the house). In other words, the ideal listening room should be made of masonry or concrete on all six sides. This will be the hardest of all listening-room requirements to meet, because there is absolutely no other reason except acoustics for building a room this way. As a matter of fact, finding such a room is so unlikely that it is impractical even to call it a requirement. Some compromises are almost inevitable here, particularly with the ceiling. Just remember, though, that the more of the boundary surface that is rigid, the better your low-bass performance will be.

The worst possible case is a ground-floor room in a frame house with a basement. All six boundaries will flex, and that fabulous bass will probably be almost as loud in the farthest bedroom as it is in the listening room.

If the house is of masonry, LF loss to the outdoors will be minimized, but its transmission through the house will still depend on how many shared (with the rest of the house) walls are of wood frame. Since all interior walls tend to be frame, the best you can hope for is one shared wall, as when the room is a wing with masonry on three sides.

Masonry homes are rare in many parts of the

The worst possible case is a ground-floor room in a frame house with a basement.

country, but basements usually aren't. As for those people who live in earthquake zones, where building codes prohibit both basements and unreinforced masonry in residential construction, I can only offer my sympathy and point out that you should expect to give up *something* in exchange for that heavenly climate. (And you may still be able to find a home that was built before those code restrictions went into effect.)

The basement alternative

A properly partitioned basement space can make an excellent listening room, if its dimen-

sions are such that three walls can be used as-is with the addition of only one partition. This still won't confine bass as well as six masonry boundaries, but it will be a lot better than six flapping wood-frame surfaces.

The problem with a basement space is, of course, the furnace, which is always in the basement when there *is* a basement. A furnace rumbles, sometimes quite loudly, and some gas-fired ones whistle too. And as soon as heat starts to circulate, there is the added noise of the air blower or water pumps. So for maximum rigidity and isolation from furnace noise, the listening-room partition should consist of

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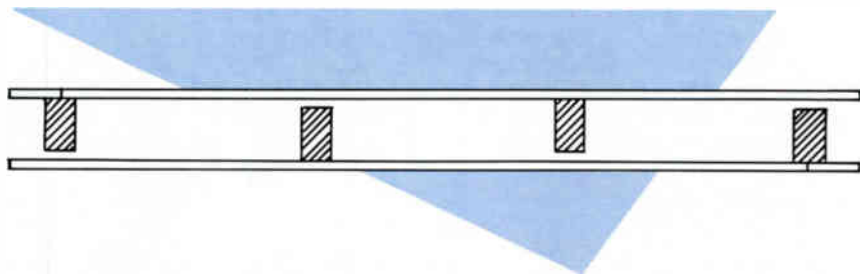


Fig. 5: Top view of a partitioning wall with high sound-attenuation characteristics.

two layers of sheetrock, hung on two rows of staggered 2-by-4 studs with the intervening space stuffed with fiberglass (fig. 5). If noise is still a problem despite the partition, it may be necessary to separately enclose the furnace, too. The walls of this enclosure should be at least 20" from the sides of the furnace all the way around, extend from floor to ceiling, and have a fairly heavy 2'-wide door, at least as wide as the furnace unit, giving access to the front of it. And because a lot of sound can pass through a tiny space, all openings should be sealed, as should the perimeter of the door. Naturally, this will create a new problem: It will cut off the furnace's air supply, causing poor combustion which will generate lots of poisonous carbon monoxide, and it will prevent the chimney from efficiently venting the deadly gas. Some older forced-air heating systems don't even have a main return for the circulated air, relying instead on leakage under the basement door to get the circulating air back to the furnace. In either case, it will be necessary for you to open some sort of large air path between the top of the baffle and the floor above it.

This could be as simple as putting a large (maybe 6" by 20") rectangular hole in the ceiling above the furnace enclosure and covering it with a grille—if you don't mind letting all that blower noise into the floor above. If you do, find a spatially central place on the upper floor, some distance from the furnace, install the return grille there, and run ductwork back to the furnace enclosure.

If the basement is already finished when you buy the house, be prepared to unfinish it and do it all over again. Retrofitted basement partitions are purely cosmetic and are usually made of the cheapest materials obtainable. The typical wallboard is only slightly more substan-

tial than corrugated cardboard, and will both flap and rattle, and the framing too will probably be minimally rigid. If you want finished exterior walls, use furring strips with sheetrock over them. Each exterior-wall sheet should have two additional support strips between its sides, irregularly spaced to stagger any flexing resonances. And if you plan to finish the ceiling for a decent appearance, do *not* use conventional ceiling tiles, as these will both lower the effective ceiling height and tend to flap in the breeze when you're reproducing bass. Install the framework for a drop ceiling, stuff the spaces between the joists with fiberglass (with the fibers exposed), and use light wooden frames covered with a neutral-colored fabric (such as beige or white "monk's cloth") as the drop-in ceiling "panels."

If the house is large and fortune shines upon you, you may find that it already has a masonry partition separating the furnace space from your proposed listening area. But if it doesn't, you should think twice before adding one yourself. An 8' wall of bricks or cinderblocks is extremely heavy, and will almost certainly crack the basement's poured-concrete floor if it isn't built on a proper footing. For details about this, consult a building contractor, but bear in mind that, if you should ever try to sell the house, a buyer who does *not* want his basement divided according to sound acoustical principles will look more kindly on the prospect of ripping out a wood-framed partition than a masonry one. But then, maybe you can convince him that it is the very height of trendiness to own a state-of-the-art "media room."

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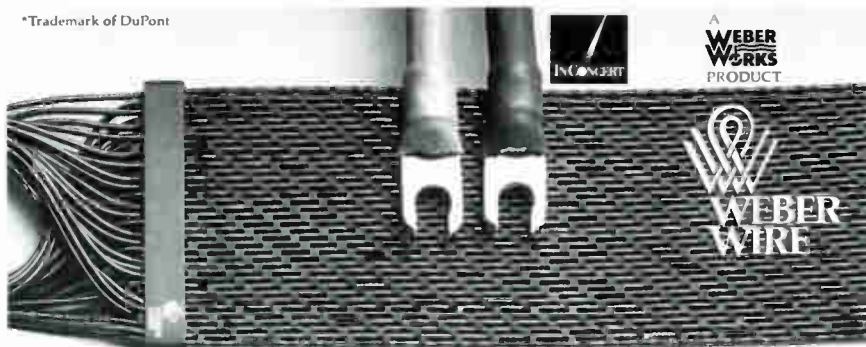
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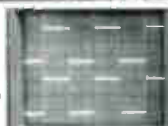


Fig. 1
Transmission characteristics for 15 ft. of WeberWire—1 Ω source, 8 Ω resistive load—communicating a 100 kHz square wave. The upper limit of WeberWire is just beginning to be observed as the extremely high harmonics of the

overshoot from the signal generator (upper trace) are noticeably reduced. Nevertheless, the bandwidth of WeberWire permits the wave itself to be reproduced without tilt or other anomaly.

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choice is hot water or electric baseboard, simply because they are the quietest when you need to operate them. But if circumstances dictate that you keep the windows shut in summer, or you just want to be more comfortable during the dog days, you'll need a climate-control system that can both cool and warm the room. And that means a forced-air system.

A central air system can deliver heated, cooled, and humidity-controlled air at the flip of a thermostat, but it can be a rather noisy delivery. Most of the noise occurs right at the duct outlets, as a result of wind turbulence, and enlarging the outlets in the listening room (fig.6) can reduce wind noise from that source by about half simply by cutting down on the exit velocity. But there is little that can be done if the main circulating fan happens to be right under your listening seat. Check this out before you buy, by turning on the heater, waiting until the blower comes on, and making a judgment as to whether you think you'll be able to stand the noise while listening.

Air conditioning can be retrofitted to most forced-air heating systems for under \$1000. A wall- or window-type conditioner in the listening room is *not* a sensible alternative, though, because it's just too noisy. Yes, you can always cool the room off first, then shut the unit off and listen until your butt starts sticking to the sofa, at which time you can punch up the ol' AC again for another cooling stint. But this isn't a very convenient way to go.

On the other hand, you *could* add a dedicated cooling and ducting system to the listening room, for about the price of a halfway-decent power amplifier. To do this right, the unit should be located far enough from the listening room that its noise is below your background limit, and connected *in both directions* to the room by ductwork. Standard-sized vents will be adequate here because the dedicated unit, which needs only the capacity to serve a single room, will not have as great an air-volume delivery as a central unit. But you still may want to add a baffle farm (fig.7) at some point along the delivery duct to cut down on fan noise.

Seaworthiness

It should go without saying that your listening room should not fill up with water from time to time, but this exigency is frequently overlooked by the househunter who has discovered what appears to be The Perfect Listening

Space in the basement.

The lowest level of any home that is not at the very top of a high hill is at some risk of flooding. This may not have happened for the last 20 years, but if you put \$30,000 worth of audio components on the floor in it and fail to take out adequate insurance on it, that basement will almost certainly flood again within 2 years after you move in.

A homeowner's insurance policy will often reimburse you (minus your deductible) for losses due to water damage, but not always, and usually not enough. Damage due to flooding may only be covered if you have specific flood coverage, and since the maximum allowance for unspecified "personal possessions" may only be \$10,000 or so, it is prudent to make sure

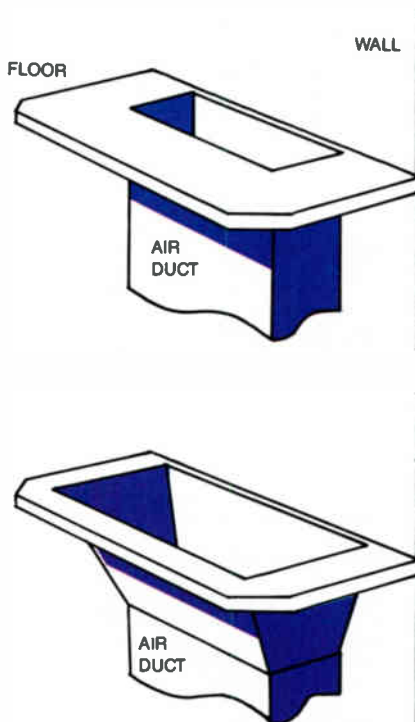


Fig. 6: Modification of a forced-air heating outlet for reduced wind noise. Enlarging the duct opening through a tapered section reduces exit turbulence by lowering the air velocity.

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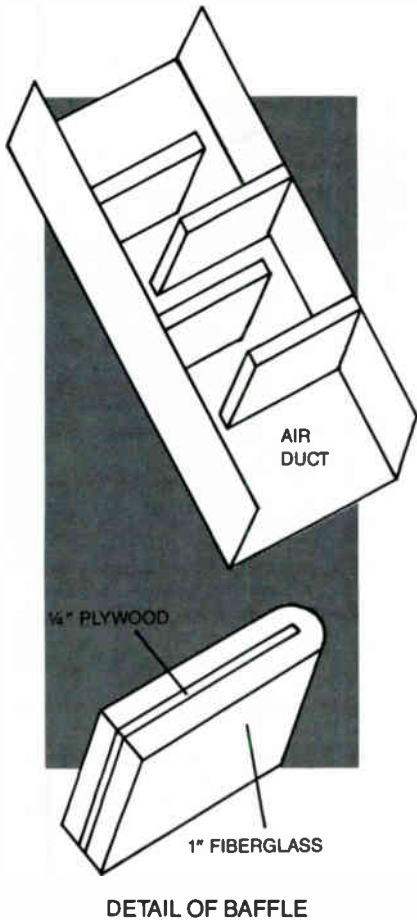
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DETAIL OF BAFFLE

Fig. 7: A "baffle farm" for reducing fan noise coming through an air duct. Each baffle is $\frac{2}{3}$ the width of the duct. Screws through the duct wall into the plywood cores fasten the baffles in place. Distances between the baffles should be different, to minimize cavity resonances.

your insurance actually covers what you might lose. A special replacement-cost policy on your equipment is cheap, reassuring, and sensible. Even if you never get uninvited water in your home, you can always get uninvited burglars who will be delighted to take your system off your hands.

Here are some signs that a house's lowest

level may have hosted a pond at one time: 1) a carpet that is cleaner or newer than all the others in the house; 2) white-edged stains around the bottoms of walls, a few inches above the floor; 3) peeling paint at the bottoms of door frames; 4) cinderblock, brick, or wooden "props" under any of the furnishings or stored cartons; and/or 5) the presence of a sump pump. If the pump is inoperative, it suggests that the last flood was a long time ago; if it works, you're covered until the power fails or unless the flood is a deluge.

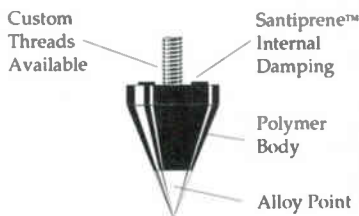
Just remember that water always behaves like the human mind: It seeks the lowest possible level. If there is any surrounding land lower than the house's lot, a basement-level walkout (with no steps) is the best insurance against equipment damage due to flooding. If all the land around the house is higher than its ground floor, be forewarned: sooner or later, it will flood. In fact, any plain with a stream running through it is susceptible to flooding, even if it hasn't for 100 years, because flooding is how it got to be a plain in the first place. There's no point in *worrying* about such a remote prospect, but as the citizens of Oakland, CA, learned last October, there's a lot to be gained by planning for it.

If there is the slightest possibility that your listening room may be subject to occasional baptisms, certain precautions can minimize the damage. Insurance is one. The most obvious second one is to install a sump pump if there is not one already in place. The less obvious third precaution is to place all your electronic devices at least as high off the floor as the basement's AC outlets—if the room starts to fill up, you will have time to move the stuff to higher ground before rising water reaches the AC circuitry. When that happens, it *should* cause the fuses or breakers to blow, but it may not. And if it doesn't, the electrified water will make it impossible for you to wade in and rescue anything. If the main fusebox is in the basement too, you would be unable to get to it to shut *anything* off. If things reach this point, phone the Electric Company for an immediate household turnoff, wait 30 seconds for them to arrive, then do it yourself if you know what you're doing. If you don't, call your insurance agent, get out the last 12 *Stereophiles*, and start planning your new system. (If your speakers are electrostatics, with power supplies in their bases, just forget all about precaution #3.)

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Exit music

Summing up, then, here's a recap description of the ideal listening room. It should be: 1) adequately isolated from neighbors and outdoor noises; 2) of rectangular floor plan; 3) optimally dimensioned as outlined above; 4) of masonry construction in as many boundary surfaces as possible; and 5) cooled and heated with a silent airconditioning system. Although this isn't a very long shopping list, your chances of find-

ing them all in any existing room are not very good. After all, only about 20% of all existing houses will come on the market throughout the year, and you probably won't have a year to select one.

You can improve your odds of success by working with a real-estate dealer who has computer access to the local Board of Realtors' listing database. Usually updated every two weeks or so, this allows its subscribers to plug in the client's requirements and receive a list of homes that meet them. (You can't access the list yourself unless you're a certified realtor, even if you own a modem.) But make sure your agent knows how to do this kind of search; many who have computers in their offices still haven't learned all they should about using them.

Even if you can only meet, say, half of the requirements, you'll still end up with a much better-sounding room than you would if you hadn't tried. And chances are you'll move again sometime, and will have better luck then. You might even be making enough income by then to do your listening room in the best possible way: building it from scratch. How to go about that will be the subject of future articles. **S**

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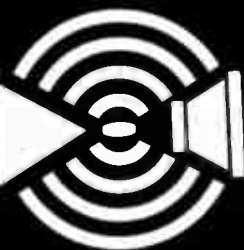
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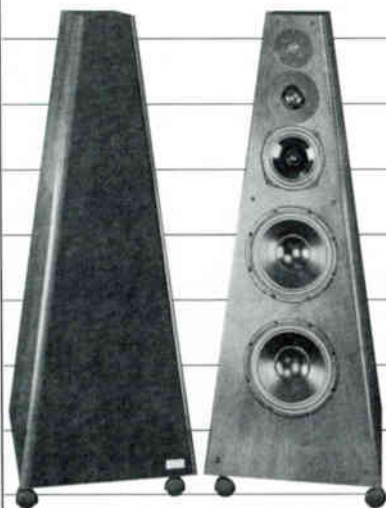
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Revue du Son (France)

June/July, 1989



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RECOMMENDED COMPONENTS

RECOMMENDED COMPONENTS

**THE 1990
AWARDS**

C

omponents listed here are ones which we have found to be among the best available in each of four quality classes, and

whose purchase we highly recommend. Following each listing is a brief description of the product's sonic characteristics and a code indicating the *Stereophile* Volume and Issue in which that product's report appeared. Some products listed have not yet been reported on; these are marked (NR). We recommend that any product's entire review be read before purchase is seriously contemplated (products without reviews should therefore be treated with more caution); many salient characteristics, peculiarities, and caveats appear in reviews, but not here. To obtain back issues of the magazine, see the advertisement in this issue. (We regret that we cannot supply photocopies of individual reviews.)

A small number of the listed items are discontinued models (‡), retained in this list because their durability and performance distinguish them as "classics," and because they can sometimes be obtained for substantially less than their original cost. (Upgrade modifications are available for many.) In general, however, discontinuation of a model precludes its appearance here. In addition, though professional components—recorders, amplifiers, monitor speaker systems—can be obtained secondhand and can sometimes offer performance which would otherwise guarantee inclusion, we do not generally include such components. Apart from that exception, *Stereophile's* "Recommended Components" listing is almost exclusively concerned with current products offered through the usual hi-fi retail outlets.

How recommendations are determined

The ratings given components included in this listing are predicated entirely on performance—*ie*, accuracy of reproduction—and are biased to an extent by our feeling that things added to reproduced sound (flutter, distortion, various forms of coloration) are of more concern to the musically oriented listener than

things subtracted from the sound, such as deep bass or extreme treble. On the other hand, components markedly deficient in one or more respects are downrated to the extent that their deficiencies interfere with the full realization of the program material.

We try to include in "Recommended Components" every product which we have found to be truly excellent or which we feel represents good value for money. Many different tastes are represented. The listing is compiled after extensive discussion among *Stereophile's* reviewing staff, editors, and publisher, and takes into account continued experience of a product after the formal review has been published. In particular, we take account of unreliability and defects that show up after extended auditioning. The fact that a product received a favorable review can't therefore be regarded as a guarantee that it will continue to appear in this listing.

We indicate products that have been on this list in one incarnation or another since the "Recommended Components" listing in Vol.9 No.7 (November 1986) with a special symbol: ☆. Longevity in a hi-fi component is a rare enough commodity that we felt it worth indicating (although, as in the case of separate MC head amplifiers, it can apparently indicate that the attention of design engineers has moved elsewhere).

We are not sympathetic toward letters complaining that the Symphonic Bombast A-123 Mk.IV, which we recommended heartily two years ago, no longer makes it into "Recommended Components" at all. Where deletions are made, we endeavor to give reasons (there always are reasons). But remember, *deletion of a component from this list does not invalidate a buying decision you have made.*

How to make use of the listings

Read carefully our descriptions here, the original reviews, and (heaven forbid) reviews in other magazines to try to put together a short-list of components to choose from. Carefully evaluate your room, your tastes, your source material and front end(s), your speakers, and then yourself: with luck, you *may* come up with a selection to audition at your favorite dealer(s). "*Recommended Components*" will not tell you just what to buy, any more than "*Consumer's Union*" would presume to tell you whom to marry!

Class A:

Best attainable sound, without any practical considerations; "the state of the art."

Class B:

The next best thing to the very best sound reproduction; cost is a factor, but most Class B components are still quite expensive.

Class C:

Somewhat lower-fi sound but far more musically natural than average home-component high fidelity; products in this class are of high quality but still affordable.

Class D:

Satisfying musical sound but significantly lower fidelity than the best available. Many of these products have obvious defects, but are inexpensive and much better than most products in the price category. Bear in mind that appearance in Class D still means that we *recommend* this product—it is possible to put together a musically satisfying system exclusively from Class D components. Below this level, system colorations start to become so great that guidance becomes almost impossible and any recommendation is out of the question.

Class K:

"Keep your eye on this product." Class K is for components which we have not tested (or have not finished testing), but which we have reason to believe may be excellent performers. We are not actually recommending these components, only suggesting you take a listen.

Turntables

Editor's Note: An audiophile worth his or her salt should consider at least one of our Class D recommendations or, preferably, one of the Class C turntables and their variants as the essential basis of a musically satisfying top system. An in-depth audition as part of a preferred turntable/arm/cartridge combination before purchase is mandatory. The point should also be made that these are lean times for turntable manufacturers—"Buy while you can" is Larry Archibald's advice. If an inexpensive turntable has not made its way into Class D or is not listed in Class K, assume that it is not recommended under any circumstances. Underachievers are more common in the world of turntables than in any other area of hi-fi.

A

Verma Dynamics 2.0: \$12,500

Ingenious vacuum holddown, air-bearing, suspended-subchassis turntable with integral air-bearing tonearm. JGH felt the complete player to give the "best sound from analog disc" that he has heard, particularly in its presentation of silent backgrounds and tight low-bass response. Only drawback is the need to house the air-pump module—for once *not* a reworked aquarium pump—in a separate room. A noise-reduction housing for the pump is now included in the purchase price. (Vol.10 No.8, Vol.11 Nos.1 & 4)

B

Goldmund ST4: \$5690

Martin Colloms's long-term reference, this integrated turntable/parallel-tracking arm LP player offers an almost unrivaled combination of speed and pitch stability, midband neutrality, and inner musical balance and drive. (Vol.13 No.3)

Space & Time Aura: \$4650

(See DO's review in this issue.)

C

Alphason Sonata: \$1800

In its current two-motor form, the belt-drive, spring-suspended Sonata offers a more spacious soundstage rendition than the Linn LP12, though with rather less of an involving sound overall. (Vol.13 No.3)

Linn Sondek LP12: \$1165 ☆

The standard against which newer turntable designs have been measured for 15 years now, the Linn is felt by some to be more colored than the other Class C tables (particularly in the upper bass). Latest version has a laminated armboard which, with Zener mods to the Valhalla board, results in a considerably more neutral sound. Certainly it is harder to set up and more likely to go out of adjustment, though with the latest springs and glued subchassis, it is much better now in this respect than it used to be (low-bass extension suffers when the LP12 is not set up correctly). Superbly low measured rumble and excellent speed stability reinforce the feeling of musical involvement offered by this classic turntable. Good isolation from shock and vibration—essential in view of the fact that JA's cats like to use his LP12 (with the lid down) as a springboard to jump on to the equipment cabinets! (This application is *not* recommended.) While the felt mat doesn't offer the greatest degree of vibration suppression within the vinyl disc, what absorption it does offer is uniform with frequency. Despite flirtations with other decks, JA remains true to the basic design he has used now for nearly 12 years. As an integrated system, with Linn's Ekos tonearm and Troika cartridge, approaches Class B performance overall. (Vol.7 No.2, Vol.13 No.3)

Roksan Xerxes: \$1800

Unusual but well-made design that eschews a conventional sprung suspension for a semi-rigid construction. Easy to set up and align, therefore, but a stable support essential. Excellent pitch stability, though the bass is a little lightweight. Provides a firm musical foundation for the SME V, Rega RB300, and Eminent Technology ET Two tonearms. (Vol.13 No.3)

SOTA Deluxe Star Series III: \$1795 ☆

A synergistic match with the SME Series V tonearm, the Series III Star, complete with the acrylic Supermat, is significantly better than earlier versions, due to its use of an aluminum armboard, new motor drive pulley, new suspension springs, and ribbed platter construction. Compared with the standard SOTA Sapphire, the vacuum holddown significantly improves bass range and detail, as well as resolution across the audio range. The basic SOTA Sapphire at \$1350 lacks vacuum disc clamping—the Series II Reflex clamp is supplied as standard—but is easy to set up and use, attractive, ingenious in design, and sonically excellent. (Vacuum clamping is available as a \$695 upgrade.) The SOTA

"Electronic Flywheel" line conditioner (\$300, Vol.9 No.2) improves performance very slightly further. If you find the cost-no-object "superdecks" tantalizingly out of reach, JGH recommends that you set your sights on the SOTA Deluxe Star. "The best turntable performance you can buy for anywhere near its cost," quoth JGH, though it must be noted that LA and JA find its sound a little uninvolved compared, for example, with the Linn, Well-Tempered Table, or VPI. (Vol.10 No.5, Vol.11 No.1)

VPI HW-19 III: \$1140 ☆

The Mk.III version of the VPI table, cosmetically more elegant than the original, achieves a standard of sonic neutrality that puts it close to the latest SOTA Star Sapphire, and at a significantly lower price. The HW-19 readily accommodates a wide range of tonearms—the ET 2 air-bearing design in particular—and is very stable. The \$300 Power Line Conditioner (see Vol.12 No.2) is a worthwhile accessory. (Vol.8 No.4, Vol.9 Nos.4 & 9, Vol.12 No.11)

Well-Tempered Turntable: \$1795 (inc. arm)

An integrated belt-drive turntable/tonearm combination featuring an acrylic platter and a unique four-point wobble-free bearing. Lacks a suspension, but designed with attention to detail, particularly concerning the maximizing of speed stability and the rejection of motor noise. Most obvious sonic characteristic is stability, both in speed and harmonic structure, coupled with cleaned-up sound quality: "The quiet between the notes is suddenly more silent," said AB in his review. In addition, dynamics seem to be enhanced, though the sound is more lightweight than that of, say, the VPI. Only significant drawback, as far as mix'n'matchers are concerned, is its dedication to the Well-Tempered Arm. No other can easily be fitted—we've had reports that the Wheaton works well—but it's available w/o arm for around \$1000. (Vol.11 No.3)

D

Acoustic Research Connoisseur ES-1: \$550 ☆

Although an increase in price means that it is no longer the bargain it once was, this is still a turntable we can heartily recommend. Compared with the original AR, this has much better cosmetics, comes with its own arm (for \$725), or can be fitted with yours—Sam Tellig just loves the AR with either the Rega RB300 or the SME 309, while Guy Lemcoe enjoyed the sound with the AudioQuest PT-5. Intrinsic character is a bit fat in the upper bass, but is nevertheless musical. Availability is limited, but The Audio Advisor has supplies. The AA's metal armboard should be regarded as mandatory (Vol.11 No.4), the Anarchist then feeling the sound with a felt mat to be Class C and rivaling the Linn LP12. Merrill's modifications of the Connoisseur are also said to be worth investigating. (Vol.8 No.7, Vol.11 No.4, Vol.12 No.8)

Linn Axis: \$795 (inc. Akito tonearm) ☆

Versatile, "turnkey operation," two-speed belt-drive deck with electronic speed control and ingenious suspension. "Smaller" sound than the Sondek. Latest version fitted with the new Akito tonearm, which is said to be much improved compared with the original arm. (Vol.10 No.1, original version)

Rega Planar 3: \$599 ☆

Synergistic mix of no-nonsense deck with superb arm. Lack of environmental isolation may be problematic;

some recent reports of variable wow & flutter; limited cartridge compatibility; but a safe Class D recommendation, nevertheless. Can be obtained in a dedicated version for playing 78s. (Vol.7 No.1, Vol.8 No.6)

Sonographe SG3: \$595 ☆

Better-sounding than the basic AR, the Sonographe may be hard to find. It's worth seeking out. Good value in the armless version. (Vol.9 No.7)

VPI HW-19 Jr. turntable: \$600

Well-constructed belt-drive turntable featuring an excellent disc-clamping system. No suspension, due to upgrade path to fully fledged HW-19 being incorporated into design. GAG therefore recommends a wall-mounted isolation shelf to get the best performance from the Jr. West-Coast price is \$25 higher. (Vol.12 No.10)

K

Ariston Q-Deck, Basis Debut, Dunlop Systemdek IIX, Heybrook HB2, Michell Gyrodek, Oracle Delphi Mk.IV and Alexandria Mk.III, Revolver Mk.II, SOTA Cosmos, Versa Dynamics Model 1.0, VPI TNT.

Deletions

RATA Torlyte modification for the Linn Sondek.

Tonearms

A

Airtangent: \$3600

Setting a new price level in this listing, this beautifully made Swedish parallel-tracking tonearm distributed in the US by Basis was felt by AB to achieve new standards of transparency, smoothness, and retrieval of detail with every cartridge with which it was used, coupled with the ability to present a "billowing" soundstage and a well-defined bass. Better in the highs than the SME, it is a little lean in the bass compared with the English arm. It does, however, allow for easy adjustment of VTA and features interchangeable, prebalanced arm-tube assemblies to allow easy cartridge changes. (Vol.12 No.2)

Linn Ekos: \$1995

Cleaner than the Ittok, upon which it is loosely based, the Ekos rivals the SME in overall neutrality while offering a somewhat brighter, more energetic presentation of the music. The treble is nevertheless superbly clean. The Ekos also provides a much better match with the Linn Sondek LP12 than the English arm, however, which loses control of the bass when mounted on the Scottish turntable. Martin Colloms also found the Ekos's bass to be more tuneful and "open" than that of the original Ittok. Azimuth adjustment is not possible. (Vol.12 Nos.3 & 4, Vol.13 No.3)

SME Series V: \$2250 ☆

Extraordinarily neutral pivoted tonearm, with the lowest resonant signature of any. Easy to set up, VTA and overhang are adjustable during play, but no azimuth adjustment, something that DO feels to be a significant drawback. The best bass performance on the market, says SWW, but JGH feels that the whole bass range is somewhat exaggerated. Certainly JA feels the latter to be the case when used with the Linn LP12. Some compatibility problems with cartridges having low height, but otherwise the new reference. Very pricey, but ergonomically and aesthetically a work of

art. A finish worthy of Tiffany's. A less versatile version, the IV, appears to offer many of the V's sonic virtues at a lower cost (\$1500). (Vol.9 No.6)

Wheaton Triplanar II Improved: \$1795

Limited-availability, unusual-looking pivoted tonearm with logically thought-out VTA and azimuth adjustments. While not as neutral as the SME V, and not having as much bass—the balance is on the lightish side—the latest version of the Wheaton excels in its ability to enable the cartridge to retrieve spatial information and present a detailed, solid soundstage. (Vol.11 No.1)

B

Eminent Technology Two: \$950 ☆

The ET Two corrects its predecessor's cueing difficulties and comes up with a host of ingenious extras, including VTA adjustable during play. More important, it has "an extraordinarily live and open soundstage," according to Anthony H. Cordesman, and gets the best results from a wide range of cartridges. Idiosyncratic nature of low frequencies precludes a Class A rating. Very fussy to set up and use and needs a very stable subchassis turntable—VPI, for example—to give of its best. Martin Colloms also reports excellent performance with the ET Two mounted on the Roksan Xerxes. Surpassed overall by the SME V, which has as neutral a midrange and significantly better bass definition and extension. At less than half that fixed-pivot arm's price, however, the ET Two is an excellent value. Latest version incorporates viscous damping. (Vol.8 No.7, Vol.13 No.3)

Linn Ittok LVIII: \$1195 ☆

The original Ittok LVII had slight resonant colorations in the upper midrange compared with the best arms, which could add both hardness and a false sense of "excitement." Its bass and lower midrange were still among the best, however, and superior to the similarly priced competition in these areas. New version incorporates refinements based on the Ekos and is significantly more expensive but not yet auditioned: this recommendation must be regarded as provisional. (Vol.8 No.7)

SME 309: \$995

Preliminary rating following the Audio Anarchist's continued use of this arm on an AR turntable. Review to appear presently. (NR)

Well-Tempered Arm: \$825 ☆

One of the most neutral arms available, according to JGH, this odd-looking arm is hard to fault on any count. Superb highs, stereo soundstaging, and midrange, plus excellent compatibility with MC cartridges that put a lot of energy back into the arm. Some deficiency/softness in the low bass and, according to some listeners, an undynamic sound, but virtually no other problems. Good value for money. Removing the armrest, which adds a thickening in the lower midrange when the arm is mounted on the Well-Tempered Turntable (see Vol.11 No.6), further improves the sound, as does replacing the standard counterweight with a more massy one nearer the pivot. (Vol.8 Nos.4 & 7, Vol.9 Nos.3 & 5)

C

AudioQuest PT-5: \$350

Medium-mass tonearm with straight aluminum arm-tube wrapped in clear polyolefin and nondetachable

headshell. Pivot damping optional, while VTA adjustable with setscrew at base, but no azimuth adjustment possible. Works well with AR and VPI Jr. turntables, with which it can be supplied as a package at reduced cost. AudioQuest Sapphire cable adds \$95 to price, but should be regarded as essential, says Gary Galo, the sound with the basic cable being rather veiled, if not totally muted. (Vol.12 Nos.8 & 10)

Rega RB300: \$299 ☆

The Rega offers very good detail, depth, midrange neutrality, ambience, and precision of imaging, almost creeping into Class B. Works well with the Rega and Roksan tables, but also recommended by the Audio Anarchist as an ideal substitute for the arms that come with the AR and Sonographic tables. (The Audio Advisor offers it as a package with the AR.) Lacks any form of height adjustment, however: VTA can only be adjusted by adding spacers under the base. Even cheaper RB250 dispenses with the spring downforce adjustment and the sintered tungsten counterweight, but sacrifices little in sound quality. (Vol.7 No.7, Vol.10 No.1)

K

Graham Engineering Unipivot, Naim ARO, Souther/Clearaudio.

Pickup Cartridges

A

Benz-Micro MC-3: \$1500

Low-output MC from the manufacturer of the van den Hul and Madrigal Carnegie cartridges that TJN thought to be overall the best he had heard to date in his system. Possessing a similar balance to the vdH MC One, the Benz MC-3 offers a slightly more transparent view into the soundstage. (Vol.13 No.3)

Dynavector XX-1: \$1295

"Easy on the ears," said AB in his review of this high-output MC which features a switchable "Flux Damper." Soundstaging, too, was an area where the Dynavector excelled, producing "a panorama with quality." Highly detailed presentation perhaps slightly offset by a feeling that the sound was slightly larger than life in being too harmonically rich from the upper-bass downward. Benefits significantly from regular "Flux-Busting." A low-output version is now available. (Vol.12 No.6)

Jeff Rowland Design Group Complement: \$2500

Setting a new upper limit for cartridge price, the high-mass Complement, which lacks any kind of cantilever, also sets a new standard for performance above our existing Class A, felt AB in his review. "Astonishing" ability to replicate transient attack is coupled with an almost unique ability to decode spatial cues within the recorded information, as well as Stygian low-frequency extension. However, it needs a tonearm with a secure mechanical foundation to achieve its best—the Wheaton Triplanar was a better match than the air-bearing Airtangent, for example. Stereo separation dependent on downforce, 3.5gm or more shifting the coils from their optimum position, effectively resulting in mono reproduction. (Vol.12 No.7)

Koetsu Rosewood Signature: \$1950

The latest version of Martin Colloms's reference pickup "matches the Troika for bass definition and overall defi-

nition." It offers a superb balance between the ability to decode space and perspective and to present a detailed retrieval of groove information, and allowing the listener to be swept away by the music (Vol.13 No.3)

Linn Troika: \$1750

Lightish balance, but musical integrity not compromised by superb retrieval of information. As good as the Koetsu Rosewood at presentation of the soundstage, in JA's opinion, with one of the best-defined bass registers in the business. Unique three-point fixing maximizes mechanical integrity but means that it can only be easily used in the Itok and Ekos tonearms. (Vol.10 No.6, Vol.13 No.3)

Monster Cable Sigma Genesis 2000: \$1200

Early samples seemed to be very arm-sensitive, but when mounted in an optimum tonearm—the ET Two, for example—the Sigma Genesis offers an airy and open sound with superb dynamics but a rather soft bass. Rather a forward if detailed presentation of soundstage information, as though the 2000 "seemed to turn up the contrast ratio a notch," thought MC, implying that it would not be the best choice for systems that are already a little larger than life. (Vol.13 No.3)

Ortofon MC-3000: \$1000

The "second most neutral cartridge" JGH knows of. This ceramic-bodied, higher-output child of the MC-2000 has a slightly warm balance, with silky highs producing a sumptuous sound from massed violins. Lateral imaging excellent but presentation of depth not as good, paradoxically, as the more forward MC-2000. Matching T-3000 transformer not in the same sonic class as, for example, the Vendetta Research phono preamplifier (which renders the transformer unnecessary). (Vol.11 Nos.1, 10, & 11)

Spectral MCR-1: \$1190

Hand-built and hand-adjusted, the Spectral produces a delicate rather than forceful sound, with remarkable faithfulness to the true tonal colors of instruments, though AB felt it to be a little romantic in nature when compared with the Jeff Rowland Complement. Latest Signature version could well be better but not yet tested. (Vol.12 No.7)

Talisman Virtuoso DTI: \$1200 ☆

Warmer balance than the Talisman S, with first-rate imaging and excellent harmonic contrast. One of the champs when it comes to retrieval of HF detail, with a top end free from the problems of fuzz and hash that plague many MCs. According to SWW, it has the "uncanny ability to reproduce the natural weight and authority of live music," with DO concurring that spatial detail "is sketched out with exquisite dimensionality." vdH stylus requires careful setup; output a little on the low side for some MM inputs. Somewhat forward balance, but up with the best in terms of transparency. With the cartridge optimally set up, the music emerges from a near-silent background akin to CD. (Vol.9 No.4, Vol.10 No.5, Vol.12 No.4)

van den Hul MC One: \$1075 ☆

Not particularly cable-fussy, but does require attention to arm damping. Works very well in the WTA and SME. Carries the vdH MC-10's resolution of soundstaging, tonal neutrality, and naturalness of midrange timbre a stage farther to compete with the best. Bass a little slow, perhaps, when compared with best per-

formers in this region. (Vol.9 No.8, Vol.10 No.5, Vol.12 No.2)

van den Hul MC Two: \$1475

High-output version of the MC One that seems ideally suited for classic-sounding low-gain tube preamps, such as the C-J PV9. A sweet-sounding, laid-back tonal balance that brings out the best in orchestral classical program, thought MC. (Vol.13 No.3)

B

AudioQuest 404i-L cartridge: \$550

A slightly forward treble and a minor lack of image depth didn't prevent TJN from enthusiastically recommending this MC, the sound being naturally detailed without any HF exaggeration. Current production samples have "Functionally Perfect copper" coil windings, said to improve the sound of the low-output version slightly but that of the "H" high-output version to a significant extent. (Vol.12 No.3)

Signet/Audio-Technica AT-OC9: \$400

"The best ever from Audio-Technica," said TJN of this MC, until early 1989 only available in the US as a "gray" import. Neutral through the midrange, the OC9 is less sweet and three-dimensional than the Class A vdH MC One, but not by much. Highly recommended (and an excellent tracker). A point worth noting is that it has very high output for a low-output 'coil, minimizing phono-stage noise. (Vol.12 No.2)

Clearaudio Gamma: \$495

(See TJN's review in this issue.)

Grado Signature TLZ: \$500

The only MM model to break out from the confines of Class C, the TLZ features slightly more open highs than the AudioQuest 404i-L, an open, lively midrange, a taut midbass, and expansive low frequencies, according to TJN. (Vol.12 No.7)

Krell KC-200: \$1100

Expensive, but slightly better than the KC-100 in all the areas where that cartridge performs best, with excellent dynamics. Too bright a presentation overall, however, just holds this sapphire-cantilevered sibling of the KC-100 out of Class A, felt AB. Needs low, 47-ohm loading for the sound to become fully coherent. (Vol.12 No.6)

Krell KC-100: \$800

A wide, deep, and focused soundstage are coupled with liveliness and clarity. If a little bright, the KC-100 "excels in soundstaging and separation of individual details within the soundstage," said TJN. Like the KC-200, borderline Class A, but smoother overall than its more expensive stablemate. (Vol.12 No.2)

Linn Karma: \$1225

Forward balance, with good, but not excellent, imaging. The whole is better than the sum of the parts, the result being consistently musical, particularly on rock and jazz material. (Vol.10 No.5)

Monster Alpha Genesis 1000 II: \$800

Almost as sweet in the top five octaves as the Koetsu Red Signature but more detailed. One of Dick Olsher's favorites, while DAS finds it "to play a wider variety of material with superb detail" than any cartridge he had heard up to February 1990. (Vol.10 No.5)

Monster Cable Alpha Genesis 500: \$500

Tight deep bass, clean high frequencies, but overall a lightweight tonal balance, thought TJN. This inex-

pensive cousin of the Genesis 1000 provides stunning image depth. (Vol.12 No.2)

Talisman Virtuoso Boron vdH: \$850

A neutral sound, coupled with good retrieval of inner detail and a smooth, well-controlled treble, thought DO of this high-output MC. Less good soundstaging than the more expensive DTi version, which offers a greater sense of depth, a more palpable image, and a less "exciting" sound. (Vol.12 No.4)

van den Hul MC-10: \$775 ☆

The first vdH to provide midrange and bass extension to match the typically excellent vdH high-frequency extension and detail. Tonal balance more like CD than the Koetsus. Superb decoding of recorded detail, but requires careful set-up. (Vol.9 No.6, Vol.10 No.5)

C

A&R P77Mg: \$150

Polite, sweet sound and a neutral tonal balance, but this English MM from Audio Influx is a little undernourished, dynamically. Will work wonders in an otherwise brashly balanced system. (Vol.10 No.4)

AudioQuest Ruby: \$200

High-output MC, available only from The Audio Advisor, offers excellent retrieval of detail without sounding too forward or bright. Mates well with the AudioQuest PT-5 tonearm. (Vol.12 No.8)

Audio-Technica AT-F5: \$250

Somewhat laid-back, not at all forward or peaky, said the Cheapskate of this gray-import MC, available from Music Hall and Lyle Cartridges. Add the fact that it "plays tunes" without being too overdone in the bass, and you can see why ST prefers it to the Shure V15 V-MR. (Vol.11 No.7)

Denon DL-160: \$115 ☆

KK felt the highs to be a little too soft, but deep, deep bass and wide, wide soundstaging gave this budget high-output MC a BIG sound. Sam Tellig was less impressed with the bass, but felt that its smooth, relaxed presentation of detail was most seductive. A winner in systems tending to be too upfront. (Vol.9 No.8, Vol.10 No.1)

Grado Signature MCZ: \$300

Although basically similar to the more expensive TLZ, the MCZ is less "fast"-sounding, with less well-extended highs and a less-focused sound. A "steady short-stop" rather than a "home-run hitter," said TJN. (Vol.12 No.7)

Linn K9: \$275 ☆

Remarkably neutral, clean-sounding MM fitted with a good diamond, features good transient response and bass dynamics, though slight tendency to edginess and upfront balance will favor systems optimized for non-classical rather than classical music reproduction. (Vol.10 No.1)

Nagaoka MP11 Boron: \$150 ☆

Clear, precise midrange and treble are allied with rather veiled bass, but the mixture will work well in inexpensive systems where the need for unfatiguing highs outweighs the lack of low-frequency clarity. Less expensive MP11 Gold (\$100, reviewed in Vol.10 No.4) almost as good. (Vol.10 No.2)

Ortofon MC-20 Super: \$300

Wide but shallow soundstage and somewhat exagger-

ated high end will mean careful attention to system matching. Like the X5-MC, the MC-20 Super will do well in systems having a depressed top octave. (Vol.10 No.5)

Ortofon X5-MC: \$300

This high-output MC features low frequencies that are extended and tight, and the Gyger-profile stylus retrieves more detail from the groove than the similar X3-MC. Somewhat forward-sounding, however. (Vol.11 No.7)

Shure V15 Type V-MR: \$297 ☆

Very neutral midrange and bass, slightly soft high end, high compliance. You sacrifice a bit of detail both compared with good MCs and the more expensive (\$400) Shure Ultra 500. A "budget reference," according to Sam Tellig and Larry Greenhill, who, given their druthers, would place it in Class B. Recommended for its unsurpassed tracking ability, excellent reliability, and listenability. Excellent value, frequently available at significant discount. (Vol.7 Nos.5 & 8, Vol.10 No.5, Vol.12 No.11)

D

Goldring Epic II (US version): \$80 ☆

Good trackability, and more extended HF response than the Epic sold in the UK (but less good soundstaging), make it suitable for use in relatively expensive LP players until the budget can be stretched for a Class B or C cartridge. (Vol.10 No.1)

Grado ZTE+1: \$25 ☆

The best buy in a really cheap cartridge, this \$25 MM has excellent trackability and sounds rather like a good MC. Readers of this magazine should consider spending more than \$25 on a cartridge, but when they are asked by friends what they would recommend for an old Dual or Garrard, this "system saver" is the one to mention. Will hum if used with older AR decks; lack of suspension damping can lead to woofer pumping, even flutter, with high- or even medium-mass arms. (Vol.7 No.8; actual review was of an earlier version, the GTE+1)

Nagaoka MP10: \$60

Rivals the cheap Grado as a bargain-hunter's dream. Lacks attack and detail, but sounds well-integrated across the frequency band. (Vol.10 No.4)

Ortofon MC-10 Super: \$100 ☆

"Uncolored, detailed, and composed," said KK of this conventional-output MC, with a performance evenly balanced across the board. Sins of omission rather than commission lead to a recommendation. Reduction in price to \$100 makes this Ortofon much more competitive—"A great deal," says PWM. (Vol.10 No.2)

Shure VST III cartridge: \$100

Sounding best when used with its integral damping brush, this inexpensive MM lacks transparency and detail, but tracks superbly and offers a neutral tonal balance. (Vol.12 No.3)

K

AudioQuest AQ7000, Win Labs FET-10.

Deletions

Madrigal Carnegie 2 discontinued, Adcom XC/Micro-ridge II, MAS Econocoil, and Ortofon MC-30 Super not auditioned in too long a time.

CD Players & Digital Processors

Editor's Note: The class ratings are a little different for CD players: whereas the phrase "state of the art" can be interpreted literally for other categories, here it means the best CD sound available as of the time of writing. We urge caution to someone about to purchase an expensive "state-of-the-art" CD player and note that perhaps the wisest strategy these days would be to buy separate player and DAC units, eventual replacement of the latter being the best way to stay abreast of continuing development. However, it now seems that deficiencies in the A/D converters used to master CDs may well be the limiting factor in CD sound—see Robert Harley's interview with Doug Sax in Vol.12 No.10. It is also worth comparing the performance of the industry-standard Sony PCM-1630 with Chesky's 128x-oversampling ADC on the appropriate tracks on the *Stereophile* Test CD.

A

Accuphase DP-80L/DC-81L: \$13,000

This beautifully constructed two-box CD player is the most expensive on the market, but does offer a sound quality commensurate with that price. A similar tonal balance to the Sony R1 combination, but rivals the Theta at retrieval of information and detail, and the Tempest II at soundstaging. It may be unbelievably expensive, but this Accuphase does excel at the ability to present the musical values within a recording. Note that the output is phase-inverting. (Vol.12 No.3)

Krell SBP-64X D/A processor: \$8950

Not yet reviewed, but the finest sound from CD that Sam Tellig, the Audio Anarchist, has heard. Don Scott feels that the Krell processors work well with the inexpensive Luxman D113-D transport. (NR)

Sony CDP-R1/DAS-R1: \$8000

As beautifully made as the Accuphase, this expensive player features a unique twin-optical datalink between its two chassis. JGH felt the low frequencies to be exaggerated in level, but otherwise had no criticisms of its sound, finding the soundstaging and ability to retrieve detail to be "stunning" and the overall sound "silky." (Vol.11 No.12, Vol.12 No.2)

Theta DS Pre D/A preamplifier: \$4000

Providing extensive digital-domain functions, including a tape monitor facility, this massive processor features user-replaceable ROM chips containing the coefficients for the digital filter. The analog section includes one additional set of line-level inputs. LL felt the sound to be the best he had ever heard from CD, with a vividly three-dimensional soundstage and superb transparency. DO found the best sound from the DS Pre is to be had from its Tape Out sockets. Less expensive DS Pro (\$3200) dispenses with the preamplifier functions. (Vol.12 No.3)

Wadia Digital WD2000 D/A decoding computer: \$7995

Wadia Digital WD1000 D/A decoding computer: \$5725

These processors feature a digital filter that differs from just about every other around in that it uses an algorithm different from the ubiquitous (sine x)/x

impulse-response reconstruction filter, intended to more closely synthesize the original analog waveform before sampling. The 1000, a single-box sibling of the expensive WD2000, offered the best CD sound that Martin Colloms had heard as of summer '89. A "striking" level of clarity and transparency was coupled with pinpoint focus and a tight, powerful, tuneful bass. LG feels the Wadia 2000 to be better than the Krell, while AB thought it to be "a sonic knockout," particularly when fed a digital signal from the expensive Esoteric transport. AB also enthused at length about the Wadia's ability to throw a deep, detailed, and stable soundstage. High frequencies of both these processors are a little rolled-off in comparison with the other Class A contenders, which might mean more-than-usual care in system matching, while relatively high levels of ultrasonic and RF spurs present in their analog outputs might lead to trouble with some pre- and power amplifiers. As with the Theta processors, the Wadia's DSP program is held on replaceable ROM chips, allowing for relatively inexpensive performance upgrades. Recent controversy concerns whether the Wadia processors are 64x-oversampling or 16x-oversampling. (It appears that they are 16x-oversampling in the digital domain, with a further 4x factor achieved by timesharing the signal between four separate Burr-Brown 18-bit DACs—shades of Stan Curtis's original Cambridge CD!) The actual oversampling ratio, however, would appear to be less important than the musical results, and there the Wadias can hardly be faulted. Low-level linearity of the WD2000, surprisingly, was quite poor compared with the other Class A recommended units. (Vol.12 No.9, 1000; Vol.13 No.1, 2000)

B

Arcam Delta 70 CD transport: \$1295

A high-quality CD transport using Philips's top mechanism with optical and coaxial serial digital outputs. (Vol.12 No.10)

Kinergetics KCD-40: \$1995

Quite the best single-box CD player JA has heard, the KCD-40 offers a rather laid-back balance, but with a superbly detailed soundstage. Less soft-sounding than the Wadia, the KCD-40 lacks a little image depth in absolute terms, but not to the detriment of the music. A year ago, you would have had to pay \$4000 for this quality of CD sound. (Vol.13 No.1)

Krell SBP-16X D/A processor: \$3200

A provisional inclusion following the Anarchist's enthusiastic purchase of a sample. Full review to follow. (NR)

Philips LHH1000: \$4000

A solidly constructed two-chassis player (transport and DAC), with an ergonomically excellent "universal" remote control, the LHH1000 uses premium versions of the Philips 16-bit, 4x-oversampling chip set. The sound is almost of Class A caliber and features superb retrieval of detail and an excellent sense of space. Its midrange presentation is rather more laid-back, overall, than the Sony R1, which also has more impact in the lowest octaves. (Vol.12 No.6)

Proceed: \$1695

This unusually styled, superbly constructed player has a more lively, upfront balance than the Kinergetics KCD-40, with strong, powerful bass, a rather laid-back spatial presentation, and a "liquid midrange texture."

according to Robert Harley. Important to allow a good warm-up period before listening to this player, as it initially sounds rather aggressive and thin. (Vol.13 No.2)

C

Barclay Bordeaux: \$1500

The review sample was based on a Philips CD880 chassis with premium Philips chips, but current production is based on the very similar CD80. A high degree of HF transparency is coupled with excellent soundstage focus and extended, well-controlled low frequencies, allowing the music to communicate considerably more effectively than via the stock machine. Overall presentation is more upfront than the softer-sounding Marantz CD-94, and a little thin-sounding when compared with the Kinergetics KCD-40. (Vol.12 No.8)

California Audio Labs Icon: \$695

Digital output module costs an additional \$95. (See GL's review in this issue.)

JVC XLZ-1010TN: \$700

(See RH's review in this issue.)

Precision Audio D1VC-80: \$1349

Like the Barclay Bordeaux, the review sample was based on a Philips 880 chassis, though current production uses the similar CD80. More detail than the Marantz CD-94 and with better bass control and articulation, it lacks the older player's midrange and HF smoothness. Original sample both a little dry in the treble and slightly lacking in soundstage palpability when compared with the Bordeaux. Modifications have been made in production that RH found to alleviate this sonic characteristic. (Vol.12 Nos.8 & 10)

D

Adcom GCD-575 CD player: \$600

Borderline Class C sound from this modestly priced player due to its superb resolution of detail. Dynamics a little restricted, however, and balance may be too lean for some tastes. (Vol.12 Nos.3 & 6)

Arcam Delta Black Box: \$650/\$799

Outboard digital processor that uses a selected Philips 4x-oversampling, 16-bit chip set and a custom LSI to look after the digital signal handling. Tonal quality a little forward in the midrange, with slightly "tizzy" highs, and upper bass rather soft; nevertheless, a very musical sound. The optical-input version costs another \$149. (Vol.12 Nos.2 & 10)

Harman/Kardon HD7500: \$450

JA's and GL's auditioning convince us that this inexpensive "bitstream" player deserves a Class D recommendation, but see RH's review in this issue for a contrary opinion. More expensive HD7600 identical apart from digital output and more varied features.

Rotel RCD 820BX2: \$749

Less smooth, a cooler balance than, for example, the Denon 1500, but more musical, was LL's finding, feeling that this UK-designed, 4x-oversampling Japanese player had excellent clarity and focus. Not as deep a soundstage as the Sonographe, and occasionally sounds a little "sparse and brittle," but edges slightly ahead of the American player in terms of detail. (Vol.11 No.8)

Sonographe SD1 Beta: \$795

Using the now-venerable 14-bit Philips chip set and a little dark-sounding and lacking resolution when

compared with the best machines, the Sonographe is nevertheless one of the more musical-sounding players around. Throws a deep soundstage when compared with unmodified 16-bit Magnavox players. (Vol.11 No.11, Vol.12 No.3)

K

Latest version of The Mod Squad Prism, Aragon D2A, CAL Tercet Mk.III and Aria Mk.III, Krell CD turntable, Meridian 206 and 208, Proceed D/A processor, Rotel RCD-855, Stax DAC-X1t.

Deletions

California Audio Labs Aria Revised and Tempest II, Magnavox CDB582, Meridian 207 Pro, and Yamaha CDX-1110U discontinued. Marantz CD-94 and Onkyo Grand Integra DX-G10 now too expensive for performance offered. British Fidelity Digilog D/A converter currently not available in the US.

Preamplifiers

A

Conrad-Johnson Premier Seven: \$7850

The phrase "without any practical consideration" in the description of an archetypal Class A component applies in spades to this expensive, two-chassis, dual-mono, tube preamplifier. The two switched-attenuator volume controls are a pain to use and feature too-large changes in level, particularly at the lower end of their travel, which is where they are most often used, due to the excessive line-stage gain; the line stage is both polarity-inverting and not particularly neutral; the tape-monitor arrangements give potentially speaker-destroying positive feedback when the switches are inadvertently set wrong; and it takes Houdini to gain access to the right-hand channel tubes. But the sound from LP, using low/moderate-output MC cartridges, is stunningly true to the original, both in musical terms and when it comes to the Audio Anarchist's "palpable presence." The Premier Seven is probably the most neutral, best-imaging, all-tube preamp for dedicated LP reproduction ever to reach full-scale commercial production. (We have yet to hear the Counterpoint SA-9/SA-11 combination under familiar circumstances.) Though the Seven's distortion is a little high (though still innocuous) for a late-'80s design at around 0.1-0.3%, circuitry buffs should ponder the fact that this is achieved without any loop negative feedback! With a phono stage based on novistors, this is one linear circuit. (Vol.11 No.11, Vol.12 No.8)

Krell KSP-7B: \$2700

According to the Audio Anarchist, you used to have to pay \$4-5k for a preamp this good. "Neutral, sweet, and above all dynamic," he says. (NR)

Mark Levinson No.26: \$5035

The No.26 has a more laid-back presentation of the music than the Krell preamps, coupled with superb definition of detail and soundstage delineation. One of the two finest solid-state preamps JA has heard, the other being the Vendetta phono unit. With internal switches set for minimum gain, the sound lacks dynamics, however. Has both balanced and unbalanced outputs, a choice of internal balanced line-level input or high- or low-gain phono input, and front-panel switchable signal polarity. The price quoted is for the version with the balanced input module. Digibuffs can obtain a basic version without phono

stage. Should they change their mind, an outboard phono unit, the No.25, is available. (Vol.11 No.5)

Mark Levinson No.25: \$1990/\$1910
(High/Low Gain)

\$2990/\$2910 with PLS-226 power supply
MC-line-level phono preamplifier featuring circuitry identical to the phono section of the No.26 and conventional unbalanced outputs, the No.25 can be powered from the No.26's PLS-226 supply or from its own, with which it achieves a stunning degree of transparency, neutrality, and musicality. JA has obtained the best results from the No.25 with the latest AudioQuest Lapis connecting it to the No.26; Madrigal's own HPC interconnect renders the sound more forward, even more vivid, but this will make the sound rather unforgiving unless the system is rather laid-back overall. (NR, but see the No.26 review in Vol.11 No.5)

The Mod Squad Deluxe Line Drive AGT: \$1095
Its passive nature places demands on the components upstream of it to be able to drive a fairly demanding load, but if that is the case, the Line Drive Deluxe offers the most transparent, least colored way of achieving Class A sound from CD and other line-level sources. Must be used with short interconnects, however. (The improvement offered by the Deluxe over the conventional Line Drive is not subtle.) Sets a new standard for Class A sound at an unreasonably low cost. (Vol.12 No.1)

Threshold FET 10: \$4150

Two-box solid-state preamplifier—phono (\$1650) and line stages (\$2500) available separately—with separate "e" series power supplies. Not quite as rich-sounding as the Audio Research SP11, according to JGH, and not quite as much image depth, but accurate, transparent, and capable of intensely musical sound. Borderline Class A sound with its basic power supply (with which the combined price drops to \$3550; *ie*, \$1350 phono/\$2200 line stage), but true Class A with its upgraded, beefier supply. Threshold having taken the hint from the fact that a number of FET-10 owners—including JGH—had bought the John Curl-designed Vendetta Research power supply. Owners of the original power-supply version can have their preamps upgraded by any authorized Threshold dealer. (Vol.10 No.6, Vol.11 No.1)

Vendetta Research SCP-2B phono-preamp: \$2495

A dual-mono MC-line-level RIAA equalizer and preamplifier from John Curl that redefines the definition of "quiet." JGH felt that this well-made unit imposed less of a signature on the signal than any other preamp he has heard. An ideal partner for a passive-preamp-based system, though its lowish output means that the power amplifier or speakers used must be quite sensitive if musically acceptable levels are to be achieved. Current version is non-polarity-inverting. (Vol.11 No.6)

B

Conrad-Johnson PV9: \$2950

Single-chassis derivative of the Premier Seven, this all-tube preamp shares many of that thoroughbred's operating idiosyncrasies, including the excessive line-stage gain and the kamikaze tape-monitor switching. But for those with Grados or Talisman high-output MCs, the sound from LP, if rather laid-back for some tastes or some systems, will approach Class A quality. Line stage is polarity-inverting. (Vol.12 No.5)

David Berning TF-12: \$2950

"Incredible liquidity" and "an impressively wide, spacious soundstage," said JGH, but ultimately he found the TF-12's phono stage to be too mellow, feeling that it erred from neutrality in the opposite direction from the Klyne SK-5A by about the same amount. JA feels, however, that this tube preamp's unique combination of musicality and remote control of volume and balance deserve a guarded recommendation, particularly in systems verging on too bright a presentation. (Vol.11 No.7)

Dolan PM-1: \$2500

Solid-state Canadian preamp with a warm sound reminiscent of a C-J tube design. Mellow, musical balance, but bass a little soft. (Current version said to have detail changes that have improved the latter aspect of its sound quality.) (Vol.11 No.4)

Electrocompaniet EC-1: \$2095

A clean and detailed sound, especially at low frequencies, with realistic dynamics. Balance a little on the warm side. "Excellent value for money" and "An outstanding recommendation," proclaimed SWW, if not quite reaching the standard set by the more-expensive Klyne. EC-1A (\$1795) is identical to the EC-1, apart from lacking the MC-2 MC board, and will accept MM and high-output MC cartridges, as well as low-output MCs down to 0.3mV output. (Vol.10 No.9)

Klyne SK-5A: \$3250 ☆

Incredibly clean, quick, detailed, smooth, open, and solid, with superb imaging and soundstaging. One of the most neutral preamplifiers, but a lack of sympathy for systems having a forward balance precludes a Class A rating. TJN's long-term reference. Particularly suitable for moving-coils (includes a variable-gain head amp and HF rolloff switching). (Vol.10 No.6)

Meitner PA61: \$2395

Fully remote-control solid-state preamplifier that scores in low-frequency extension and soundstage presentation. Absolute polarity switchable from the listening seat. Somewhat bright balance—"zest and sparkle," noted AB in his review—but a relative lack of detail and dynamics precludes a Class A rating. Best used with the Meitner "Translink" line-level isolating transformers. Price includes wired remote; \$2495 with IR remote. (Vol.11 No.6)

The Mod Squad Phono Drive: \$1495

Beautifully engineered, stand-alone MC/MM phono stage with line-level output. Includes low-output-impedance line stage with volume and balance controls. Excellent delineation of detail; superb soundstaging; only a rather high noise level with moderate-output MCs precludes a Class A recommendation. Also now sold in conjunction with the Mod Squad's Line Drive Deluxe as the Duet. EPS version with external power supply costs \$1795. (Vol.12 No.1)

Music Reference RM5 Mk.II: \$1150

(See DO's review in this issue.)

C

Adcom GFP-565: \$800

An excellent preamp with superb parts quality, buffered tape outputs, low output impedance, and high-current, low-impedance power supply, that incorporates Walt Jung's designs. GAG feels the '565 should convince

even the most skeptical listener that IC op-amp circuits can sound both musical and accurate. Full-featured, but purist outputs are supplied that bypass tone controls and filters. Phono preamp is one of the quietest ever, with accurate RIAA EQ. The best under-\$1000 preamplifier, according to GAG, offering stiff competition to far more costly units. GAG felt Class B was the most suitable rating for the '565, but it has been provisionally placed in high Class C pending further auditioning in Santa Fe. (Vol.13 No.2)

Audio by Van Alstine Super-PAS Three: \$595

Owners of vintage Dynaco PAS2, -3, and -3X tube preamplifiers can send them to Frank Van Alstine to be modified for \$350, or can rebuild them themselves with a \$200 AVA parts kit; otherwise, AVA offers Super-PAS preamps constructed on new Dynaco chassis for \$595. Featuring rather a lean tonal balance with less well-defined low frequencies than should otherwise be the case, the Super-PAS Three has excellent soundstaging and is still the least expensive way for an audiophile who prefers to use MM cartridges to acquire Class C preamp sound. Limited LF headroom on phono input mandates careful matching of cartridge and tonearm. Now uses gold-plated Tiffany connectors and Chinese 12AX7A tubes with 25% higher gain. (Vol.11 Nos.10 & 12)

Forté 2: \$990

Basic preamp from Threshold's Nelson Pass, using premium ICs, that accommodates all but the lowest-output MCs—gain and loading all being adjustable internally. "No significant shortcomings apart from dynamics," said the Audio Anarchist, while the line stage, if not as neutral as the best Class B and A models, renders the sound of CDs a little on the mellow side—not a bad thing. (Vol.12 No.5)

Hafler Iris: \$800

Ingenious, all-FET remote-control preamp designed by Acoustar's Jim Strickland, with analog volume and balance controls. Line stage a little on the dry, wispy side, with slightly restricted soundstaging, but fundamentally neutral tonal balance. Low-noise phono stage (MM and MC) is lightish-balanced, resulting in a sound that overall doesn't quite approach the PS 4.6/M-500 combination, although more musical than the Class D contenders. Version without the remote control and IR receiver card is available for \$650. (Vol.12 No.6)

Linn LK1: \$1050

Unusual but exquisitely made solid-state preamp with digitally switched volume control and all-XLR input/output sockets apart from phono (MC and MM). (Linn dealers can supply suitable adapter cables.) Line stage is polarity-inverting. Only four line-level inputs may be a drawback. Fundamentally on a par with the PS Audio 4.6 sonically, with a similar slight veil drawn over the sound (though less bright overall), the LK1 is far more civilized. At its best with the matching LK280 power amplifier, when it provides "fit-and-forget" high-quality sound, particularly from LP. Owners of high-output MMs should note that the MM input has limited headroom, particularly at high frequencies. Remote control—essential—adds \$110 to price. (Vol.12 No.7)

MFA Magus: \$995

"A fine preamplifier for under \$1000," said Sam Tel-

lig of the Magus, which features "the magic of tubes in the midrange. . . sweet, smooth, and easy on the ear," without the sound becoming too dark or closed-in, or the bass too flabby. Idiosyncratic gain setting, which means that the line section will be too sensitive when the phono input is optimized for low-output MCs, but a mono switch is included. (Vol.12 No.12.)

The Mod Squad Line Drive AGT: \$595

The ideal Class C "preamplifier" for a CD-based system, given that its passive nature will mean that cables must be kept relatively short. Latest version has AGT (Advanced Grounding Topology) feature. (Vol.10 No.3)

NAD 1300: \$399

Full-function preamp with versatile tone controls. Superbly quiet, delicate-sounding MC input; excellent dynamics; extended highs; slightly forward tonal balance better suited to rock or jazz than to classical music. Rather lightweight bass makes the 1300 an unsuitable match with the NAD power amplifiers, which are also a little lightweight. (Vol.11 No.12)

PS Audio 4.6: \$699

Excellent phono stage (switchable between MM and MC), if both a little bright and lacking air when compared with the Class B contenders. Line-section is sweet, though a little wispy in the highs, rather than punchy and dynamic, but can be switched out. TJN suggests that the overall performance is of almost Class B standard when the 4.6 is coupled with the M500 power supply (which raises the price to \$1104). (Vol.11 Nos.9 & 12)

PSE Studio SL: \$750

Inexpensive solid-state preamp with balanced and unbalanced outputs that sounds its best after 72 hours' warmup. Includes a mono switch! Good transparency, dynamics, and rendition of instrumental tonality, but the PSE can sound rather cold with some power amplifiers. MM input has limited headroom, so high-output types best avoided. (Vol.13 No.1)

Superphono CD Maxx line preamp: \$399

Inexpensive, line-level-only active preamplifier with unique styling and extremely neutral sound. (Vol.11 No.9)

D

Adcom GTP-400: \$380

GAG enthused at length in his review over this inexpensive IC-based tuner/preamplifier combination that has had op-amp guru Walt Jung's magic wand waved over it. Very low noise on all inputs; euphonically warm-sounding rather than accurate phono circuit; reasonable soundstage depth; line stage rather laid-back in the top; not the ultimate in inner detail; the overall sound, however, is musical and enjoyable. Errors are of omission rather than addition. Tuner section, although not offering the ultimate in selectivity, will be good enough for most users and, again, offers musically satisfying sound. (Vol.12 No.9)

Parasound P/FET-900: \$395

Neutral line section with good dynamics; MM-only phono stage has slightly astringent treble. (Vol.11 No.12)

QED PCC passive preamplifier: \$250

Unusually styled but well-made passive control center, lacking transparency and dynamics when compared with active preamps. (Vol.11 No.12)

K

Audio Research SP15, SP14, & SP9 Mk.II, Classé 5, Conrad-Johnson PV-8, Counterpoint SA-9/SA-11 & SA-3000, Quicksilver, Convergent Audio Technology SL1.

Deletions

Motif MC-7 not auditioned in too long a time to be certain of its current level of attainment.

Moving-Coil Step-up Devices

A

Mark Levinson No.25: \$2990/\$2910 (High/Low Gain)

MC-line-level phono preamplifier featuring identical circuitry to the phono section of the No.26. Above price includes PLS-226 power supply. See "Preamplifiers." (NR)

Vendetta Research SCP-2B: \$2495

Ultra-quiet dual-mono phono preamplifier includes RIAA equalizer to give line-level output. See "Preamplifiers." (Vol.11 No.6)

B

Conrad-Johnson Premier Six: \$985 ☆

Possessing colorations and transparency similar to those of the Premier Three, the Six can be ideal for use with transistor preamps, but requires careful matching. (Vol.8 No.5)

Counterpoint SA-2: \$1095 ☆

Superb preservation of detail, low distortion, lovely midrange. The noise is noticeably higher than that of the Klyne (see below), but the problem with fat bass on early units has been corrected. Comes with an interesting tube-bias adjustment for tailoring the sound to your tastes; the SA-2 can be made to sound rich and euphonic or somewhat lean—as long as you don't go crazy wondering what's right. (Vol.6 Nos.2 & 3)

Electrocomplanet MC-2: \$450 ☆

Deleted from "Recommended Components" in 1986 due to lack of availability in the USA, this solid-state head amp is now distributed by Music & Sound Imports. In the original review, AHC felt it to be better than the Klyne in terms of openness and dynamics, though less universally applicable. Must be used with cartridges having less than 50 ohms source impedance, so essential to audition with your chosen cartridge before purchase. (Vol.8 No.5)

Klyne SK-2a: \$750 ☆

A close rival to the Counterpoint SA-2, the basic difference here being solid-state vs tubes. Superb bass, very deep and tight, excellent high-frequency extension, excellent imaging. It still lacks the three-dimensionality of tubes, but only slightly. Adjustable high-frequency rolloff and cartridge loading are boons for those with several MC cartridges. A bargain at \$750. (Vol.7 No.3, Vol.8 No.5)

The Mod Squad Phono Drive: \$1295

Matches both MM and MC cartridges with versatile loading options. Line-level output. See "Preamplifiers." (Vol.12 No.1)

C

Music Reference RM-4C: \$750 ☆

Not as good as the best tube step-ups, but similar in

character and less expensive. The RM-4 is flexible and a good deal. (Vol.8 No.5)

Power Amplifiers

A

Editor's Note: Class A amplifiers differ sufficiently in character that each will shine in an appropriate system.

Krell KSA80B: \$3950

The best power amplifier Sam Tellig has heard and used—"Smooth and delicate." (Vol.12 No.4)

Mark Levinson No.20.5: \$12,000/pair

Class-A 100W monoblock with fully regulated power supply for output stages. Successor to the legendary ML-2, the slightly different No.20 was the finest power amplifier JA has used, particularly regarding soundstaging and the authority of low frequencies. The No.20 had a somewhat soft treble balance compared with the No.23 and ARC M-300, but got the best from loudspeakers with which it was used, particularly regarding low-frequency extension and definition. Auditioning of the No.20.5, which differs from its predecessor only in the AP-4 input and driver card—an upgrade costs \$1000/pair—indicates that the performance of its predecessor has been improved upon, particularly with respect to the soft treble balance, though the amplifier's basic "forgiving" nature, once warmed up, remains. Offers both balanced and unbalanced inputs. (Vol.12 No.9)

Mark Levinson No.23: \$5295

Notably less laid-back than the No.20.5 (or Krells), careful system matching is more necessary with this 200Wpc powerhouse of an amplifier. The result, however, is a sound that is harmonically correct, focused, and possessing great dynamic contrast, though with a bass that, though extended, is not quite as tight as the Krells' (or No.20.5), according to LL (and JA). "Amazingly lifelike soundstage dimensionality" (!), concluded LL. (Vol.11 No.9)

Prodigy 150 monoblock OTL: \$7000/pair

Monstrous OTL tube amp, developed from the Futterman designs once sold by NYAL. Tonal balance very dependent on load impedance presented by loudspeaker. Bass a little lightweight, despite well-extended small-signal LF response, and the sound can take on treble stridency with highly capacitive loads, but the Prodigy's main strength is the depth and width of the soundstage thrown by a pair with appropriate speakers. (Vol.12 No.9)

Vacuum Tube Logic 225W DeLuxe monoblock: \$4200/pair

Of these classic tube designs, Robert Harley commented that they are "easily the most musical and enjoyable amplifiers" he has heard. A wealth of detail is presented in a natural manner without the listener feeling that he should run for cover, while the soundstage has a transparent, see-through quality. Low frequencies have a punch and tautness more like that of a typical solid-state amplifier. (Vol.13 No.1)

Vacuum Tube Logic 300W DeLuxe Monoblock: \$4900/pair

"HF magic," said JGH in his review, commenting on this high-powered tube amp's ease in the treble, an attribute that is not obtained by dulling the HF con-

tent of the music. This is coupled with well-defined low frequencies and a neutral midrange that mates well both with JGH's Sound-Lab electrostatics and with Infinity IRS Betas. (Gordon is currently auditioning the Manley 350, an amplifier that could well take the Deluxe 300's virtues even further in the same direction.) (Vol.11 No.10)

B

Aragou 4004: \$1595

Attractively styled class-AB solid-state amp, designed by Krell's Dan D'Agostino, and capable of high current delivery into awkward speaker loads. Fuller sound than the Adcom '555 ("being less dry in the top octaves," said TJN), more neutral tonal balance than the Motif MS-100, and even better soundstaging than the Onkyo M-508, make it a borderline Class B contender. Good value for money, very high power rating—200Wpc—and an excellent reputation for reliability, according to LL. (Vol.10 No.9)

Boulder 500: \$3695 ☆

Dropped from "Recommended Components" in 1988 due to a misunderstanding over its availability, this powerful solid-state amplifier, based on Deane Jensen's 990 discrete op-amp module, extends the traditional strengths of solid-state amplifiers throughout the frequency spectrum. Transparent sound and tonally very neutral, though with possibly a trace of hardness in the mids, possibly redressed by recent, unauditioned circuit refinements. JGH thought the sound of Sound-Lab A3s driven by the less-featured but otherwise identical Boulder 500AE was a highlight of the 1990 WCES. (Vol.9 No.5)

Classé DR-3B: \$3195 ☆

Now in a "B" revision, low 25Wpc and class-A operation remind one of the classic Mark Levinson ML-2. Mellow and richer than the Krells, and lacking their dynamics, the Classé DR-3 produces a sweet, detailed sound, with surprising output capability for the modest power rating. High Class B. Particularly well suited to Apogee Scintillas. (Vol.8 No.8)

Classé DR-9: \$3495

First class-AB design from this Canadian manufacturer, the DR-9 gives up little to the DR-3 and scores highly in its ability to deliver high power into low-impedance loads. "Its strong suits are definition, detail, depth, and dynamics," said AB, to which must be added transparency and an extended spectral response. Less robust in the lows and leaner than the Krell KSA-200, the DR-9 excels at the reproduction of a convincingly real soundstage. Now features balanced and regular operation. (Vol.11 No.10)

Electrocompaniet AW100: \$2195

Offering the antithesis of "transistor" sound, the solid-state AW100 pleased both tube-lover DO and the anarchistic ST with its lack of midrange grain, its excellent bass control and dynamics, and its sweet high frequencies, though some may find its sound slightly "dark." DO felt that while "it didn't have as expansive a soundstage as the Quicksilvers, it was better balanced overall." A best buy. (Vol.12 No.3)

Kebschull 35/70: \$2375/pair

West German, low-powered tube monoblock that DO preferred to the Quicksilvers, Klimo Kents, and VTL stereo 75/75 when driving both old and new Quads. Plenty of midrange detail "but not at the expense of

textural liquidity," timbral accuracy, and excellent soundstaging with a "feeling of precision and solidity about image outlines and timbres." The Anarchist feels that DO correctly described the Kebschull's strengths, but points out that its low power and limited ability to drive some awkward loudspeaker loads to any respectable level will make system matching very critical. (Vol.12 Nos.6 & 10)

Meitner MTR-101: \$3400/pair

Beautifully styled all-FET monoblock with "Floating Charge Current" power supply. Excellent dynamic contrasts, well-controlled, tight low frequencies, if, ultimately, not quite the overall authority of a Class A design. Would appear to give its best in an all-Meitner system. AB reports that current production is better than the vintage reviewed. (Vol.11 No.6)

Muse Model One Hundred Fifty: \$1900/pair

Powerful and well-constructed MOSFET design from a pro-sound company that sounds on the upfront side of neutrality without losing the ability to present a recording's musical values intact. "Tight, well-controlled bass and a very natural, liquid midrange," said Robert Harley. (Vol.13 No.1)

Music Reference RM-9: \$2450

The price quoted refers to the version outfitted with EL34 output tubes; KT88s add \$300 to the price but improve the performance significantly, thought DO of this stereo Roger Modjeski design. With less of a sonic signature than the KT88-equipped Quicksilver, the RM-9 "does very little to interfere with the essence of the music," and the adjustable gain/feedback feature means that the amplifier can, to an extent, be "tuned" for a particular loudspeaker. (Vol.12 No.12)

Quicksilver: \$1850/pair ☆

KT88 output tubes eliminate a residue of glare in the upper mids, giving more of a "see-through" quality. The Audio Anarchist found the mono Quicksilvers to be ideal with the Quad ESL-63s. Others have found them to work beautifully in a lot of low-power situations: reports from the field suggest that the Quicksilver is a happy choice for driving Vandersteen 2Cis as well as Acoustats of various vintages. Wonderfully tube-like, superb, tonal-standards-setting midrange; can drive low impedances due to an excellent output transformer; but low frequencies still rather soft and ill-defined in the classic tube amplifier tradition. *Stereophile's* reviewers are divided on the Quicksilver's merits. LA feels that, despite the Quicksilver offering an overall "pleasant" sound, it is still a "low-resolution" design. "It just doesn't cut it in the bass," says DO, "and the amp is soft and muted on top." DO concluded his review by pointing out that the Quicksilver has too much of an old-fashioned sound for a Class B recommendation in these days of highly neutral amplifiers. GL, however, disagrees strongly with both LA and DO, feeling that the Quicksilvers should remain in Class B on musical grounds: "It doesn't do anything to actively interfere with the music." Extraordinary long-term reliability for a tube design, Mr. Tellig parenthetically points out. (Vol.7 No.3, Vol.8 Nos.2 & 4, Vol.12 No.11)

Vacuum Tube Logic 100W Compact Monoblock: \$2650/pair

A rather forward midrange is allied with excellent bass control for a tube design, and clean highs. Dynamics a little more limited than the 100W rating would imply.

Conservative operating conditions for its four EL34s should endow this VTL monoblock with long tube life. (Vol.11 No.11)

C

Adcom GFA-555: \$750

Dropped from "Recommended Components" due to a lack of recent auditioning, the popular and powerful '555 is reinstated following *Stereophile's* purchase of a 1989 sample. Low frequencies are extended and tight, with considerable weight and authority; soundstaging is wide and deep; and the midrange is neutral. It should be noted, however, that the '555 has a somewhat brittle, even "gritty" treble compared with, say, the B&K ST-140, Forté 1a, or VTL 100W monoblocks, according to JA and GL. This both lends the sound an slightly "artificial" cast overall, and will mean a lack of sympathy with speakers having exaggerated high frequencies. Less powerful and less expensive GFA-545 reported as having a more friendly treble balance, but this has still to be confirmed. (Vol.8 No.4, Vol.12 No.12)

Bedini 150/150 Mk.II: \$1000

An early sample of this solid-state amp failed to impress, but the Mk.II revision proved an exceptional performer with dynamic loudspeakers, matching the low-frequency performance of the no-longer-recommended Eagle 2A with a considerably greater degree of transparency and neutrality. Tonality is somewhat "dark-sounding," according to DO. (Vol.11 No.2)

Classic Audio CA 260: \$1299

Available exclusively by mail order, this beautifully constructed, dual-mono, FET-driver/tube-output, limited-edition hybrid was designed by George Kaye, once of NYAL, and features genuine McIntosh output transformers. Somewhat dark in sound, but "within the context of... Class C... I can't think of a more musical performer," said DO. (Vol.12 No.5)

Conrad-Johnson MV-50: \$1685 ☆

Expensive for Class C—unavoidable with a tube amplifier—and not quite transparent enough to make it into Class B. Classic tube sound, with an under-controlled bass, but also a quite superb midrange and lower treble, which happen to be the most critical regions for *music* reproduction. Very liquid. The antithesis of grainy sound. (Vol.9 No.2, Vol.10 No.8)

Discrete Technology LS2A: \$1250 ☆

More musically natural than the earlier version of PS Audio 200, and a warmer balance than the Adcom GFA-555, the solid-state Distech is less powerful than either. A touch of highest-end sound with a taste of tube quality for \$1250. Latest "A" version has upgraded components and can be identified by new faceplate. (Vol.10 No.2)

Forté Model 1a: \$1100

The original Model 1 was too dark-toned to merit recommendation, but the "1a" revision is dramatically more open-sounding. Class-A operation means that it runs hot. A considerable break-in period aside, the 1a offers a natural tonality, detail without exaggeration, bass drive without boominess, and only gives up a little precision and bass impact to the Class B competition. Soundstaging, in particular, is wide, deep, and accurate. A best buy, even despite its recent increase in price. (Vol.12 Nos.8 & 12)

Hafler XL-280: \$675 ☆

Though JGH doesn't agree with the claimed neutrality of this solid-state model, finding it a little dry and not quite as sweet as he would like, he still felt that it had "as nice a high end as any solid-state power amplifier in its power class." Excellent performance for a modest price. (Vol.10 No.1, Vol.11 No.7)

Kinergetics KBA-75: \$1495

Powerful, silent-running, fan-cooled, class-A design that, with the exception of a slightly dry upper midrange, has very little editorial effect on the music, in particular lacking any high-frequency glare. Doesn't appear to be cramped by any particular loudspeaker, handling dynamics, electrostatics, and hybrids with aplomb. Restricted soundstage depth keeps this relatively modest-priced amplifier from attaining a Class B recommendation. (Vol.13 No.1)

Linn LK280: \$1495

Representing a considerable improvement over its predecessor, the LK2, this hot-running, almost dual-mono power amplifier (only the power transformer is shared between channels) is unusual in having fully regulated power supplies for the output stages. It offers an authoritative sound, with a more neutral treble than, for example, the Adcom GFA-555, but can really only be recommended for use with the LK1 preamplifier, due to its very low input impedance (3k ohms) and idiosyncratically wired XLR input connectors. (Vol.12 No.7)

NAD 2600A: \$799 ☆

Lively, upfront sound, possessing excellent impact and solidity, with "beefy" low frequencies. High frequencies dry, but good value for money considering the high (150Wpc) power and excellent dynamic headroom available. A "clean" sound, according to DAS, who also felt it not to have as much impact as JGH suggested it should. (Vol.10 No.2, Vol.11 No.8)

PS Audio 100 Delta: \$1195

Actual version reviewed was the 100C, the Delta being cosmetically different. GL felt the PS 100C to be able to handle any kind of loudspeaker load with ease: "bass was full, tight, and extended... treble was pristine," he wrote, after auditioning the amp with Spica TC-50s. The Audio Anarchist got less satisfying results with the PS Audio driving Martin-Logan Sequel IIs, the sound becoming rather brittle, which suggests that the 100C should be auditioned with the speakers with which it is to be used. (Vol.12 Nos.9 & 12)

PSE Studio IV: \$850

A lot of watts for the money from this modest-looking solid-state amp, coupled with a detailed, dynamic, neutral, yet never over-aggressive sound. "Small in size, but big in sound," enthusiastically wrote GL in his review, commenting on the PSE's ability to present the power of bass instruments without blurring the leading edges of their sounds. (Vol.13 No.1)

C (Integrated Amplifiers)

Naim NAIT 2: \$795

Somewhat expensive, almost totally lacking in features, and very low powered (21Wpc), the diminutive NAIT 2 would appear to be poor value for money. But when you listen to it, it offers much better sound than the Class D integrated amplifiers, featuring an expansive

soundstage with a smooth, natural tonal balance and a liquid midrange. Lacks bass authority, however, low frequencies being neither extended nor tight, and the line stage is somewhat rolled-off in the highs. (A slightly tilted-up treble in the RIAA response ensures that LP reproduction is more neutrally balanced.) Best suited for sensitive minimonitors like the Celestion 3 and Monitor Audio Monitor 7. Sam Tellig thinks the NAIT 2 is "the best integrated amplifier he has heard." (Vol. 8 No.5 original version, Vol.12 No.9, Vol.13 No.4)

D (Separates)

Adcom GFA-535: \$330

"Extraordinarily clean, detailed, and musical. . . Far more detailed than I would ever imagine a \$300 amplifier could be," said Sam Tellig of the '535's sound when this budget amplifier drove his ESL-63s. While not a powerhouse, it works well with speakers which usually demand a more expensive amplifier. Only negative point is the nonstandard output connectors. Some feel that the inexpensive 535 is actually the best-sounding Adcom amplifier—"Amazingly good" at its price, says Peter Mitchell. (Vol.10 No.8)

B&K ST-140: \$498 ☆

The 105Wpc MOSFET '140 costs little enough to make it into Class D, but the sonics, after extensive auditioning, convince the Anarchist that it belongs in Class C. LA disagrees, feeling that it should be "high Class D," and after his auditioning, JA also disagrees. The ST-140 features deep but not extraordinarily powerful (if mushy) low bass, and a tube-like tonality with a smooth, sweet midrange. Despite the Anarchist finding the '140 not to have "too much MOSFET mist," the amp's high frequencies can become a little tizzy, thought JA, while GL thought disc surface noise to be somewhat accentuated. Latest production features a detachable IEC AC cable and gold-plated RCA input jacks. An important caveat to our continued recommendation of the ST-140 concerns the ability of the current version to drive real-world loudspeakers. With loudspeakers whose impedances drop much below 8 ohms, the amplifier is thermally limited from delivering much power without a significant increase in distortion, with a resulting hardness to the sound. More powerful ST-202 (\$648, reviewed in Vol.10 No.8) has very similar sonic signature, according to the Anarchist, and is therefore to be recommended with a much wider range of loudspeakers than the '140. (Vol.7 No.4, Vol.10 No.7, Vol.11 No.10 mono version, Vol.12 Nos.4 & 12, Vol.13 No.1)

Parasound HCA-800 II: \$365

Mk.II version of this budget amplifier, said to address sonic problems found in the original review, has upgraded parts, including polypropylene capacitors. More than respectable performance in view of this amplifier's cost, felt TJN, offering a viable alternative to the similarly priced Adcom GFA-535, though he felt it to sound a little closed-in when compared with Class C models. Built-in level controls mean that it can be used direct with a CD player. Revised version on the way. (Vol.11 No.2, Vol.12 No.2)

D (Integrated Amplifiers)

Arcam Alpha 2: \$350

Inexpensive, the Alpha 2 sounds dry and bright in the treble, with a lack of soundstage dimension and "wooden" low frequencies, according to RH. Neverthe-

less, it represents a considerable improvement in sound quality compared with the mass-market Oriental norm, and therefore scrapes a recommendation. (Vol.12 No.9)

Audiolab 8000A: \$695 ☆

A little expensive for Class D, the full-featured Audiolab doesn't compete on absolute sound-quality grounds with the not-much-more expensive NAIT 2 or the less-expensive Creek 4140 S2, said RH in his review. It is considerably more powerful than either, however, and has impressively tight, well-defined low frequencies. Many will prefer its more upfront, more analytical balance, particularly with inherently dark-sounding loudspeakers. (Vol.9 No.1, Vol.12 No.9)

Creek 4140 S2: \$550

Excellent soundstaging, with a sense of air and openness, coupled with "satisfying" bass reproduction, leads to a recommendation for this inexpensive British integrated. Top octaves a little forward, but not to the extent of either the Audiolab or Arcam models. (Vol.8 No.5 original version, Vol.12 No.9)

K

Audio Research Classic 150 and Classic 60, Manley 500 monoblock, Air Tight ATM-2.

Deletions

Counterpoint SA-12 replaced by SA-100, Krell KSA-200 replaced by KSA-250, Vacuum Tube Logic Dual 75 replaced by Dual 90, Mouif MS100 replaced by new version at 1990 WCES, PS Audio 200CX discontinued, Carver M1.0t, Nestorovic NA-1, and Onkyo Grand Integra M-508 not auditioned in too long a time.

Speaker Systems

A

Editor's Note: The argument among *Stereophile's* contributors as to whether the B&W 801 Matrix—see entry—should be included in Class A leads me to emphasize to prospective purchasers of Class A loudspeakers that three of the following four models will make great demands that the amplification and source components also be of Class A caliber if the sound is not to be compromised.

Apogee Diva: \$8250/pair

That classic, idiosyncratic Apogee balance—full bass and depressed treble—doesn't detract from AB's feeling that this three-way, full-range ribbon has the finest ability to communicate the essence of a musical event that he's ever heard. Seamless transitions between the drivers, vivid, stable imaging that envelops the listener, and an ease in handling wide-range, dynamic peaks lead to a Class A recommendation. Dedicated electronic crossover, the DAX, leaves the matter in no doubt. West Coast price: \$8400/pair. (Vol.11 No.8)

B&W 801 Matrix Series 2: \$5000/pair

A complete redesign of the classical recording industry's standard monitor loudspeaker—aluminum-dome tweeter, extension to 19Hz with the help of a line-level equalizer, and B&W's patented "Matrix" enclosure, where the cabinet is effectively transformed into a solid body—has resulted in a moving-coil speaker capable of competing with the best planars. As LL put it, "a true musician's reference transducer." Strengths include excellent low-frequency definition, a highly detailed midrange, and unrestrained dynamics. Bass-alignment

filter now included in purchase price. Best used with stands: we have had good results with the Sound Anchors and with the wooden, sand-filled Arcicis. (Also see Vol.12 No.10, p.45, and Vol.13 No.2, p.217, for discussions of a simple crossover adjustment that improves the sound.) There is strong disagreement among *Stereophile's* reviewers whether the 801 is a true Class A loudspeaker system. LL makes a strong case that it should be on the grounds that its flaws are nowhere near as extreme as the other three Class A speakers, meaning that it is more likely that an 801 owner will get Class A sound than owners of the other three recommended models. This is particularly true if the bass filter is replaced by one of the after-market models, such as those from Discrete Technology and Denver dealer Listen-Up. AB, however, strongly feels that the 801 doesn't come close to the Apogee Diva in overall recreation of a musical experience, while DO (without having heard the 801 in his own system, it should be noted) is scornful of the notion that a dynamic speaker can belong in the same class as the electrostatic Sound-Lab. All of which suggests that those with wallets capable of stretching to accommodate a putative Class A loudspeaker should listen to the 801, then make up their own minds. (Vol.10 No.9)

Infinity IRS Beta: \$12,000/pair

Full-range, five-way, electrodynamic area-drive system with separate stereo, moving-coil subwoofer towers and servo/crossover electronics. Capable of being finetuned almost *ad infinitum*. At its best with tube electronics on the panels (ARC preamp and VTL 300 and 500 power amplifiers, for example), which will ameliorate a tendency for the upper octave to be somewhat exaggerated in level, and needing a big room to allow sufficient distance for the sound from the individual drive-units to properly integrate, the Beta is the best speaker JGH has auditioned in terms of transparency, harmonic accuracy, and the ability to convey the dynamic scale of a recording. (In this last respect, the Beta is the best speaker system JA has auditioned.) Extreme versatility offered by low-bass controls helps in getting flat, high-level, extended (to below 20Hz), in-room LF response, provided that a beefy amplifier (Krell, Mark Levinson, etc.) is used. Lower treble can sound rather "zingy" with the wrong ancillaries, but this can be significantly ameliorated by covering some of the tweeter and supertweeter radiating areas with tape. Imaging precision on the original review samples was less good than expected, due to a slightly out-of-spec crossover and drive-units on one side. Infinity promises that good QC will be a major concern of theirs from now on; to judge by the most recent samples to be auditioned in Santa Fe, this does appear to be the case, though a thorough reread of the "Followups" in Vol.12 Nos.1, 6, & 12 is a prerequisite, as is in-store audition, prior to making a purchase decision. (Vol.11 No.9, Vol.12 Nos.1, 6, & 12)

Sound-Lab A-3: \$6950/pair *

JGH's preferred reference loudspeaker, this big, curved-panel, full-range electrostatic features a stunningly natural midrange. Warm-balanced, the treble is sweet and musical. DO feels the A-3 to be the best electrostatic speaker he has heard, though he does point out that its imaging is less well-defined than that typical of a good minimonitor. Sensitivity and dynamic range are on the low side. Latest version has a revised HT power supply, resulting in slightly higher sensitivity and an

improved dynamic range. The previous Class B ranking for this speaker was due to JA feeling that it persistently lacked mid-treble transparency, being rather aggressive and grainy in this region. Recent auditioning with the VTL 300 amplifiers revealed that this had much more to do with the solid-state amplifiers with which JA had heard it in JGH's system, leading to a consensus that the A-3 does deserve a Class A recommendation after all. Latest version features "wings" to lower the baffle cancellation frequency and thus extend the bass. (Vol.9 No.6, Vol.11 Nos.6 & 11)

B

Editor's Note: I make no apologies for the wide variety of loudspeakers listed in this group. Polling *Stereophile's* reviewers resulted in a total lack of consensus, implying that all the following speakers will, in the right room with the right ancillaries, give true high-end sound. Following the protests of many readers and, more importantly, pressure from JGH that small speakers should automatically be excluded from Class B because of their lack of LF extension, I have split Class B into two sections—full-range and minimonitors. To be included in Class B, a small speaker has to be at least as good in every other area as the full-range competition. (Note that all the full-range recommendations, with the exception of the Quad and Vandersteen, are floor-standing models.)

B— Full-range

Magneplanar Tympani IVa: \$3750/pair *

Offering excellent performance for their price, the IVas have exceptional high-frequency performance and a delicate midrange with excellent harmonic accuracy. Though not as fussy as the Scintillas, room considerations and placement are more important than with most speakers for proper imaging. Bass is good, but requires an amp with high current capability. Most serious weakness is a lack of impact, particularly in the lower midrange. (Vol.8 No.6)

Magneplanar MGIIa: \$2195/pair *

Hard to set up, requiring more than the usual love and care, but uncolored sound. Fundamentally easy to drive, but does need plenty of volts. Works beautifully with ARC amplifiers. Tonally very neutral (apart from a tendency to brightness in smaller rooms, which can be alleviated by inserting a 1- or 2-ohm resistor in ribbon tweeter feed), and a degree of "Maggie slam" in the upper bass. Coherent, transparent, musically satisfying, excellent value for money. JA and MC recommend this speaker highly; JGH cannot, based on its failing his "goosebump" test, albeit when compared with more expensive speakers. (Vol.7 No.4, Vol.9 No.4, Vol.10 No.1)

Martin-Logan Sequel II: \$2500/pair

The revised version of this bi-wirable electrostatic/dynamic hybrid is a paradox, as from the midrange on up, it offers seamless imaging, natural tonal colors, and clean, grit-free highs, almost reaching Class A quality in these regions were it not for a definite dynamic threshold above which the sound becomes considerably more hard and brittle. But from the lower midrange on down, to an extent *very* dependent on the power amplifier used *and* on the chosen listening axis, the sound can be anemic, leaving the mids and highs unsupported. This leads to a "threadbare" overall balance that particularly irritated the Audio Anarchist,

though we understand that listening to the speakers from more than 15' ameliorates this problem somewhat. As supplied, the woofer and the electrostatic panel have the same acoustic polarity, which is strange in view of the symmetrical 12dB/octave crossover slopes—DO found the sound to be significantly improved for close-seated listeners if the woofer polarity is inverted. To an even greater extent than usual, prospective Sequel purchasers should listen for themselves with their chosen ancillaries before making any decision. (Vol.12 No.1, original version; Vol.12 Nos.8, 9, & 10)

Meridian D600 remote-control digital-input active loudspeaker: \$5490/pair

Unique two-way from England includes power amplifiers, electronic crossover, optical and coaxial digital data inputs, 4x-oversampling digital filter, and 16-bit DACs, as well as a line-level analog input. Versatile remote control offers control of analog and digital input switching, level, channel balance, bass alignment, and tonal balance. All that is needed to make music is a CD transport. Speaker remote control also controls Meridian's 207 and 208 CD player/preamps and the 204 FM tuner/timer. Intrinsic tonal balance slopes down from bass to treble, though this is offset by an astonishing degree of clarity and the ability to present a wide, deep, detailed soundstage. Ultimate dynamic range limited by some midrange congestion and lower treble harshness that sets in above 100dB. (Vol.12 No.11)

Mirage M-1: \$4000/pair

Tall, dark, and handsome bipolar design from Canada that resembles, though not in sonic signature, the B&W 801 and Vandersteen 2Ci, in that its fundamental sound quality seems much less sensitive than usual to the characteristics of the amplifier with which it is coupled. The bass is extended, the extreme highs perhaps a little wispy, but LA found the M-1 to be exceptionally well-balanced tonally, with the rare ability to draw the listener into the music even at low levels. Bi-wired, bi-ampable version: \$5000/pair. (Vol.12 No.6)

Nelson-Reed 8/04B: \$3250/pair

One of the most moving-coil loudspeakers to get a recommendation from J. Gordon Holt, the three-way, reflex-loaded 8/04B combines high sensitivity and astonishing dynamic range with deep, tight low frequencies and well-defined imaging. Overall balance is somewhat forward, while treble is not quite up to the standard set by other Class B contenders. (Vol.11 No.4)

Ohm Walsh 5 Revised: \$5000/pair

Unusual in being the only omnidirectional loudspeaker to be recommended, the Ohm Walsh 5, with its unique inverted-cone, almost-full-range driver, has clarity and transparency to rival the best minimonitors, according to DO. Bass, with near-wall placement, is deep and full, coloration levels are low, and the soundstaging, though very sensitive to room positioning, is excellent. (Vol.10 No.4, Vol.11 No.8)

Quad ESL-63 US Monitor: \$3990/pair ☆ (stands necessary)

Very musical sound, with very low midrange coloration, natural, precise imaging, excellent soundstaging, and very good resolution of detail when listened to on the optimum axis. The highs roll off considerably off-axis, which can lead to a dull, lifeless sound in over-

damped rooms. The low treble is a little resonant, which bothers some listeners (LA) more than others (ST, LG, DO). Low frequencies are tight but not very deep, while maximum-volume capability is somewhat limited. (In Santa Fe, with its 7000' altitude, this is a strict 97dB on peaks.) Later models are less dry-sounding than early production. Can really come alive with the right amplifier, and benefits from modifications, most especially suitable stands (we have found Arcicis to work well). Aficionados should investigate the Celestion dual-mono subwoofers, which, being dipoles, stand a good chance of integrating in-room with the dipole Quads, while 7AS's HP has achieved excellent results mating the Quads with the woofer panels, also dipoles, from the Tympani IVa. (LG disagrees, feeling that the omnidirectional, servocontrolled Velodyne ULD-18 gives the optimum match.) The current version, the "US Monitor," has a stiffer steel frame, a revised protective grille, and a reduced plate gap for higher sensitivity. (Vol.6 Nos.4 & 5, Vol.7 Nos.2 & 7, Vol.8 No.3, Vol.10 No.1, Vol.12 Nos.2 & 6)

Snell Type A/III Improved: \$4680/pair

Ultraflat frequency response is coupled with a superb coupling of the low frequencies with the room acoustics, which leads to extended, powerful lows. Replacement of the original's Audax tweeter with a cleaner-sounding Vifa unit leads to the "Improved" being added to this large floor-standing speaker's designation and a strong recommendation from Larry Greenhill, who feels it should be a Class A contender. A lack of treble transparency coupled with somewhat restricted image depth, however, mean that high Class B is probably the most suitable rating. Bi-amplification via the dedicated electronic crossover from db Systems (#602) significantly improves performance. (Vol.7 No.6, Vol.9 No.3, Vol.10 No.6, Vol.13 No.3)

Spica Angelus: \$1275/pair

The first floor-standing model to come from this New Mexican manufacturer, this idiosyncratically styled speaker has much in common with the TC-50, including a superbly defined, if lightweight, bass register, a basically neutral, if occasionally "cardboardy" midrange, and the ability to throw an astonishingly accurate soundfield. Treble transparency is a little lacking when compared with the best Class B speakers, but still one of the best loudspeakers The Audio Anarchist has heard. LA demurs, due to the Angelus's slight departure from midband accuracy, while Martin Colloms points out that the speaker's unusual styling results in a rather deeper than usual "floor dip" in the lower midrange which can lend the bass a rather disembodied character. (Vol.11 No.2, Vol.13 Nos.1 & 4)

Synthesis Reference System: \$7350/system

Close to achieving a Class A recommendation, this four-enclosure dynamic system was felt by JGH to have a slight lack of energy in the midrange which robbed orchestral crescendos of their full power. Nevertheless, extraordinarily precise yet spacious imaging and the deepest, smoothest bass he has heard in his listening room led JGH to label the SRS "superb," almost rivaling his beloved Sound-Lab A-3s in overall performance. (Vol.11 No.8)

Thiel CS3.5: \$2450/pair ☆

One of the finest US-designed box speakers, the 3.5 is the result of a long collaboration between designer Jim Thiel and the drive-unit manufacturers. Combines

superb transparency and imaging with excellent low-bass extension—an active equalizer is used—though it relies on music having a normal spectral balance if the woofer is not to run out of excursion capability. (Organ recordings with sustained high-level pedal passages are to be avoided, for example.) A balance opposite to that of the Apogee Duetta, with a slight tendency to a tilted-up HF, makes careful system matching crucial. Its Dynaudio tweeter is perhaps outclassed, when it comes to clarity, by the SEAS unit that Thiel uses in the new CSI.2, but the design's real Achilles Heel appears to be the equalizer, which compromises HF neutrality somewhat and is often outclassed by the electronics with which the 3.5 is used. (Vol.10 No.1, Vol.12 No.1)

Vandersteen 2Ci: \$1195/pair ☆
(stands necessary)

After 12 years of continual refinement, an excellent full-range box speaker. Balance of the 2C was a little rolled off in the highs, according to AHC, but the latest Ci revision has full measure up to 16kHz or so (though it lacks ultimate transparency in this region). Superb delineation of recorded detail, a neutral, tuneful midrange (apart from a degree of character in the presence region), and low frequencies that are extended without the bass becoming too exaggerated, lead to a borderline Class B rating, but the fact that it would seem impossible to get anything less than a very musical sound from this speaker no matter what ancillaries with which it is used, mandates a confident recommendation. The Audio Anarchist demurs, feeling the Spica Angelus is a better buy overall, the 2Ci being too Vanderweet. \$260/pair dedicated Sound Anchor stands push the speaker's performance envelope further. (Vol.9 No.6, 2C; Vol.12 No.5, Vol.13 No.1, 2Ci)

B—Minimonitors

Acoustic Energy AE1: \$1500/pair
(stands necessary)

Tiny reflex box with metal-dome tweeter and unique metal-cone woofer. Redefines the art of miniature speaker design, according to JA, due to its high dynamic range capability, electrostatic-quality treble, and see-through, if somewhat forward-balanced, midrange. Now supplied ready for biwiring with gold-plated binding posts. (Vol.11 No.9)

Celestion SL600Si: \$1999/pair ☆
(stands necessary)

Though lacking the bottom octave-and-a-half of bass extension, and possessing slightly depressed mid- and extreme treble ranges that make system optimization difficult, the SL600Si combines lower-midrange transparency and holographic imaging (areas where it sees off most of the moving-coil competition) with a musical, if dark-sounding, balance unique for a box speaker. Worth using with high-end electronics. Latest Si version has revised crossover layout to allow biwiring and is more transparent in the treble, though a touch of midband congestion remains. Good stands, such as Celestion's own \$300/pair 18" SLSis, are mandatory. (Vol.10 No.2, original version; Vol.12 No.5)

Celestion SL700: \$2999/pair (stands included)
Very expensive for a small speaker, price includes excellent stands. Improves over the SL600Si in the areas where that speaker excels, and sets new standards for a box loudspeaker, both regarding transparency com-

bined with neutrality and upper-bass clarity. In contrast with the SL600Si, overall balance is rather on the bright side—a little like a moving-coil CLS—which makes demands on careful system matching. Auditioning of a current production version (Spring '90) reveals much better integration between the tweeter and woofer, though the tradeoff appears to be a less involving sound overall. Though the SL700 is deficient in low bass in absolute terms, rate of rolloff in-room is slow enough that it almost qualifies for inclusion in the "full-range" Class B category. But only almost. (Vol.11 No.9)

C

Acoustat Spectra 11: \$999/pair

Inexpensive floor-standing hybrid which combines a single Acoustat electrostatic panel with a moving-coil woofer. On the optimum listening axis, which is too high for a listener sitting in a normal chair, a clean treble and midband are offset by a slightly dull balance overall, while there is a bit of character in the presence region and the bass can be a little excessive in level in too small a room. "Unfailingly musical," said TJN, however, of this "entry-level high-end" speaker system. (Vol.13 Nos.1 & 2)

Acoustat Spectra 22: \$1850/pair

The Spectra 22 uses two Spectra 11 electrostatic panels with electronic contouring applied to reduce the effective radiating width with frequency, thus minimizing that bugbear of wide-panel electrostatics, limited HF dispersion. With amplifiers of 100W output or more, the Spectra 22 throws a wide, deep soundstage, though DO felt the mids to be a little recessed. Low bass is missing, but SPW-1 dual-mono passive woofer module (\$600) usefully extends response to below 35Hz. (Vol.12 No.10)

Epos ES-14: \$1195/pair (stands necessary)

A speaker that has long been a Cheapskate favorite, the ES-14 seems to be typical of small British speaker designs in that it features a metal-dome tweeter in a well-braced cabinet with a minimal crossover and the option for bi-wiring. The result is a superbly coherent sound that, according to TJN, kept drawing him into the music. Ported bass is both a little light weight and somewhat soft, but the upper bass and midrange are very low in coloration, with excellent transparency. Matching stands are available for \$200. (Vol.11 No.6, Vol.13 No.1)

Image Concept 200: \$1000/pair

"The deepest bass per dollar," thought JA of this elegant, floor-standing, two-way design from Canada. An otherwise excellent soft-dome tweeter is a little sizzly in the upper treble, with a slight tendency for the sound to harden at very high levels. Sensitivity on the low side, which, coupled with the low impedance, will mean more careful amplifier matching than usual. Excellent image definition, however, and overall, an impressively neutral balance. Good things are coming out of Canada these days, perhaps due to the excellent facilities offered to designers by the Canadian National Research Council. (Vol.11 No.8)

Kindel Purist LT: \$895/pair

Top octave a little soft and an apparent lack of weight in the lower midrange of this floor-standing loudspeaker are offset by low levels of coloration and respectable LF extension. Excellent performance at the price. (Vol.11 No.2)

Magnepan MG2.5/R: \$1695/pair

A two-way featuring borderline Class B performance in the right rooms with the right ancillaries, though its dipole radiation pattern, tendency to midrange "bloat," and less-than-seamless blend between the Magneplanar panel and the ribbon tweeter make system matching more problematic than with the similar three-way MG11a. A taste of true high-end sound, however, at an affordable price. (Vol.11 No.6)

Monitor Audio R952 Gold: \$1599/pair

High Class C performance with the right ancillaries from a floor-standing English loudspeaker equipped with twin woofers and a fine aluminum-dome tweeter (anodized a gold color in the latest version). Coloration levels are mild, apart from a somewhat lively box, though the balance is a little forward in the presence region, which is particularly unkind to CD. This is offset by highish sensitivity and an astonishing transparency in the midrange and treble, presumably due to the minimalist crossover. Sealed-box bass is lightweight but articulate, with reasonably good extension. (Vol.11 Nos.1, 2, & 5)

PSB Stratus: \$1500/pair

A fruit of the excellent facilities provided to the Canadian loudspeaker industry by the NRC facility in Ottawa, the first sample we received of the Stratus was found by JGH to have a veiled sound, lacking impact, despite being "eminently listenable." The second sample, however, which conformed to the manufacturer's spec, was impressively neutral, with excellent dynamic performance. (Vol.11 No.5)

Rauna Balder: \$1300/pair

Unusually styled two-way floor-standing design with cast-concrete enclosure (which can be painted to match room decor) and a rear-mounted port. Though said to be a transmission line, bass loading is more akin to reflex and a little loose. High treble is dull, but apart from those minor defects, this speaker has a superbly neutral midband and clean mid-treble. (Vol.11 No.6)

Rogers LS7t: \$949/pair (stands necessary)

Well-finished two-way, reflex-loaded dynamic speaker with a classic "British" balance—uncolored midband, superb imaging, and a rather ripe upper bass. Good stands are mandatory, as is placement well out in the listening room. Sounds best with grille on. Tendency to hardness in the lower treble will make demands on matching electronics. (Vol.12 No.12)

Rogers LS3/5a: \$649/pair (stands necessary)

A major revision of the crossover in 1988 was meant not so much to "improve" this venerable design (first seen and heard in 1975!) as to bring production back on target. Still somewhat compromised concerning overall dynamics and HF smoothness and clarity when compared with Class B miniatures such as the Acoustic Energy AE1, Celestion SL600Si and SL700, and having a distinctly tubby midbass, the 1989 version of the LS3/5a still has one of the least colored midbands around, throws a deep, beautifully defined soundstage, and has a slightly sweeter top end, with less nasality apparent than it used to have. The sound, however, is sometimes not as musically involving as it could be. The LS3/5a is also being manufactured by Sendor, Harbeth, and Goodmans, and differences among any current LS3/5as should be cosmetic only. (Vol.3 No.12, Vol.4 No.1, Vol.7 No.4, Vol.12 Nos.2 & 3)

Snell Type Q: \$780/pair (stands necessary)

Small speaker which successfully takes on the British on their own ground. An open, airy quality, excellent delineation of soundstage depth and width, low levels of midrange coloration, though treble is perhaps a little unforgiving compared with, for example, the Epos ES-14. Matching stands cost \$120/pair. (Vol.11 No.6)

Spica TC-50: \$550/pair ☆ (stands necessary)

The coherence and imaging of the mid- to upper mid-range rival the Quad and LS3/5a and would be considered excellent in a speaker of any price; at \$550 they're a steal. Only significant drawback is the absolute need for the listener to be sitting with his or her ears on the optimum axis, the sound otherwise becoming too lean. On the optimum axis, the high frequencies roll off above 16kHz, the midband is rather forward-balanced, and the low end is designed to be very controlled down to the lower limit of about 55Hz. This latter aspect makes the TC-50 perfect for matching to a subwoofer—a pair of Kinergetics BSC-SW100s with their stands and matching amplifier are ideal. Easily damaged by amplifier overload. Latest version features a cross-brace between front and rear panels. Price is for oak or walnut veneer; black finish \$50/pair extra. (Vol.7 Nos.2 & 3, Vol.9 Nos.5 & 7, Vol.11 No.1, Vol.12 No.10)

SR Bolero: \$1549/pair (stands necessary)

This Swiss reflex-loaded minimonitor's good dynamics, fundamentally neutral tonal balance, and excellent upper-bass definition are let down by the rather fizzy highs characteristic of its Focal tweeter, which also reduces image depth in this region. Works best with tube amplification. Matching Forté stereo woofers increase dynamic range but at the expense of upper-bass smoothness. (Vol.12 No.4)

Synthesis LM-210: \$1195/pair

Excellent dynamics and very transparent sound from this floor-standing model, coupled with a good standard of neutrality. (Vol.10 No.8)

TDL Studio 1: \$1445/pair (stands necessary)

Midband and upper bass have a little too much character in absolute terms, felt JA, but the transmission-line Studio 1 features excellent bass extension for what is basically rather a small two-way loudspeaker. Dynamics are somewhat limited, but the Studio 1 features a very clean treble and excellent soundstage presentation. Matching stands cost \$180/pair, but should be considered essential in order to place the listener's ear on the optimum axis, the sound being otherwise too hollow-sounding. (Vol.13 No.2)

Thiel CS1.2: \$1090/pair

Borderline Class B, lacking only ultimate dynamic range. This modest-sized floor-standing speaker offers an outstandingly detailed sound, with superbly precise if a little shallow soundstaging, a neutral midband, and a less critical treble balance than the older CS2 (although VTL monoblocks produced rather a "hissy" sound). ST reports that the Electrocompaniet AW100 sounds terrific with the 1.2s. Low frequencies are full, but only become too ripe when used with, say, a tube amplifier, states JA. ST demurs, feeling that the bass was a little lightweight, which might suggest some room dependency in the low-frequency balance. A best buy at the price, nevertheless. (Vol.12 Nos.1, 6, & 11, Vol.13 No.1)

Thiel CS2: \$1650/pair ☆

The CS2 is more amplifier- and front-end-fussy than the other two Thiel speakers—anything too extended or peaky preceding the speakers will make the sound too relentless. It will be harder to get the CS2 to perform at its best than, say, the CS1.2, but in the right system the '2 will offer remarkable coherence, excellent imaging, a natural midrange, and extended highs. (Vol.8 No.6, Vol.12 No.1)

D**Cambridge SoundWorks Ambiance: \$218/pair (stands necessary)**

Tiny, well-finished stand-, wall-, or shelf-mounted two-way speaker available only via mail-order (\$&H add \$10 to the quoted price). (Full customer support provided.) Midrange rather forward in balance, accentuated by rather shut-in but lispy highs and a necessarily limited bass extension. The mids also lack clarity. Nevertheless, the Ambiance offers a surprisingly musical sound overall, and can be recommended for second-system use or as ambience speakers in a video-surround setup. (Vol.13 No.3)

Celestion 3: \$269/pair (stands necessary)

Intended to be sited near a rear wall on a stand or shelf, which usefully reinforces its limited low-frequency output, the diminutive 3 has a rather "cardboardy" coloration in the midband but a clean, open-sounding treble unusual in this price range. (Vol.12 No.10)

Magneplanar SMGa: \$575/pair

Musical sound, with relatively well-extended low frequencies, considering the size of the panel. Not that transparent in the midband, and high frequencies recessed, but a musical bargain nonetheless. (Vol.10 No.7)

Monitor Audio R300/MD: \$599/pair (stands necessary)

A forward midrange and slightly indistinct upper bass are offset by excellent imaging and a generally smooth, detailed treble. Should work well with inexpensive amplification. (Vol.12 No.4)

Monitor Audio Monitor 7: \$379/pair (stands necessary)

The Monitor 7 is "smoother through the treble than the Celestion 3, better focused, and better finished too," says the redoubtable Mr. Tellig. JA concurs, feeling that its midrange is also less colored, but points out that the 7's more peaky treble balance will be fussier regarding matching amplifiers and CD players, and adds that he finds its reflex-loaded low frequencies to be fuzzier, less well-defined, than the sealed-box Celestion's. (Vol.13 Nos.1, 2, & 3)

Paradigm 5se: \$349/pair (stands necessary)

A rather soft midbass, a slightly colored midband when compared with the better Class D loudspeakers (including the Paradigm Control Monitor below), and a typical soft-dome tweeter treble, but excellent performance at the price. A well-balanced design. Needs to be used on good stands. (Vol.11 No.1)

Paradigm Control Monitor: \$680/pair (stands necessary)

A rather loose upper bass and a cold tonal balance do not detract from this Canadian speaker's having an excellent performance overall at this price level. Neutral midband but rather shallow imaging. (Vol.12 No.12)

Rauna Freja: \$695/pair (stands necessary)

This concrete-enclosure two-way features rather a forward midband, but throws a wide, deep soundstage with low levels of resonant coloration. Verges on Class C sound quality with the right ancillaries. (Vol.12 No.1)

Rauna Tyr II: \$695/pair ☆
(stands necessary)

A small, concrete-enclosure loudspeaker with very smooth, neutral, musical balance and excellent imaging and soundstaging. A good musical buy. (Vol.9 No.2)

Spectrum 208B: \$449/pair (stands necessary)

Easy to drive and possessing excellent bass extension and a clean treble, the 208B is let down by relatively high levels of midrange coloration. (Vol.12 No.1)

K

Apogee Duetta Signature and Stage, ATC SCM50A, Hales System Two.

Deletions

British Felicity MC2 no longer available in the US, Camber 3.5A replaced by 3.5Ti, Mordaunt-Short System 442 now in Mk.II revision not yet auditioned, Quadrant Q-250 not auditioned in too long a time, Snell Type C/II replaced by quite different C/III, VMPS Tower II/R redesigned, mandating a re-audition, Wharfedale Diamond III not competitive with Celestion 3.

Subwoofers & Crossovers

Editor's Note: You will see from Dick Olsher's mini-survey in Vol.12 No.1 that true subwoofers, capable of reproducing the bottom two bass octaves at realistically high sound levels, are rare and expensive beasts. In addition, the problems of integrating one or two subwoofers with high-quality satellites are major if the integrity of the upper-bass/lower-midrange region is not to be compromised. There are no Class D subwoofers listed: we strongly recommend those trying to subwoof on the cheap to instead look at the possibility of acquiring more expensive full-range loudspeakers.

A**Threshold PCX electronic crossover: \$1600**

Available in two versions, offering either selectable crossover frequencies from 75Hz to 1602Hz or 750Hz to 16,020Hz, the PCX offers fixed 18dB/octave slopes and matches the Threshold FET-10 in appearance. Sonically the most transparent crossover DO has yet auditioned. (Vol.12 No.1)

Velodyne ULD-18 subwoofer: \$2595

(inc. crossover, amplifier, and servo electronics)

LG felt this well-finished, servocontrolled subwoofer system to offer the best bass performance he had experienced, extending his Quad US Monitor's low frequencies to 20Hz even at high levels, and adding a considerable degree of dynamic contrast. Though Peter Mitchell would agree with a Class A rating for the ULD-18, DO disagrees, feeling the Velodyne belongs in Class B due to an overall lack of absolute definition, but it is fair to note that DO derives his opinion from auditioning the Velodyne at hi-fi shows. (Vol.12 No.10)

B**Celestion System 6000: \$2999/pair (inc. crossover)**

20Hz bass extension, though not at high levels, with

excellent transient performance and dynamic range due to its using four 12" drive-units. Dipole radiation pattern makes system optimization a less thankless task than usual (Celestion can supply detailed set-up data to System 6000 owners who send the company a diagram of their room). Though expensive, not even including the need for a separate stereo power amplifier, the System 6000 is worth auditioning with both the Quad ESL-63 and the Martin-Logan CLS to endow those systems with bass extension and low-frequency power handling (though DO and LG feel that the system's fundamentally excellent performance is compromised by the quality of the line-level controller/equalizer). Note that LG feels the System 6000 to be incapable of competing with the Velodynes in terms of being able to reproduce the power of live low frequencies. (Vol.10 No.2, Vol.12 Nos.1 & 10)

Nelson-Reed 1204/P subwoofer: \$1200 each
Four 12" drive-units in an IB enclosure, with two used in stereo, gave flat extension to 20Hz with high dynamic range in Gordon's room, though with a less smooth characteristic, despite careful positioning, than the Synthesis Reference System's against-the-wall towers. "P" revision can be run in 2-ohm mode. The high-pass satellite feeds of Nelson-Reed's all-active AC-1204 electronic crossover (\$570) are veiled; the same company's PC-1204 passive high-pass unit (\$50) should be regarded as essential. (Vol.11 No.4)

Velodyne ULD-15 subwoofer: \$1795
(inc. crossover, amplifier, and servo electronics)
A smaller version of the Class A ULD-18, the '15 imposed more of a signature on the music, thought LG, shrinking his Quads' soundstage and somewhat diminishing their depth. (Vol.12 No.10)

C

Audio Concepts Saturn subwoofer: \$640/pair (kit)
Using two 12" woofers in a compound configuration, the Saturn achieves moderate extension and in kit form offers good value for money. The drive-units have sufficient dynamic range to make it worth experimenting with equalizing the Saturn's response to be flat to 20Hz. Kit w/o cabinets: \$280. (Vol.12 No.1)

Audio Control Richter Scale Series III equalizer: \$349
Versatile six-band, half-octave low-frequency equalizer and analyzer incorporating 24dB/octave crossover factory preset to 90Hz. Slightly "muffled" in sound quality when compared with the Threshold, the Richter Scale nevertheless offers the woofer fan the best chance of achieving a successful integration between the subwoofer(s) and the satellites. (Vol.12 No.1)

Cogan-Hall ContraBass 12 subwoofer: \$895
Unusually styled, the cylindrical ContraBass uses a single 12" driver firing downward in a reflex cabinet. A passive, line-level equalizer network attempts to extend the response to 20Hz, but DO felt that the octave between 20Hz and 40Hz was still too rolled-off for it to be termed a subwoofer. Nevertheless, the ContraBass's speed will facilitate matching with high-quality satellites. (Vol.12 No.1)

Kinergetics BSC SW-100 subwoofer system: \$878/pair
Kinergetics BSC SW-200 subwoofer interface

and stereo bass amplifier: \$654
Using a pair of 10" drivers per side, the Kinergetics system achieves true 20Hz extension but at the expense of a limited dynamic range. In the right circumstances, however, particularly with Spica TC-50s, it can work very well, producing a full-range sound that can be intensely musical. (Vol.12 No.1)

Sumo Samson subwoofer: \$750
Massive, large enclosure uses a reflex-loaded 15" JBL driver to give high power handling and extension to 20Hz (-3dB) when used with the Sumo Delilah crossover, which incorporates suitable EQ. Effective and cost-effective means of adding extension to a typical minimonitor-based system, but highish-Q bass tuning means that system/room optimization can be a somewhat protracted affair. JA noted, to his surprise, that when set up correctly, a stereo pair of Samsons added considerable image depth and stability to the sound of Celestion SL600s. He has also heard a pair of Samsons working well with Martin-Logan CLSes. (Vol.11 No.4, Vol.12 No.1)

Sumo Delilah stereo electronic crossover: \$550
Featuring independently switchable high- and low-pass crossover frequencies, Bessel-type filters, low-pass slope selectable between 12 and 18dB/octave, low-pass level control, a bypass switch, and both mono and stereo inverting and non-inverting subwoofer amp outputs, the Delilah is the most versatile means of integrating one or two subwoofers into a system JA has found. High-pass output is not quite as transparent in the treble as a straight-wire bypass. (Vol.11 No.4)

K
Entec and Janis subwoofers, Bryston 10B electronic crossover.

FM Tuners & Antennae

A
AudioPrism 7500 indoor FM antenna: \$150
Low-VSWR (Voltage Standing Wave Ratio), vertically polarized, omnidirectional indoor passive design that, like the Day Sequerra, will prove optimal in urban high-signal-strength areas. 89.5" height. (Vol.12 No.5)

BP FM-9700 active antenna: \$40
Excellent directional indoor antenna offers 6dB improvement over conventional T-shaped dipole antenna. (Vol.11 No.10)

Day Sequerra FM Studio Monitor: \$3800
With a styling similar to the same company's FM Broadcast Monitor, the FM Studio Monitor is a completely new design, built to the same exacting standard. Balanced outputs are provided. Compared with the Broadcast Monitor, selectable IF bandwidth leads to improved adjacent-channel selectivity and lower audio THD. The sound, however, was where this tuner scored, being, according to LG, "as good as any source I now have in my system," with a "see-through quality that just doesn't happen with any unit I have ever heard in my system." LG also commented on the Studio Monitor's "extraordinary" dynamic range and enhanced presentation of inner detail. (Vol.13 No.1)

Day Sequerra FM Urban indoor antenna: \$285
Low-VSWR, omnidirectional, vertically polarized, 5'-high indoor passive design optimized for metropolitan

reception in areas of high signal strength. (Vol.12 No.7)

Magnum Dynalab 205 FM Booster: \$229

Not a tuner, but an excellent RF amplifier to optimize selectivity and reception in areas of poor signal strength. (Vol.10 No.6)

B

Denon TU-800: \$500

Excellent sound—"smooth and tubelike"—coupled with good RF performance, particularly adjacent-channel selectivity, and very low distortion in super-narrow mode. (Vol.11 No.5)

JVC FX1010TN: \$470

Very quiet backgrounds, coupled with excellent RF performance, apart from image rejection. Model reviewed was the almost identical FX-1100 BK (Vol.12 No.4)

Luxman T-117: \$600

"One of the best-sounding tuners ever!" said DAS in his review of this extremely sensitive tuner, pointing out its very low distortion. Borderline Class A. (Vol.11 No.2)

Magnum Dynalab FT-101: \$698 ☆

An analog tuner, the FT-101 is superb from an RF standpoint, particularly in quieting and sensitivity. Selectivity is bettered only by the Onkyo, Denon TU-800, and Citation 23, but the '101 consistently sounds superior on most stations. Examination of three different samples confirmed good quality control as of February 1988. (Vol.8 No.4, Vol.10 No.3)

Onix BWD1: \$885

Minimalist design with separate power supply, but a sound "transparent to the music source," with good soundstaging. Will give excellent sound, as good as that of the Luxman T-117, with classical stations broadcasting a clean, uncompressed signal, but not as good at snatching signals from the ether. Among the best-sounding tuners. (Vol.10 No.8)

Onkyo T-9090 II: \$750 ☆

This Mk.II version of an old favorite is an excellent-sounding tuner in its Wide mode, offering very low noise and superb stereo separation, though switching to Narrow or Super-Narrow noticeably degrades audio quality. Bass response is quick and dynamic. RF performance is excellent, though not as good as the Luxman T-117 in fringe reception areas. (Vol.11 No.5)

Revox B-260-S: \$2500

Ergonomics are initially daunting—there are 60 presets—but once set up, this beautifully constructed, very sensitive, very selective tuner was among the easiest to use. Audio quality on the Narrow IF bandwidth setting was excellent—"no harshness, no SCA birdies"—though not in the class of the Day-Sequerra models, felt LG. Remote control costs an extra \$160. Significantly less-expensive (\$990) B-160 preserves much of the 260's audio and RF performance. (Vol.12 No.7)

C

Harman/Kardon Citation 23: \$699

Excellent selectivity—"it can separate closely spaced stations where others fail"—but sensitivity rather on the low side. Excellent AM section, FM fine-tuning, topnotch sound. (Vol.10 No.8)

Magnum Dynalab FT-11: \$449

Borderline Class B tuner, according to DAS in his review, that lacks transparency when compared, for example, with the more expensive FT-101. This is perhaps due to its having a single, narrow, IF bandwidth. Has good selectivity and a very effective high-blend circuit for receiving weak stations in acceptable stereo. (Vol.12 No.10)

Quad FM4: \$695 ☆

Good-quality construction. Very sensitive with flawless audio if properly aligned. Lacks high adjacent-channel selectivity and mono-stereo switch. (Vol.8 No.4)

D

Adcom GTP-400: \$380

Excellent budget-priced preamplifier, with integral FM/AM tuner offering good sensitivity but only reasonable selectivity. (Vol.12 No.9)

Arcam Alpha 2: \$330

Warm tonal balance, excellent stereo separation, but only average RF performance. (Vol.12 No.7)

Hafler DH-330: \$365

In its current guise—the kit version is no longer available—one of the finest-sounding tuners DAS has reviewed, with good sensitivity and stereo separation and low distortion. (Vol.10 No.9)

Hafler Iris: \$450

Remote-control FM tuner that connects to the matching Iris preamplifier via a ribbon-cable link and can be controlled by the preamp remote. Having much in common circuit-wise with the DH-330, it offers audio with exceptionally low distortion and a slightly dry balance. Tuning is clumsy, however, requiring two buttons to be pushed, while DAS was also disturbed by the fact that it tunes in 50kHz intervals. RF performance is only average, with limited selectivity and poor immunity to SCA and FMX spurious. (Vol.13 No.2)

Marantz ST-54: \$420

Very sensitive, particularly in mono, but limited adjacent-channel FM selectivity. Ability to tune in 10kHz steps makes it suitable for receiving cable signals. Gold finish and rosewood end panels add \$80 to price. (Vol.12 No.10)

NEC T-710: \$299

Clean sound with good dynamics, if not quite possessing the selectivity of the now-discontinued Nikko NT-950 or the stereo weak-signal quieting of the Proton 440. (Vol.11 No.10)

Proton 440: \$300 ☆

The best of the Schotz noise-reduction tuners. Superior fringe performance when high adjacent-channel selectivity is not needed. Audio OK. (Vol.8 No.1)

Bogen TP-100A: \$256 ☆

\$199 from Fordum Radio (see Magnum review in Vol.12 No.10). Very clean sound, good stereo. Small size, good looks make it a good choice where space is at a premium. Usable only for medium-strength signals. Sensitive AM. (Vol.9 No.3)

K

Akai T-93, Magnum Etude, Onkyo T-4700, Arcam Delta 80, Klippo Ertanax.

Deletions

Onkyo T-4087 discontinued. Day Sequerra FM Broadcast Monitor dropped on the grounds that its sonic

performance is bettered by the less expensive Day Sequerra FM Studio Monitor.

Signal Processors

Editor's Note: I feel that to continue to recommend dynamic-range expanders, compressors, aural exciters, equalizers, ambience extractors, etc., is not in the true spirit of high fidelity, where the reproduction should be true to what the engineer and producer intended. The only processors I would recommend are those which can prove useful in rendering acceptable the playback of historical material. JGH, however, disagrees forcefully, feeling that equalizers, in particular, should be given high-end respectability for the correction of program deficiencies in the almost ubiquitous absence of tilt controls. Peter Mitchell also disagrees, on the grounds that "the true spirit of high fidelity" could mean either "recreating a lifelike illusion of music, by whatever means necessary, or literal reproduction of what is on the disc—no matter how falsely equalized, compressed, or colored that signal may be." He goes on to say that "with the best recordings, these goals may coincide, but not as a general rule. Case in point: Apogee speakers are inaccurate reproducers, but their fat bass and rolled-off top are partly responsible for their ability to recreate the sound you hear at a concert. Without the aid of equalizers or other modifiers of tonal balance, how can the radically different-sounding Apogee Diva and Acoustic Energy AE1 both be called 'high-fidelity' reproducers? If either is regarded as plausibly accurate, the other will need radical help from an equalizer to sound OK."

A

Accuphase G-18 graphic equalizer: \$5450

Very expensive 33-band equalizer has less deleterious effects on the signal than any other such device JGH has tried. Constant-Q bandpass/cut filter design leads to minimum overlap between adjacent bands. Best used for system EQ rather than for program. (Vol.11 No.4)

Packburn 323A noise-reduction device: \$2650 ☆

Quite expensive, and frankly intended for professional (archival) use, the Packburn is the best such device made. It can remove the maximum of surface noise—ticks, pops, and hiss—from shellac or vinyl discs with a minimum of signal degradation. (Vol.5 No.8)

K

Cello Audio Palette

Dolby MP Surround-Sound Decoders

Editor's Note: Although BS argued cogently against the use of a Dialog-channel center speaker in his Dolby decoder reviews, it must be pointed out that when several listeners are involved, as will often be the case with movies, a center speaker will be essential if those well off the central axis are to receive a sound localized at the screen position.

A

Shure HTS-5300 Dolby surround-sound processor: \$999

Full logic action and remote control. Individual trim-

pot level controls are provided for all six outputs, but can only be accessed from underneath. Only processor "to preserve the width, depth, and spaciousness of the soundfield," said BS, with a clear and open sound quality and stable, crosstalk-free decoding action. (Vol.12 Nos.8 & 11)

B

Lexicon CP-1 processor: \$1295

Uniquely, Dolby Pro-Logic decoding is performed in the digital domain, making what is basically an ambience synthesizer also an excellent buy for home video surround-sound use. Doesn't quite reach Class A for Dolby sound, a rather brash coloration being noticeable. Unique in being able to correct for tape azimuth errors. (Vol.12 Nos.1 & 8)

Lexicon CP-2 surround-sound processor: \$895

Less well-featured version of the CP-1, that keeps the all-digital processing of the Dolby surround information and the auto-balancing circuit. (Vol.12 No.12)

C

NEC PLD-910 Dolby surround-sound processor: \$999

Full logic control, with fine adjust (0.1ms steps) of rear-channel delay individually for each channel. Excellent remote means that you won't ever have to touch the main unit other than to turn it on and off. Sounds darker, less detailed than the Shures. (Vol.12 No.8)

D

Yamaha DSR-100 Dolby surround-sound processor: \$599

Full-logic companion Dolby decoder for DSP-3000 synthesizer. No input-level control, and lacks a surround channel level adjust. Rather dark-sounding tonal balance keeps this inexpensive decoder from being a best buy. (Vol.12 No.8)

Deletions

Sansui DS-77 on the grounds that there is no longer any excuse for a decoder not having Dolby Pro Logic. Fosgate Tate 101A as it is hard to see why anyone would still want an SQ decoder in the '90s.

Surround-Sound Synthesizers

A

JVC XPA-1010TN digital acoustics processor: \$1200

Differs from other synthesizers in the way it distinguishes between the way in which wide sound sources excite the reverberant field from narrow ones, the result being an enhanced sense of realism to the synthetic space being produced compared, for example, with the Lexicon CP-1. The JVC is "unmatched," said BS, in its ability to give the listener "exactly the kind of ambience" he or she wants, perhaps due to the fact that its synthesis action doesn't duplicate the early reflections already present on all but anechoic recordings. Its artificial ambience thus seems to fit much better with that on the record, thought BS. (Actual model reviewed was the XP-A1000BK, identical apart from being finished in black rather than "titanium.") (Vol.12 No.12)

B

Lexicon CP-1 digital audio environment processor: \$1295

Until the JVC came along, the CP-1 was the best-sounding hall simulator BS had heard, but with only three room models. Versatile choice of reverberation parameters, however, although less flexible, overall, than the Yamaha DSP-3000. Includes a reasonable Dolby surround decoder which can cope with video tape azimuth problems. (Vol.12 Nos.1 & 8)

Yamaha DSP-3000 surround-sound synthesizer: \$1899

Superb remote control; 18-bit D/A converters on main channels; needs full six-speaker system to work at its best; specific Hall models synthesize early reflections only, relying on reverberation already present on recordings to flesh out the illusion. Doesn't produce quite as believable an illusion of a real acoustic space overall than the Lexicon, felt BS, due to the failure of some of its room models to synthesize ambience. However, some models, the Cathedral and Chamber, are better than the American unit's equivalents. (Vol.12 No.9)

C

Sony SDP-505ES†

Excellent-sounding and versatile 16-bit digital delay line running at 44.1kHz for rear-channel ambience synthesis extraction. Integral 14Wpc amplifier for rear channels. Front channels do not pass through active circuitry, so veiling of main-system sound is minimal. Superseded by similar \$850 SDP-777ES, which adds full remote control and Dolby Pro logic decoding. (Vol.11 No.3)

Home Recording Equipment

Editor's Note: With the exception of the Fostex listed below, none of the microphones listed has been formally reviewed. However, Robert Harley, *Stereophile's* Technical Editor, has had extensive experience with many professional models and has compiled most of the thumbnail sketches of each's sonic signature. Other professional models to look out for on the secondhand market are cardioids from Sony (C37P & C500), Milab, and Calrec, figure-eight ribbons from B&O and Coles, omnis from Schoeps and B&K, and PZM mikes from Crown (though it is very easy to get a rather colored midband with these latter mikes). The Shure C81 cardioid is also reported to have quite a flat response. Anyone about to undertake serious recording should ignore all "amateur" microphones; as a rule of thumb, you should spend as much, or more, on a good pair of mikes as you do on your recorder.

A

EAR 824M stereo mike preamplifier: \$2600

Extremely neutral, very quiet, all-tube, balanced preamp from Tim de Paravicini, with switchable level controls and 48V phantom mike power. Used by Water Lily Acoustics and also to make *Stereophile's* first commercial recording. (NR)

EAR "The Mic": \$3200

Using a single 6DJ8 tube and a fist-sized output transformer, this rectangular-capsule (sourced from Milab), switchable pattern—omni, cardioid, figure-eight—mike is a little shut-in in the highs, but has extended

low frequencies and a midrange that is extremely true to the original sounds. "No trace of edge or glare," says RH. Easily the best microphone JA or RH has heard. (NR)

Nakamichi 1000 R-DAT recorder: \$11,000

Easily the most expensive R-DAT machine around, this two-box Nakamichi lives up to its Model 1000 analog cassette predecessor in being perhaps the finest digital recording system available to the amateur recordist. Records digitally at 44.1kHz and 32kHz and from analog at 48kHz. Superb, quiet tape transport, unique fast-spooling mode, and exceptional ergonomics make it a joy to use. Treated as a D/A processor, the sound was not up to such Class A contenders as the Theta DS Pre, being somewhat less transparent, but was musical nonetheless. The Nakamichi 1000 was used to master the *Stereophile* Test CD. (Vol.12 No.11)

Panasonic Pro 3500 R-DAT recorder

One of the best-sounding DAT decks on the market, according to PWM, with MASH oversampling encoders and pretty good analog circuitry. Recent units (with a blue dot on the box) contain a switch that enables digital recording at 44.1kHz; these will copy CDs digitally, also 44.056kHz PCM-F1 tapes played through an Apogee-modified F1 or Sony PCM-601. A bargain considering it is widely discounted to below \$2500. (NR)

B

AKG C414B/ULS: \$1045

A popular, large-diaphragm condenser mike, the 414's extended bass and flat frequency response make it ideal for a variety of applications. Switchable polar patterns, variable pad, and selectable LF rolloff add to its versatility. Transformerless TL version costs \$1255. (NR)

AKG The Tube: \$2295

One of the few currently produced tube microphones. Smooth, open, and uncolored, The Tube captures detail without solid-state stridency. (NR)

Calrec Soundfield Mk.IV: \$5850

Having used both Mk.III and Mk.IV versions, JA feels that the highly praised, variable pickup pattern of this stereo/Ambisonic mike is let down by an overall "graininess" and lack of midrange detail, coupled with a slightly hard lower treble. Nevertheless, is excellent at capturing a true stereo image with width and depth. 100m of cable adds \$140 to price. (NR)

Neumann U-87

A perennial mike favorite among recording engineers. Wide, flat response gives it a similar sound to the 414, but with more "reach" in live, stereo miking applications. Used extensively on vocals. (NR)

Panasonic Pro 255 portable R-DAT recorder

Very good sound, with the same MASH encoders as the Panasonic 3500. Less flexible, hence lower rating, and lacks digital inputs. Amazingly tiny for what it does—far and away the best-sounding recorder small enough to carry in a coat pocket. Built-in mike preamp, while not the ultimate, is good enough for serious use. (NR)

Sony DTC-1000ES R-DAT recorder

A healthy R-DAT gray market is flourishing and some professional models are now officially imported, including some expensive professional portable models. Offers all the sonic performance and more of

Sony's PCM-F1/VCR combination in a small, user-friendly package, with all the convenience of CD. In contrast to Martin Colloms's very positive review, reports in *The Boston Audio Society Speaker* (Vol.16 No.1) found that many of these early machines suffer from increased levels of distortion at low levels. A/D and D/A performances do seem to suffer considerably from machine to machine. (Vol.10 No.5)

Tandberg TD20A SE Open-Reel Tape Recorder ☆

The best buy in an open-reel deck, this now-discontinued model offered professional-caliber performance at a relatively modest (\$1695) price. Better sound than many professional decks, but ergonomics less good than the still-current Revox B77 III. (Vol.7 No.7)

Telefunken 251 †

Classic tube mike with a sweet, warm sound. No longer made, but available in the used market (at many times its original price). Smoother HF than the 414 or U-87. (NR)

C

AKG C451EB/CK1: \$495

AKG C460B/ULS/CK61: \$550

Two small-diaphragm condenser mikes with removable cardioid capsules (omnidirectional, hypercardioid, vocal, and shotgun capsules are also available). Sound is very detailed, but the C451/CK1's tonal balance leans toward the thin and bright, and it has significant off-axis peakiness, making it a less-than-optimal choice for realistic two-mike stereo. Good on drums, however. Omnidirectional CK2 capsule is somewhat colored, but a 20Hz resonance provides an attractive emphasis for pedal fundamentals. Same diaphragm as CK1 used in C34 stereo mike, which has similarly bright balance. Newer C460/CK61 said to be much improved. (NR)

Crown SASS-P microphone system: \$849

This is a stereo pair of omni PZM microphones in a head-sized foam block that produces ORTF-like natural stereo imaging. Extended bass response, unlike most directional mikes. Weighs only 1 lb, making it very easy to hang from cables or to mount on a tall stand. "One SASS-P unit, one stand, and a Panasonic Pro 255 DAT make a complete but amazingly portable recording system with very satisfying performance," reports PWM. (NR)

Fostex M22RP/S M-S microphone: \$1095

Integrated ribbon M-S stereo microphone. While not quite as open at the top as the best capacitor mikes, and possessing a lightweight bass, the M22RP/S captures the original soundfield extremely accurately. Stripped-down version, the M20RP, costs \$700. (Vol.11 No.3)

JVC TDV711BK cassette deck: \$620

AG reports that this three-head deck marries an excellent transport to fundamentally excellent sound quality, particularly when Dolby noise reduction is switched out of circuit. (Vol.11 No.11, "Pure Gold")

NAD 6300 cassette deck: \$899

Remote-control three-head deck offers effective play-trim control for restoring the HF on tapes made with machines having offset azimuth. Sound smooth, with slight loss of detail set against a freedom from hardness. (Vol.10 No.6)

Revox B-215-S cassette deck: \$2800 ☆

Automatic bias adjustment, superb transport. Accord-

ing to JGH, "A superb cassette recorder, for the person who wants and is willing to pay for the best quality cassettes have to offer." AHC emphatically disagrees. The latest Nakamichis, with their automatic play-azimuth adjust, probably get a slight bit more off prerecorded tapes. Less-expensive (\$2300) B-215 cosmetically different but otherwise identical in performance. (Vol.8 No.7)

Sony TC-K730ES cassette deck: \$850

Minimalist, three-head, twin-capstan cassette deck, built—surprisingly—for sound quality. Outstanding soundstaging (for cassette), good dynamics (with high-bias tape), and an airy top end led AG to suspect that this was a deck that had more to do with common-sense engineering than with features. Original TC-K700 auditioned only differs in not having "super-bias" tape-biasing system, which increases HF headroom. (Vol.11 No.1, "Pure Gold")

Sony TC-D5M: \$750

This decade-old portable only offers Dolby-B noise reduction, but is probably still the best location cassette recorder available short of an R-DAT. (NR)

D

Sony WM-D6C Pro Walkman cassette system: \$400 ☆

A pocketable stereo recording system of surprising quality and versatility. AG feels that to spend more on a cassette deck would be a waste of money. Less expensive WM-D3 half the size but keeps most of the quality. Higher wow & flutter, however. (Vol.7 No.6, Vol.10 No.6)

TEAC V-970X cassette deck: \$800

Excellent dual-capstan, three-head deck with Dolby HX headroom extension and comprehensive noise reduction (dbx, Dolby-B and -C). Somewhat grainy highs keep it from Class C. More expensive R-919X (\$830) features bidirectional record and playback but has less good speed stability, noted George Graves. (Vol.11 No.6)

Any cheap Dolby-C cassette deck

Buy the cheapest with the longest manufacturer's warranty; don't expect to get high-end sound quality from it; use it to makes tapes for your car or Walkman until it breaks; throw it away; buy another one, advises The Cheapskate in Vol.10 No.9.

K

Nakamichi CR7A cassette deck.

Deletions

dbx 700 processor as parts can't be obtained and current dbx company can't service it.

Accessories

Adcom ACE-515 AC Enhancer: \$180

Effective AC power-line conditioner with RF filter, spike suppression, five accessory outlets (300W capability), and two heavy-duty outlets (1500W). Does not seem to limit current demands of power amplifiers. (Vol.11 No.4)

Arcici Quad ESL-63 stands: \$195/pair ☆

Latest and greatest method of getting the Quads to perform as God and Peter Walker intended. Clamps the ESL-63 in a rigid embrace, also raising it an optimal 16" off the ground. (Vol.10 No.1)

Arcisi Lead Balloon Turntable Stand: \$325

The opposite approach to that of the Sound Organisation table, with lead used to provide mass sufficient that nothing short of an earthquake will disturb the tranquility of the groove/stylus interface. Enthusiastically recommended by DO. A matching light is available for \$30. (NR)

ASC Tube Traps ☆

Relatively inexpensive—prices range from \$166 to \$436 depending on size and style—but remarkably effective room-acoustics treatment. Tube Traps soak up low-to-high bass standing-wave resonances like sponges. (Vol.9 No.3)

Audio Control Industrial SA-3050A Analyzer: \$995

Portable (battery-powered) and inexpensive, 1/2-octave analyzer with pink-noise source and accurate calibrated microphone. Parallel port can be used with any Centronics-compatible printer to print out real-time response. (Vol.11 No.6, Vol.12 No.3)

AudioPrism CD Stoptight: \$14.95

Green acrylic paint for coating the edges of CDs. The green color—it absorbs the laser's infrared wavelength—is presumably significant, but at present we have no idea why this tweak should so improve the sound of CDs. That it does so, however, seems to be beyond doubt. Martin Colloms reports that a poster pen, the Uniposca from Mitsubishi, has a very similar effect. Martin also notes that the CD should first be destaticized before the green paint is applied. (NR, but see DO's and TJN's WCES report in Vol.13 No.3.)

AudioQuest DM-1000 cartridge demagnetizer: \$80

(NR, but the similar and more expensive Sumiko Flux-Buster was reviewed in Vol.9 No.4, Vol.10 No.5, Vol.12 No.4)

AudioQuest Sorbothane Feet

The best means of isolating components from vibration. A set of four big feet costs \$40, four CD feet \$25. (NR)

CD Saver

Eliminates scratches from CDs and LaserVision discs, rendering the unplayable playable. (Vol.10 No.8, Vol.11 No.8)

Cramolin Contact Cleaner

The right stuff for cleaning up dirty and/or oxidized plugs and contacts. (Vol.10 No.6)

DB Systems DBP-10 Protractor: \$30 ☆

Fiddly but accurate guide for setting cartridge tangency. JA's and JGH's preferred alignment protractor. (NR)

Distech Powerbridge I & II AC cords: \$120-\$200

LL reports that these AC cords produce an audible difference with amps and preamps, but whether this difference represents an improvement or not is very much component-dependent. (Vol.11 No.4)

Inouye Synergistic Power Line Conditioner: \$525

Expensive, dual-channel AC line conditioner, with sophisticated filtering and spike protection, cleans up the sound from CD players, reported JA, but had variable effects with preamps and amplifiers. (Vol.12 No.3)

Meltnier Translinks: \$325/pair

Signal transformers with a 1:1 ratio, these isolate the preamp ground from that of the power amplifier. In

the context of the Meltnier preamp/power amp combination, these seem to improve low-level dynamic performance. Must be driven by a source impedance of 100 ohms or less. (Vol.11 No.6)

Merrill Stable Table turntable stand: \$899

Exotic wood finishes add \$100 to price; granite top adds \$60; an appropriate amount of lead shot will cost around \$100. (Vol.12 No.10)

Mobile Fidelity Geo-Tape: \$15 ☆

A valuable test and shopping aid for cassette decks. (Vol.8 No.5)

Monster Cable/Euphonic Technology/Sims/AudioQuest CD rings: \$1.50 each

Soft rings that adhere to the circumference of a CD. Presumably by increasing gyroscopic stability—provided the Sounding is correctly centered; not always the case—as well as providing a modicum of disc damping, these presumably make life easier for the player's servo circuits, thus reducing time jitter in the digital signal fed to the player's DAC circuitry. (Work by Peter Mitchell and Robert Harley shows that the rings have *no*, repeat, *no* effect on the error rate in the raw data coming off the disc.) Their subjective effect, however, is to reduce CD stridency, improve resolution of detail, and render the sound more "analog," according to the Cheapskate. \$15 for 12, \$50 for 50. Latest version from Monster Cable has different adhesive to allow easy removal if the user is not impressed by the sonic effect. (Vol.11 Nos.4 & 9, Vol.12 Nos.6 & 8)

Phantom Acoustics Shadow active LF acoustic control (RH): \$2500/pair

The first instance of active noise-control techniques being used to modify listening-room acoustics. Robert Harley reports that these tall, corner-placement cylinders do a fair job of minimizing low-frequency standing-wave problems. (Vol.12 No.12)

RPG Diffusers

The first effective method of adding diffusive surfaces to a listening room, these remarkably effective panels join Sonex foam and Tube Traps in helping to tame the so-far untamable—room acoustics. (Vol.11 No.4)

Signet SK-302 Contact Cleaner Kit: \$25

Contains abrasive plastic tools for effective inner cleaning of phono plugs and sockets in combination with Cramolin. The RCA phono plug and socket cleaners alone cost \$10. (Vol.10 No.6)

Sims Navcom Silencers

Robert Deutsch finds these damping feet to provide superior isolation to Mission's Isoplat. (NR)

SOTA & Goldmund record clamps ☆

Though these clamps have somewhat different sounds, they are the best record-clamping devices on the market. They can both improve top- and bottom-end extension and reduce resonances on any 'table, including those employing vacuum clamping systems. Well worth their cost in a high-resolution system. The SOTA Series II Reflex clamp (\$135) gives a somewhat richer, warmer sound and is more effective against upper-midrange and lower-treble resonances. The Goldmund shapes up a flabby lower midrange and controls the more serious lower-treble/upper-midrange problems. Both work well with the SOTA Supermat.

Sound Organisation Turntable Stand: \$150

The mandatory ancillary to the Linn turntable, though,

as with the more expensive RATA stand, its low height may prove bothersome in a listening room that has to be shared with cats and children. (A taller version is now available.) (NR)

StyLast Stylus Treatment ☆

StyLast won't make a difference every time you put it on, but it will help provide smoother high-end sound, and is claimed to extend stylus and cantilever life. (NR)

Sumiko Fluxbuster: \$250 ☆

Excellent cartridge demagnetiser, though more expensive than new AudioQuest model. Recent availability at a discounted price suggests that it is being phased out. Be sure to remove the stylus assembly when using any of these devices to demagnetize a moving-magnet cartridge. (Vol.9 No.4, Vol.10 No.5, Vol.12 No.4)

Sumiko Tweak Contact Cleaner: \$18 ☆

This contact enhancer for use on plugs and terminals actually does improve the cleanness and resolution of the sound of an already excellent system. Keeps freshly made contacts fresh. (Vol.10 No.6)

Target equipment racks: \$150-\$300

Finished in basic black, these useful but inexpensive racks feature rectangular steel tube construction, with price depending on height and number of shelves. Spiked feet supplied, with top shelf resting on upturned, adjustable spikes to optimize it for turntable use. Target's wall-mounting turntable shelf possibly the best way of siting your turntable out of harm's way. (NR)

Tice Power Block and Titan: \$1250/\$1000

Superb if expensive AC conditioning system. (See RH's review in this issue.)

Tiptoes ☆

The Mod Squad's greatest invention. The least expensive way of improving the bass and midrange definition of virtually any loudspeaker.

Watkins Echo-Muffs: \$199/pair

Effective means of reducing amplitude above 200Hz of early reflections of loudspeaker from nearby surfaces, thus improving imaging. Whether or not the aesthetics will be domestically acceptable will be up to personal taste. (Factory-direct only.) (Vol.10 No.4)

WBT RCA plugs

The best, although original steel locking collet, now replaced by brass, gave rise to neurosis. (NR, but see "Industry Update," Vol.12 No.9)

Good Speaker Stands

There are too many possibilities, but, briefly, a good stand will have the following characteristics: good rigidity; spikes on which to rest the speaker, or some secure clamping mechanism; the availability of spikes at the base for use on wooden floors; if the stand is steel, provision to keep speaker cables away from the stand, to avoid magnetic interaction; and the correct height, when combined with your particular speakers (correct height can be anything from what you like best to the manufacturer's design height for best drive-unit integration). Though *Stereophile* has neglected to review speaker stands, it doesn't mean we think them unimportant — for speakers that need stands, every dollar spent on good stands is worth \$5 when it comes to sound quality. Brands we have found to offer excellent performance are Chicago Speaker Stand, Arcici

Rigid Riser, Celestion SLSi, Target, Heybrook, and Linn.

K

Triplite line conditioners.

Headphones & headphone accessories

A

Stax SR-Lambda Signature: \$2000

A diaphragm one-third thinner (1µm) than the Lambda Pro, and a drive amplifier (SRM-T1) with a tube output stage distinguish what BS termed "the best headphones around" in his review. As good as the Pros are, the Signatures better them in terms of air and space around instruments, having a more forward midrange and less, if you can believe it, of a "mechanical" quality. (Vol.11 No.8)

Stax Lambda Pro 3: \$1200 ☆

The latest version of the flagship Stax headphones, supplied with a dedicated class-A solid-state amplifier, the SRM-1 Mk.II, the Pro 3 features a totally transparent sound with, according to BS, "oodles of detail." Unlike most 'phones, the listener gets a true idea of the surrounding ambience on a recording. Balance is laid-back and bass is a bit fat, not quite blending with the rest of the range, but distortion levels are astonishingly low, and the Pros have a remarkable dynamic-range capability. As delivered, the Lambda suffers from upper-midrange suckout, which becomes less bothersome after some hours' use. Very comfortable. (Vol.7 No.5, Vol.10 No.9, see also headphone review in Vol.12 No.4)

Stax ED-1 diffuse-field headphone equalizer: \$800

Equalizes headphone sound to compensate for the fact that headphones fire the sound straight into the listener's ears, whereas in real life the sound has to negotiate the audio obstacle course represented by the listener's head and outer ear. "The entire audible spectrum sounds more coherent and seamless," quoth BS. (Vol.12 No.4)

B

Stax SR-5 NB: \$350

More colored in the midband and above than the Stax SR-34 or Signet models, and balanced a little on the bright side, the '5 scores when it comes to reproduction of low frequencies and overall transparency. (Vol.10 No.9)

C

Beyerdynamic DT990: \$210

One of the two best dynamic headphones on the market. (The other is the Sennheiser HD 540.) A less detailed sound than the electrostatic models and a slightly bass-shy, midrange-forward balance preclude a Class B rating. For \$60 more, the DT990/Pro features a neutral balance and more extended low frequencies, raising the performance to borderline Class B. (Vol.10 No.9)

Sennheiser HD 540 Reference: \$199

One of the two best dynamic headphones on the market. Slightly less neutral than the Beyer DT990, being more laid-back with a "wispy," even bright, high end.

The new HD560 has a more musical balance, lacking the '540's top-octave brightness. (Vol.10 No.9)

D

Beyerdynamic DT 320 Mk.II headphones: \$83
Transparent sound, with reasonable LF extension. Some listeners may find its balance too bright, however. (Vol.12 No.4)

Sony MDR-282 Turbo†
Best of the in-the-ear cans, with LC-OFC wiring, excellent bass response, and a relatively uncolored treble, despite a somewhat overbright balance. Latest E484 version (\$40) said to be slightly better. (NR, but see headphone review in Vol.12 No.4.)

Sony MDR-CD6: \$120
A little expensive for the sound quality offered—too much midbass, sound somewhat unsubtle—but recommended on the grounds that BS feels these to be the ideal cans for location recording, due to their high sensitivity and good isolation. (Vol.10 No.9)

Sony MDR-S101 Mk.II: \$30
A light balance with a lively, open sound, but free from coloration and distortion. A bargain! Mk.II version features gold-plated jacks. (Vol.10 No.9)

K

AKG K-1000 Reference, Sennheiser HD560.

Deletions
Signet TK44 discontinued, Stax SR-34 replaced by more expensive "Pro" model.

Record-Care Products

A

LAST record-preservation treatment ☆
This actually works. It significantly improves the sound of even new records and is claimed to make them last longer, though we haven't used it long enough to verify the claim. (Vol.5 No.3)

Nitty Gritty Mini Pro 2 record cleaner: \$700 ☆
This semiautomatic wet cleaner cleans both disc sides at once. Slightly less rugged than the VPI, but both do an excellent job and the Nitty Gritty Pro II is faster. Significantly better design than earlier Nitty Grittys. You may be surprised that the main sonic effect of cleaning LPs is not primarily a reduction in surface noise but a cleaning up of midrange sound. (Vol.8 No.1)

Nitty Gritty 2.5FI record cleaner: \$500 ☆
Instead of a vacuuming toner arm as on the professional Keith Monks machine, the NG cleaner uses a vacuum slot. Cleaning is efficient and as good as Nitty Gritty's Pro, at a significantly lower price, though it takes twice as long, cleaning each side of an LP in turn. (Vol.7 No.5, Vol.8 No.1)

Nitty Gritty Hybrid 2 Record/CD cleaning machine: \$610
Basically a Nitty Gritty 2.5FI with an adapter that allows CDs to be buffed clean in a non-tangential manner. (Vol.12 No.3)

Rozoll Gruv-Glide ☆
Record destaticizing agent that also leads to better sound. Apparently doesn't leave a film or grudge up the stylus. (Vol.9 No.8)

VPI HW-17 record cleaner: \$700 ☆

Clearly an industrial-quality machine of reassuring quality, the VPI does one side at a time, semiautomatically, and is slower than the Nitty Gritty. "A highly functional and convenient luxury." Latest version has a heavier-duty vacuum system. (Vol.8 No.1)

B

VPI HW-16.5 record cleaner: \$425 ☆
Manually operated version of HW-17 (above), noisier motor; less money. Adjusts automatically to thickness of record. (Vol.5 Nos.7 & 9, review was of earlier but substantially identical HW-16.)

D

Decca, Hunt-EDA, Goldring, or Statibrush record brush ☆

Properly used (held with the bristles at a low angle against the approaching grooves and slowly slid off the record), these are the most effective dry record-cleaners available. (JGH strongly disagrees, feeling that they leave the dust on the record.) No substitute for an occasional wet wash. (Vol.10 No.8)

DishWasher record brush ☆
If you don't have a cleaning machine, the DW system will do an adequate job on relatively clean records, but won't get out the deep grunge. If you begin to accumulate lots of gunk on your stylus after cleaning your record with an older DW brush, the bristles are worn out; send it back for resurfacing or buy a new one. A high-torque turntable is required. (NR)

Loudspeaker Cables & Interconnects

Editor's Note: Previous "Recommended Components" listings for speaker cables and interconnects were mainly derived from Dick Olsher's surveys in Vol.10 No.2 (March 1987) and Vol.11 No.7 (July 1988). As many, perhaps nearly all, of the models recommended have changed to a greater or lesser degree since those reviews appeared, we decided for this issue to list those cables that members of the magazine's review team either have chosen to use on a long-term basis or have found to offer good value for money. They are therefore implicitly recommended. Where a cable has been found to have specific matching requirements or an identifiable sonic signature, these are noted in the text.

Bear in mind that, to a far greater degree than with any other component, the sound of cables depends on the system in which they are used. Before parting with possibly large sums of money for a cable, it is essential to audition it in your own system. "Drinking by the label" is always a bad thing to do in hi-fi, but it is both unforgivable and unwise when it comes to speaker-cable purchases. In addition, in JA's opinion, the virtues offered by the most expensive cable may well only be audible in the context of a topflight, very expensive system. What is the "best" in absolute terms is not, therefore, necessarily the best for your system.

Arnis Balgalvis points out that mixing n'matching interconnects and speaker cables is a well-worn route to sonic disappointment. Always use interconnects and speaker cables from the same manufacturers, is his advice. Peter Mitchell strongly makes the point that less is more when it comes to speaker cable, recommending that a mono power amplifier be placed as

close as possible to the speaker it drives. This does pass the buck, however, to the preamplifier, which must then be capable of driving long lengths of interconnect.

Sam Tellig, the Audio Anarchist, and his associate Lars have been impressed by a recommendation for speaker cable from Dave Magnan, the maker of Magnan Series V interconnect: specially prepared Mogami Neglex 2477, which retails for under \$1.50/foot. (A double run is required, which brings the cost up to just under \$3/foot.)

Sam writes: "Cut off about 6" of the black outer sheath, exposing the outer wires, the shield. Peel back this wire—beautiful oxygen-free copper—and twirl it together. Now cut off about 3" of the inner sheath, exposing the inner wire. Wrap some electrical tape around the bottom 3" of the outer shield. It's important to leave about 3" of the center sheath intact to help prevent the wire from shorting out when you do what I'm going to describe next.

"Do what I just said with two runs of the Mogami. Now, carefully combine the inner core of one run with the outer shield of another, making sure that the words "Mogami Neglex" run the same way on both outer sheaths, because this stuff is highly directional. The word "Neglex" should face the power amp; in other words, the words on the sheath should run toward the speakers. Crimp on some spade lugs and tape over any exposed wire.

"The problem with the Mogami, aside from the pain in the butt of preparing it, is that the bottom end is not so good. So here's a cable you can perhaps use if your system has too much bass: a tone control, if you will."

Interconnects

AudioQuest Lapis Hyperlitz:

\$400 1m/pair terminated with RCA plugs

Tonally, the latest version of Lapis seems to fall midway between the "mellow" cables—MIT, Monster—and those that are rather upfront in the treble, such as Madrigal HPC. JA feels, however, that its outstanding virtue is a lack of grain that allows correct instrumental textures to flow freely, and a well-defined, deep soundstage to develop.

Cardas Hexlink: \$411 1m/pair terminated with RCA plugs

A Dick Olsher fave rave.

Esoteric Audio Enamel Litz CD interconnect: \$65 (Tech 2), \$35 (Superlink) 0.9m/pair terminated with RCA plugs

Don Scott recommends this interconnect—"after it has been seasoned for about a month"—for "taking the nasties out of often gritty FM." He does mention, however, that it is not the optimum choice for overall transparency.

Expressive Technologies IC-1:

\$415 1m/pair terminated with RCA plugs

Robert Harley is currently evaluating samples of this interconnect, with positive results. "Despite the fact that these cables are bigger around than a garden hose, ridiculously bulky, unwieldy, [and] stiff, the musical rewards they offer are well worth the trouble."

Jerrold RG-6

Don Scott fits this inexpensive generic cable with Radio Shack plastic-shell RCA plugs, modified to fit the wire diameter, and feels that it is remarkably uncolored.

Kimber KCAG: \$350 1m/pair terminated with RCA plugs

Unshielded but astonishingly transparent.

Kimber KCI: \$68 1m/pair terminated with RCA plugs

Krell Cogelco interconnect:

\$610 1m/pair terminated with RCA plugs

Arnis Balgalvis recommends this Krell-distributed interconnect for use with Krell electronics. In combination with Krell's The Path speaker cable, he finds that the sound "is very transparent and balanced, with detail galore."

Magnan Type V: \$595 4'/pair terminated with RCA plugs

Preliminary auditioning by Robert Harley suggests that this one is a winner.

Monster Cable Sigma: \$750 1m/pair terminated with RCA plugs

Used by both Larry Greenhill and Arnis Balgalvis, the latter characterizes the Sigma interconnect, when used with Classé and Rowland electronics, as giving low frequencies "proper weight and extension, the overall sound being very open and detailed." The Sigma cables also "throw a soundstage of vast proportion, the results being alive and musically involving." With Krell amplification, however, Arnie notes that the "sound gets too dark" with Monster Sigma, and "loses sparkle and glow."

Siltech 4-24: \$360/first meter w/RCA's, \$280/additional meter or unterminated

Astounding transparency and imaging, feels JA. Distributed by SOTA.

Straight Wire Maestro: \$272 1m/pair terminated with RCA plugs

Less laid-back than AudioQuest Lapis, with superb presentation of detail.

TARA Labs Space & Time Pandora: \$295 1m/pair terminated with RCA plugs

van den Hul D-102 Mk.II: \$110 1m/pair terminated with RCA plugs

Excellent treble but less good image focus.

Loudspeaker Cables

AudioQuest F14: 79¢/ft

Inexpensive flat-twin solid-core cable that Robert Harley enthusiastically recommends.

AudioQuest Clear Hyperlitz:

\$1095 10' pair terminated

Very expensive but solid bass reproduction with a clear (ha!), open midband and treble. Can sound rather lightweight in some systems, but almost defines the term "neutrality," feels JA. Uses "6N"—pure copper bundles in a complex lay that brings every conductor to the surface to the same extent.

Cardas Hexlink: \$411 10' pair terminated

Kimber 4AG: \$100/ft

A very expensive hyper-pure silver cable that resides in Larry Archibald's and Dick Olsher's systems and can offer a glimpse of audio heaven. Significant system sensitivity, points out DO, so be sure to check for compatibility before you buy.

Kimber Kable 8TC: \$780/ft

A double run of 8TC greatly improves the sound, feels DO. Excellent bass.

Kimber 4TC: \$4.40/ft

Kimber 4PR: \$1/ft

Least expensive cable from Kimber was found to have good bass, but a "zippy" treble and poor soundstage, according to DO. With inexpensive amplifiers, however, its good RF rejection compared with zipcord or spaced-pair types will often result in a better sound.

Krell The Path: \$680 10' pair terminated

Works optimally with Krell amplification, the result being, according to AB, "more heft and a gratifying glow around the performers."

Monster Cable Sigma: \$1000 12' pair terminated

See AB's remarks regarding Monster's Sigma interconnect.

Radio Shack 18-gauge solid-core hookup wire: 11¢/ft.

Ridiculously cheap way of connecting speakers, yet Sam Tellig reports that this cable is OK sonically. You have to choose for yourself whether to space or twist a pair for best sound (or even whether to double up the runs for less series impedance).

TARA Labs Space & Time Phase II TFA Return:

\$195 10' pair terminated

Guy Lemcoe's preferred speaker cable.

TARA Labs Space & Time Phase II cable:

\$6.95/foot

Featuring twisted solid-core construction and "Australian copper," this inexpensive cable is Dick Olsher's workhorse speaker cable. **\$**

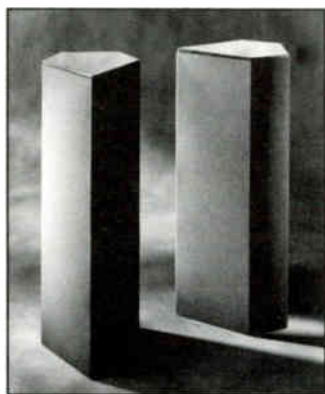


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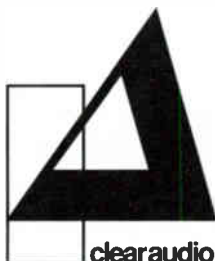
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—Jim Stoneburner, *Stereophile*, Vol. 12, No. 7, July 1989

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EQUIPMENT REPORTS

MUSIC REFERENCE RM-5 MK.II STEREO PREAMPLIFIER

Dick Olsher



Music Reference RM5 preamplifier

Manufacturer's specifications: Gain: 36dB at 1kHz (Phono); adjustable from 1.6dB to 28dB in approximately 6dB steps (Line). Bandwidth (-3dB frequencies): 0.72Hz & 60kHz (Phono); 0.17Hz & 350kHz at 14dB gain setting and 0.7Hz & 90kHz at 28dB gain setting (Line). Phono RIAA deviation: +0/-0.2dB, 10Hz-20kHz. Input impedance: 47k ohms in parallel with 30pF (Phono); 25k ohms (Line). Output impedance: 800 ohms at 14dB gain setting. Phono acceptance level: 600mV at 1kHz. Dimensions: 19" W by 3.5" H by 8.25" D. Weight: 16 pounds. Sample tested: SN 540. Price: \$1150. Approximate number of dealers: 30. Manufacturer: Music Reference/RAM Tube Works, P.O. Box 40807, Santa Barbara, CA 93140-0807. Tel: (805) 682-0388.

With the hindsight of 10 years' worth of audio-equipment reviewing, I've slowly come to the realization that a great preamp is a rare bird. Power amps, on the other hand . . . There've been at least a dozen power amps that have come my way that I could have lived with happily ever after. I've owned McIntosh, Luxman, and Marantz amps. And I still own a Michaelson & Austin TVA-10, and of course the little gem—the Radford STA-25 Series III—that at the moment is distinguishing itself by driving my Stax headphones. Yet, I can only think of two preamps over the years that have come close to satisfying my sonic appetite: the Conrad-Johnson Premier 2, and most recently the Threshold FET-10.

Basically, my sonic tastes place a premium on timbral accuracy, with resolution capabilities, soundstage transparency, and proper reproduction of musical textures and dynamics being other important priorities. Tube preamps have excelled in many of these areas, most notably soundstaging, dynamics, and an uncanny ability to reproduce the texture or feel of live music. But in my experience they have generally failed in the area of timbral authen-

ticity, even while being quite euphonic. When a preamp fails to recapture the correct timbre of my master tapes, I get pissed. After which, its reproduction of textures with exquisite liquidity, or its deep penetration into the soundstage, are rendered somewhat anticlimactic for me.

This is not an issue of tube *vs* transistor, for solid-state preamps also struggle with accuracy. The answer may lie in the fact that preamps amplify millivolts whereas power amps deal in volts or in a realm of signal amplitude several decades above that of a preamp. A millivolt harmonic structure is more readily adulterated by second-order effects such as the sound of passive components. Therefore, a preamp would appear to be more susceptible to timbral alterations. But at least tubed preamps as a family have given a better illusion of the real thing—without the gratuitous grain, excessive hardness, and treble zip typical of much solid-state gear. The RM-5 continues in the tradition of classic tube virtues, and, surprise surprise, reproduces timbres with excellent accuracy. But that's the rest of the story.

If someone were to cover up the product

name on the fascia of this preamp and ask you to guess at the country of origin, I'm sure that Germany would not be one of your guesses. The RM-5 lacks the opulence of a German product, and, well . . . looks no more inspiring than a little black box—which is precisely what it is. However, a closer inspection of the RM-5's innards reveals that the bulk of the money was spent on quality parts. The gain and balance controls are expensive 100k-ohm Noble pots. Rel-Cap polypropylene coupling caps are used throughout, and metal-film resistors abound. All of the circuitry is located on one large glass-epoxy printed circuit board which is dominated by the presence of three 6DJ8 tubes. The 170V plate-supply rectification and regulation is all solid-state. Gold-plated phono jacks are used for all inputs and outputs. Stock RM-5s are configured with a phono loading of 47k ohms in the form of a resistor soldered directly onto the PC board. My sample, at my request, was provided with the means to allow quick change-out of loading resistors. Four gold posts were installed on the board to allow resistor substitution. I ended up using a 30 ohm load resistor with the Monster Cable Alpha Genesis 1000 cartridge.

A mute circuit is provided which can be accessed from the front panel, useful for changing records or answering the phone without disturbing the level gain setting. In this mode the MAIN output is shorted as well as the tape outputs. The preamp will also go into mute automatically should the AC line voltage fall below 102V. It will remain in mute status until the fault is corrected. This means that you can turn the RM-5 off while the power amp is still on without incurring potentially damaging transients.

The phono input is directly coupled to the grid of the first 6DJ8. A ferrite bead is draped over the input lead, presumably to suppress RF interference. A passive network is used for the RIAA equalization, after which the signal is capacitively coupled to a second 6DJ8 for a total overall phono gain of 36dB at 1kHz. The third 6DJ8 is used as a line-level gain stage. Designer Roger Modjeski, in a wrinkle reminiscent of his RM-9 power amp, provides the flexibility of adjustable line gain. The adjustment is accomplished using a bank of mini-toggle switches located on the board, with possible gain settings of 1.6, 7, 14, 18, and 28dB. The rationale for this added complexity is the ability

to obtain the best possible signal/noise ratio during phono playback and to match phono level to that of line sources. Some of the gain variation is achieved by varying the amount of feedback around the line-level triode. For example, to increase the gain from 18dB (the factory setting) to 28dB, not only are level-attenuating resistors bypassed, but the feedback is reduced to zero. In fact, at all other gain settings, there is some loop feedback around the line stage. Why am I going into this much detail here? As you will see shortly, sometimes some feedback is better than none at all.

The larval stage

Because I was trying to accommodate a low-output MC cartridge, I reconfigured the preamp's settings for the full 28dB of line-stage gain. Of course, I ended up with a wide discrepancy in level between phono and line sources, with a 2 o'clock level setting for phono and a barely open level control for line sources. My initial impressions were gleaned in this configuration.

It is my standard practice to commence pre-amp testing with a critical assessment of the line-level stage. After all, a line stage should be much easier to execute than a phono stage. Thus, the sound of the line stage can be used as a gauge for the overall excellence of the pre-amp. That's not to say that the sound quality during record playback can be entirely predicted from the sound of the line-level stage. There may be a synergistic interaction between the two stages that, for example, compensates for certain tonal balance shortcomings of the line stage. However, the sound of the line stage on its own is certainly important if you're going to be running a CD player or a tape deck into it.

Trouble surfaced immediately during the Lesley Test (track 11 on the *Stereophile* Test CD). Not that the sound of the RM-5 was irritating or obnoxious. Far from it. My wife Lesley's upper registers were reproduced through the Quad US Monitors in a rather dull and lifeless fashion. The sheen and brilliance of her upper range were greatly diminished. Midrange textures were noticeably thick and syrupy, to the point that the entire soundstage was somewhat opaque and diffuse. And this was with the Air Tight ATM-2 tube power amp—review in progress—which I have found to be capable of recreating a soundstage with remarkable palpability. During loud passages, the mids became

grainy and a slight glare crept into the upper mids.

Not a promising beginning. I deferred a round of CD program material in favor of a quick switch to black vinyl. Again, the sound was reasonably smooth and inoffensive, but just as colored. Itzhak Perlman's violin tone (Bruch Violin Concerto I, EMI ASD-2926) was lackluster, without convincing harmonic richness—as if the lifeblood was drained from it. David Abel's Guarnerius (Beethoven Sonata in G, Op.96, Wilson Audio W-8315) did not fare any better. The sheen and sweetness of the violin's overtones were clearly emaciated. The RM-5, set for 28dB of line-stage gain, appeared unable to generate an adequate sense of space. It was difficult for me to readily resolve the dimensions and reverb of the recording acoustic. Complex passages were somewhat muddled and not easily resolvable. Instrumental outlines ran into each other, as on a runny watercolor painting. You can imagine my feelings at this point. A colored, blah little preamp with the antithesis of solid-state sound to the point of putting one to sleep.

Next, I switched speakers to the Celestion SL600s. By this time, the preamp had been cooking for several days. Still, the RM-5 struck me as colored. The extreme highs were soft. The upper mids were dryish—significantly short on sweetness and sheen. The mids were generally on the thick side, the soundstage veiled and slightly diffuse in terms of image outlines. I finally got around to CDs. Julianne Baird's upper registers (*The English Lute Song*, Dorian DOR-90109) were wilted, and spatial outlines were not as crisp as with the Threshold FET-10e. "The Willow Song" (track 11) lost much of its magic, as it was more difficult to decipher the interplay of direct sound and reverb. Emma Kirkby (*Gothic Voices*, Hyperion CDA66039) suffered the same fate. Her upper registers were portrayed on the dry side of reality, without the requisite amount of sheen and sweetness. Again, it was difficult to define hall size. It became obvious that this coupling of the RM-5 with the Celestions was much worse in terms of tonal-balance deviations. The recessed and dark tonality of the SL600s through the upper octaves did not help matters.

So I switched speakers to my own Dahlia-Debras, and amps to Music Reference's RM-9. A reduction in soundstage transparency was still noticeable. The mike's pickup pattern was obscured on the Lesley Test to the point of

diffusing image outlines. The highs were muted, and treble transients lacked incisiveness, being instead polite and inoffensive. I was aware that some low-level detail was being glossed over. The tonal balance was no different from before. That's right: dull upper mids. To give you a final example, Taj Mahal's *Recycling the Blues & Other Related Stuff* (Columbia KC 31605) is not a tame recording. It's a bit hot on top. So when I tell you that, on the "Sweet Home Chicago" cut, Taj's steel-bodied guitar lacked zip, you surely get the picture.

It occurred to me that the sound of the RM-5 so far was possibly symptomatic of a 6DJ8-based design without feedback. On that basis I reconfigured the line-level gain setting to 18dB, which adds some feedback. There was just enough gain now with the RM-9 to accommodate my MC cartridge—but only into moderately sensitive speakers. But—but—you won't believe what happened to the sound!

Le papillon

The transformation was dramatic. The RM-5 shed its former constraints, emerged from its cocoon, spread its wings, and began to fly. Checking back with the Taj Mahal album revealed that the upper octaves this time around sounded alive. The soundstage was more transparent, low-level detail much easier to resolve than before, and the bass fiddle took on more body and tighter definition. I was beginning to enjoy this preamp. It was clear sailing for the RM-5 through *The Opus 3 Test Record 1*. Therese Juel's sibilants were well-controlled, without sizzle or splash. Soundstage dimensions were clearly delineated, with very good depth and width. Lots of low-level detail was evident, naturally, without etched treble transients or upper-octave emphasis. The nylon-stringed guitars on cut A2 were reproduced with the proper sense of brightness. The double bass on A3 was easily resolved, with very good pitch definition. The timbres of the piccolo, trombone, and bassoon on A5 were quite convincing. Neither did the RM-5 fail to capture the spaciousness of the soundstage on *Laudate!* (Proprius 7800). Massed voices were readily resolvable, and the soprano top registers were reproduced effortlessly as they soared above the mass of the chorus.

Revisiting the Lesley Test was also a pleasant experience—there was a huge increase in timbral accuracy. And this with both the Air Tight

and Music Reference amps. In both cases the luster returned to the upper octaves, and I would estimate that the RM-5 was able to capture about 90% of the essence of Lesley's timbre. The mids were smooth but not thick. And, to its credit, the RM-5 did not mask the spatial-resolution differences between the amps. The Air Tight's superior spatial capabilities were quite obvious; the sense of space around Lesley and the differentiation of Lesley's diaphragm within the soundfield were all greatly improved with the Air Tight.

I trotted out my pair of Dorian *Greensleeves* (more English Lute songs with Julianne Baird), one with the green edge coating courtesy of AudioPrism's CD Stop Light, and one without. The slimed copy of *Greensleeves* (try track 9) produced more focus within the soundstage, and better sibilants. The RM-5 in no way obscured the differences between the treated and untreated CDs. The "Columba Aspexit" track on *Gothic Voices* left little to complain about this time around. Emma Kirkby's upper registers possessed the proper degree of sweetness, and image outlines and hall reverb were all well-resolved. The extreme highs were slightly on the soft side of reality, but this may well be an artifact of the ATM-2.

Summary

With a modicum of feedback around the line-level stage and at a setting of 18dB of gain, the RM-5 proved to be a very enjoyable preamp. True, my first impressions of this preamp were less than sterling, but I'm pleased to report on what turned out to be a Hollywood happy ending. I hope there's a Mk.III version someday without that 28dB gain option, but in the interim the Mk.II strikes me as an exceptional value. With only around 54dB of overall gain (36dB phono plus 18dB line-level), accommodating a low-output MC cartridge will prove to be a tough proposition. The ultimate sound levels will be quite limited, unless you consider mating the RM-5 with a sensitive amp and speakers. Your best bet is probably a good MM cartridge or a high-output MC.

The RM-5 has no serious sonic weaknesses top to bottom. The bass octaves were consistently tight and extended, though lacking somewhat in dynamics. The mids were clean, with plenty of dynamic bloom, texturally smooth, and free from the electronic glaze that afflicts so much of the competition at this price

point. The RM-5 is capable of generating a spacious soundstage with convincing focus and resolution of spatial nuances. In the area of imaging it is able to capture a significant slice of the performance afforded by much more expensive preamps. Forget about tube glare or brightness—this preamp is a true servant of the music; it does not offend or interfere with the enjoyment of music. The presence region is well-controlled, without sizzle, spit, or oversibilance. Treble transients in general are quick, and the extreme top strikes me as natural in character.

What more could you want at the asking price? I certainly don't know of anything more satisfying for under \$1200. With that one very important caveat concerning gain in mind, this is one preamp I could easily live with.

Postscript: measurements

The Music Reference RM5 Mk.II preamplifier held no surprises on the test bench. The RIAA equalization circuitry was exceptionally accurate, as shown in fig.1. The right channel was about 0.6dB higher in level than the left channel with the balance control in its center detent position. Phono overload at 1kHz was a little unusual in that the amount of distortion in-

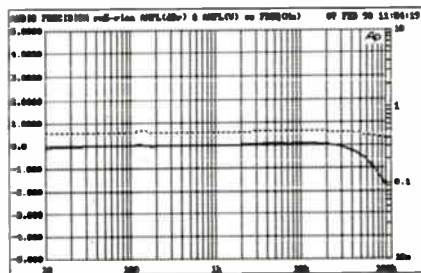


Fig.1 RM-5, RIAA accuracy, right channel dotted (1dB/div.)

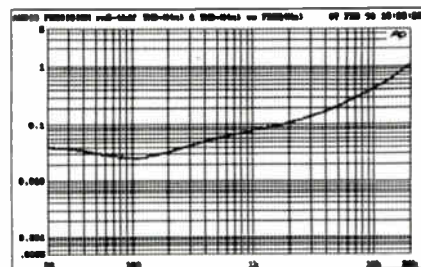


Fig.2 RM-5, THD + noise vs frequency, line input to main output at 1V rms

creased gradually with higher input level. Typically, distortion jumps instantaneously at the overload point. THD & noise was 1% at 30mV, rising to 2% at 70mV with a 1kHz input signal. This is a fairly low overload level, equivalent to just 15.6dB above a nominal 5mV cartridge output for a 5cm/s reference level for the 1% distortion figure.

THD & noise in the line section set to 18dB gain exhibited a rise in level with frequency, as shown in fig. 2. THD & noise remained below 0.1% through much of the band, but reached 1% at 20kHz. The line-section frequency-response graph (fig. 3) shows flat response, with the right channel about 0.2dB below the left

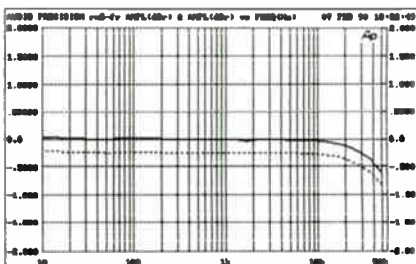


Fig. 3 RM-5, line input frequency response at 1V output (0.5dB/div.) (right channel dotted)

channel. Output level at clipping was a very high 16.4V.

—Robert Harley

CLEARAUDIO VERITAS-S & GAMMA CARTRIDGES

Thomas J. Norton

Moving-coil phono cartridges. (Specifications the same for both except where noted.) Output voltage: 0.5mv at 1kHz at 5cm/sec. Frequency response: 10Hz–50kHz, ± 0.5 dB. Channel separation: Veritas-S, 35dB; Gamma, 28dB (1kHz). Dynamic compliance: 15×10^{-6} cm/dyne (vertical and horizontal). Recommended tracking force: 2.0–2.2 grams. Recommended loading: transistor preamp, 50 ohms to 200 ohms; tube preamp, 200 ohms to 47k ohms. Prices: Veritas-S, \$1295; Gamma, \$495. Approximate number of dealers: 50. Distributor: Clearaudio USA, 13122 Barbara Ann Street, North Hollywood, CA 91605. Tel: (818) 764-9554.

Ist der Clearaudio ein Tonabnehmer in der Spitzenklasse? Ist der Veritas-S und der Gamma besser den der Competitzen in der zellen und audiophillen mit der van den Huls und der Benz (nicht Mercedes!) und der Monster (nicht Godzilla!)? Ist wort der booten und der bollern?

I obviously picked up no great knowledge of German when I lived in West Germany from 1982 to 1984,¹ but I did become aware of the Clearaudio line of phono cartridges. I never did, unfortunately, have the opportunity to hear any of them. The general level of excitement in the German audio press² was, at that time, rising rapidly around the compact disc, which arrived shortly after I did. Within the

time span of one or two issues, the German press lowered their rating scale for *all* phono cartridges a notch, reserving their highest accolades for CD—in that respect they were not unlike our own commercial audio mags. In any event I was not in the market at the time for an expensive phono cartridge (and the Clearaudios *were* that, even at the then-dreamlike dollar/mark exchange rate). I didn't hear of the Clearaudios again until after I returned to the States and noted that one of their models was being marketed by Goldmund under their own name—and receiving some favorable attention. So when a pair of Clearaudios arrived from Santa Fe, I was intrigued. Had I missed a golden opportunity during my two-year watch on the Rhine? And was I now being given a second chance at Audio Valhalla?

The entire Clearaudio line, products of the creativity of German designer Peter Suchy, consists of ten models, all of which seem basically similar in design, but which vary in price from the "reasonably priced" Gamma to the \$5350

¹ Except for the requisite *Guten Morgen/Abend/Tag* and a smashing way with *Präulein, Schnitzel mit Pomme frites und haus Wein, bitte*. Though *Tonabnehmer* really is the German word for phono cartridge.

² As best I could determine. Although I could read nary a word of it, its general level of organization and copious charts and graphs made it more interesting, to me, than the commercial US audio press. I "read" them regularly. All except for *Das Obr*, the lone (to my knowledge) German hi-fi "underground," which was highly subjective, thus closed to me behind the language barrier.

Insider (aptly named, in my opinion). The latter has as its claim to fame being handcrafted from a solid block of Clearaudio's "special" lead alloy, with rounded contours and manufacturing tolerances of 0.001mm.³ The two pickups to be evaluated here lie at the more real-world end of the Clearaudio line, though neither is exactly low-cost.

In all of the Clearaudio pickups, the coils are mounted directly on the cantilever, one on each side of the pivot. Clearaudio makes a point of this "perfectly balanced, symmetrical design." No internal damping is required or used. A line-contact stylus (0.2 by 1.6 mil radii) called the "Trigon II," designed by Weinz (known for the Paroc stylus shape) and Suchy, is fitted to the hollow boron cantilever. Despite the higher than normal recommended tracking force for both pickups (2.2 grams), a stylus life of 1500 hours (3000 hours in any Souther arm⁴) is claimed. Normally, the internal damping material in a cartridge is as much a factor in the life of that cartridge as is the stylus. But although Clearaudio claims no internal damping, they are not apparently ignoring the flexible rubber doughnut in which the cantilever is suspended. Although the function of this suspension is not damping *per se*, it still must be made of a flexible material with some presumed damping properties, and may deteriorate with age. But *all* pickups have this limitation.

Internally, both the Veritas-S and the less expensive Gamma appear to be virtually identical (though closer tolerances and a resulting higher channel separation are claimed for the Veritas-S). But they differ considerably in body-shell material and mass. The Gamma, weighing in at 4.5gm, has a body shell composed of

a "non-resonant" epoxy. The Veritas-S, on the other hand, employs a "zero resonance"⁵ metal-alloy body and weighs a hefty 13.5gm. The mass of the Gamma was too low to fully balance out in the SME arm. I solved the problem by placing a small blob of EZ-tac on the top-front of the headshell area. Although the Veritas-S required a considerable rearward setting of the SME's counterweight, it balanced without difficulty. The external construction of the Clearaudios is unique: the terminals are mounted on the sides of the cartridge, flanking the body shell (one pair per side), rather than at the rear.

I encountered several set-up problems because of this configuration. First, the leads on the SME V tonearm were not long enough to reach the connectors on the outboard side of the cartridge. Fortunately, Clearaudio includes adapting pins designed to go between the cartridge terminals and the arm leads—they provided just enough extra length to make the connections. But Clearaudio also specifically cautions that the adapting pins be used at all times to avoid possible cartridge damage.⁶ This leads me to problem number two: it was impossible to use these adaptor pins on the inboard side (turntable-spindle side) of the cartridge—the offset of the tonearm on the SME resulted in excessive crimping of the tonearm wires with the extra half-inch or so length of the adaptors. I ended up using the adaptors on one side but not on the other. Problem three: the position of the mounting terminals and the resultant layout of the connecting leads, combined with the configuration of the stylus guard, made it difficult (though not impossible) to use the latter. Inserting and removing it was awkward and increased the potential of stylus damage by the very act of doing so. The stylus guard needs to be redesigned. And finally, with the connecting leads in place, access to the mounting screws (for readjusting, tightening, etc.) was nearly impossible; the alignment of the Clearaudios must be done *prior* to connecting the leads.

Both Clearaudio cartridges were auditioned, in turn, mounted in an SME V arm mounted on a SOTA Cosmos turntable. The remainder of

³ I've yet to be convinced that the resulting sonics will in any way suggest value for money. But I could be proven wrong, not having heard the Insider. I do have a suggestion, however. If you've got 5500 big ones to throw around on a phono cartridge, buy five \$1000–\$1500 models instead. Have fun for three months auditioning each in your system and pick the one that's the best match. In addition to giving five dealers a week at the lake, instead of giving one dealer a Caribbean cruise, you're also far more likely to get better overall sound in *your* system. Keep the first two runners-up on hand for that future date when you make a major change in your system and the synergism is no longer (perhaps) as good. Donate the remaining two to the home for wayward phono cartridges, care of me at this station. I'll give them loads of TLC. This suggestion cannot be interpolated to lower price points (i.e. three \$300 cartridges instead of a good \$1000 one). Laws of diminishing returns and all that.

⁴ Which strikes me as wildly optimistic. It must be noted that stylus wear is *not* warranted by Clearaudio. And the rights to the Souther are now owned by Clearaudio, which manufactures an updated version of the arm in West Germany.

⁵ Both the terms "zero resonance" and "non-resonant" were used in information supplied to me by Clearaudio. I admit to having difficulty seeing the semantic distinction.

⁶ The only possibility of damage that I can see is excessively tight tonearm lead connectors, which might stress (or even pull out) the body-mounted terminals on removal.

the system consisted of a Klyne SK-5a preamp (set to an 80 ohm load impedance), Mark Levinson No.23 power amplifier, B&W 801 Matrix Series 2 loudspeakers bi-wired with AudioQuest Green Hyperlitz (mid/tweeter) and standard Green (woofer). Interconnects were AudioQuest Lapis.

Veritas-S: the sound

I first set up the Veritas-S with the SME arm level with the turntable. The results were not encouraging. The sound was not tipped-up in the high end in an obvious fashion, but it did have a coldness about it, almost a sense of chromium plating, combined with notable lack of air and space. Overall, the sound was very coherent, but rather homogenized. I immediately began experimenting with the VTA (see sidebar); it didn't take long to determine that the optimum setting involved placing the rear of the SME as far



Clearaudio Veritas cartridge

down as that arm would allow, the limiting factor being the rear of the arm's clearance of the disc. The sound became much more three-dimensional. Much of the icy quality disappeared.

And a (discouraging?) Word on VTA

Since the Clearaudios were designed with a slightly higher than typical VTA, and required a rather pronounced rearward tilt to sound their best, this would seem like an appropriate time to get on my VTA hobby-horse, a horse of a somewhat different hue from that of many other reviewers.

Once I have determined the optimum VTA for a cartridge over a reasonable selection of recordings (though I admit to a preference for using Opus 3s for this setup), I generally leave it there—unless I later note a consistent problem (from a variety of recordings) which indicates that something is not right. We all know of audiophiles and reviewers who readjust the VTA for every recording—a prescription guaranteed to send a new audiophile screaming in terror to his or her CD player. The VTA I arrive at is almost invariably with the rear of the cartridge tilted down. Though perhaps not down enough, as the following quote may indicate—a quote which may be thought-provoking to the VTA-possessed: "most of today's records are cut with the vertical angle of 10° to 15° . So in order to reduce the distortion during playback, matching the two angles by moving or tilting the cartridge backward a few degrees may help reduce tracing distortion. Over the years disk-cutting standards have been agreed

upon, and the vertical cutting angle selected was 15° to 20° . Because most of the cutting heads, when mounted straight, cut at the angle of anywhere from 0° to 15° , special wedges have been manufactured to tilt the cutting head so that the stylus would be at a steeper angle. But because the use of the cutting head at such a steep angle involved the use of a special cutting styli [*sic*], wedges slowly disappeared and cutting heads returned to their original vertical position, which, of course, lowered the cutting angle, producing higher distortion in playback."¹ This appears to indicate that the correct VTA is well under 15° for nearly all recordings. Which also indicates, to me, that if the specified VTA of a pickup is well over 15° (and most are), then it must be tilted downward at the rear for lowest distortion. *But you may never be able reach the exact VTA used by the cutting head, due to practical limitations on the geometry of the playback system.*²

Sleep tight, VTAsers.

¹ Chapter 23, section 23.4.3 ("Vertical Tracking Angle"), *Handbook for Sound Engineers, The New Audio Cyclopaedia*, Glen Ballou, Ed., Howard W. Sams & Company, 1987.

² I freely admit that I base this conclusion on the quoted source. If the specified VTA of a cartridge is 20° , and the record was cut at 10° (quite possible, if I read the quote correctly), it may not be possible to correct for the 10° discrepancy. Informed dissenting (or reinforcing) opinions are welcomed.

But not completely. The Veritas-S, even after over 30 hours of break-in,⁷ never fully warmed up, remaining cool, detached, and analytical. While it did not sound dry or grainy in any manner, it seemed unable to fully convey the natural warmth and liquidity of voices and instruments in a musically satisfying manner. Two characteristics seemed to contribute to this quality. First, a high end which, while not initially "hot"-sounding with the "right" recordings, nevertheless ultimately registered as over-etched, especially with program material with considerable high-frequency energy. Second, it displayed a noticeably lean character throughout the mid- to upper bass. Neither quality alone would have been more than a minor negative, but together they added up to a combination which substantially detracted from the Veritas-S's positive attributes.

And it did have its moments. Its imaging was sharply defined; the individual segments of the drum-set on *Hot Stix* (M&K Realtime Records (Direct to Disc) RT-106) were precisely placed. Overall LF extension was excellent; the gut-wrenching lows on *The Apocalypse Now Sessions* (Wilson Audio Specialties W-8521) were clearly reproduced. Its presentation of depth, while less well-defined and -layered than that of the Benz-Micro MC-3 or Krell KC-100, was nevertheless good. It also did justice to dynamics—the aforementioned *Hot Stix* and the superb *Catch the Brass Ring* (Klavier Records KS566, a terrific recording of a Wurlitzer Band Organ)⁸ were wonderfully convincing and alive. And the Veritas-S "hangs together" with a coherency that marks it as a high-end product.

But despite its good performance in a number of areas, over the long haul the Veritas-S failed to convince. Again, its cool, at times even cold, demeanor was the culprit. *Jazz at the Pawnshop* (Proprius PROP 7778-79), though loaded with atmosphere through this pickup, ultimately came across as having too much of it; background audience noise was overly prominent. Upper partials of the saxophone were emphasized at the expense of body and warmth. Although *Acoustic Guitar* (East World

EWLF-98001)⁹—an old favorite of mine in demonstrating detailed, yet not overdone, guitar transients—was three-dimensional, with gobs of fingering detail, it was, for all of that, too clinical. Similar observations were made with full-scale symphonic works. Rachmaninoff's Piano Concerto 2 (Chesky Records CR-2), which had been so gorgeously reproduced by the Benz Micro MC-3, became threadbare and uninviting with the Veritas-S. Nor did chamber music fare well; *Italian Pleasures* (Sheffield Lab 16), though very cleanly reproduced, sounded overly crisp, the natural warmth and sweetness of the stringed instruments perceptibly hardened. This listener simply failed to be drawn into the music. Concerned that my break-in period had been inadequate (Clearaudio recommends 25 to 50 hours, the latter, in my judgment, an inordinately long break-in time), I gave the Veritas-S an additional 20 hours to settle down. While I noted a subtle improvement on some recordings, overall the Veritas-S still kept me at arm's length. Nor did an attempted reduction in loading to 50 ohms do any more than reduce the three-dimensionality of the sound. There is a partial upside to all of this. But I'll have to keep you hanging a bit until I discuss the Gamma, auditioned under the same conditions.

Clearaudio Gamma

After my experience with the Veritas-S, I wasn't looking forward to listening sessions with the Gamma. What lurked in the underbrush—a cartridge with the negatives of the Veritas-S and none of the positives? The experience promised to be a difficult one, and I was not happy about the prospect of playing Jaws to yet another Clearaudio.

Surprise! The Gamma proved to be everything that the Veritas-S wasn't. The differences between the two pickups were not extreme taken individually; there is no question of a family resemblance to the sound. The Gamma is cool rather than warm, taut rather than rich. But it inches closer to the ideal, and those inches count.

The Gamma, to be sure, sometimes hints at too much of a good thing in the high frequencies. The Respighi *Church Windows* (Reference Recordings RR-15/45RPM) was decidedly bright and rather dry; loud cymbal crashes, in

7 As in my Vol. 13 No. 3 review of the Benz-Micro, I did not listen to the Clearaudios until they had been broken-in in excess of 25 hours.

8 I was wondering whatever happened to Klavier. A call to their number on the LP turned up a new phone number and mailing address. They no longer, alas, make LPs, but many of their earlier recordings are now on CD, and some LPs are still available. They publish a small catalog. Klavier Records, P.O. Box 177, San Juan Capistrano, CA 92675. Tel: (714) 248-7527.

9 This is a Toshiba-EMI Japanese direct-disk pressing featuring Stefan Grossman and John Renbourn.



Clearaudio Gamma cartridge

particular, had an excessively raw quality to them. But other recordings, for example *Center Stage* (Wilson Audio Specialties W-8824), were open, clear, and airy—not lean or at all top-heavy. Still, the tendency to HF emphasis persisted on a significant number, though a minority, of recordings I trust. On the majority of such recordings, however, the high-frequency response of the Gamma registered merely as extremely *fast* and superbly detailed. “Subtle” (an adjective which often came to mind in my audition of the Benz-Micro MC-3) is not a word I would use to describe the Gamma, but then neither is “etched.” *Jazz at the Pawnshop*, hardly a reticent recording, was sharply focused, clear, and sparkling, but all within the bounds of a natural presentation. With the Gamma I found myself listening to whole sides of recordings, and dragging out old recordings I hadn’t played in years—both good signs. It passed my attempts to catch it out on voice reproduction—not without scars, but by a comfortable margin. The Gamma lacked only that last degree of “in-the-room” realism that brings voices to life; it could not match the Benz-Micro MC-3, with its subtlety and ease, or the Krell KC-100, with its dynamic liveliness, in this regard. But only rarely was I reminded that this was a less than top-rank cartridge. Only that occasional feeling of an overcooked high end gave it away. Certainly not its soundstaging—with a distinct sense of lateral placement and stable illusion of depth. Nor in its low-frequency response, either in extension or clarity—the hair-trigger sock of the bass drum on Stravinsky’s *Firebird* (Sheffield Lab 24) and the wall-rattling reach of the bottom end on *The Apocalypse Now Sessions* were equally well served. I was, in fact, as pleased by what I heard in the sound of the

Gamma as I had been disappointed by the Veritas-S. Of the cartridges I have recently auditioned or lived with, the Gamma most clearly resembles the Krell KC-100 in its detailing, soundstaging, and tight, well-defined low end. Both have the same tendency to approach going over the top at the, ah, top. The Krell sounds a bit more solid and “palpable”—largely, I feel, a result of its more natural mid- and upper-bass weight.

Measurements

Both Clearaudio cartridges were provided with refreshingly honest frequency-response plots—honest in that they did *not* show the ubiquitous straight line. Instead, a sharply rising HF response was depicted. My own measurements, using a different test record (the CBS STR-100) were a bit more flattering to both pickups, but still showed the rising high end.

The Veritas-S: notably flat up to 2kHz, dipping to -1.4dB (L) and -1.8dB (R) at 5kHz, crossing the zero axis again at about 10kHz, $+1.9\text{dB}$ (L) and $+1.3\text{dB}$ (R) at 14kHz, $+7.2\text{dB}$ (L) and $+4.2\text{dB}$ (R) at 20kHz. Midrange separation was in excess of 24dB.

The Gamma: flat within tenths of a dB to 1.5kHz, -1.2 (L) and -1.4 (R) at 5kHz,¹⁰ crossing the zero axis at about 10kHz, $+3.7\text{dB}$ (L) and $+2.6\text{dB}$ (R) at 14kHz, $+5.7\text{dB}$ (L) and $+4.1\text{dB}$ (R) at 16kHz, $+9.3\text{dB}$ (L) and $+6.2\text{dB}$ (R) at 20kHz. Midrange separation was in excess of 23dB.

Subjective tracking of both cartridges was very good at the recommended tracking force. I say “very good” rather than “excellent” because the coolness (and sometime hardness) of the Veritas-S and the difficulties of the Gamma in reproducing the cymbal on *Church Windows* are both sometimes indications of incipient mistracking. Overt mistracking, however, was not noted. (I’ve ceased measuring the 300Hz tracking via test record as it has failed to provide useful information relating to the subjective tracking ability of the cartridges I have reviewed to date. It has, however, been a helpful aid in fine-tuning anti-skating.)

As an aside, the Klyne preamp, you may recall, has a unique feature—the ability to selectively roll off the HF response through the moving-coil input to attempt to compensate

¹⁰ The dip at 5kHz has been so remarkably consistent from measurement to measurement, even being slightly larger in the right channel, that I am tempted to place part of the blame on the test record. Again, see my comments in previous cartridge reviews *vis à vis* such records.

for the rising response of many moving-coils. I no longer routinely use this feature (it would introduce another variable into the mix, one which would not be applicable to the majority of readers), but, as an experiment, I attempted to compensate for the Gamma's rising response. While I could flatten the response at 14kHz, this resulted in a dip of 1.5 to 1.7dB at 10kHz. I did not audition the compensated Gamma—hypothesizing that the dip at a lower frequency would conceivably be more audible than the peak at the higher one. There is a device, however, which is designed specifically to compensate for the high-frequency resonance of the Clearaudios—the Nestorovic Labs Moving-Coil Cartridge Network. A sample has been promised; I will provide an update if it proves useful with the Gamma and, especially, the Veritas-S.

Chapter 2

It's deadline time. I've completed the above review of the Clearaudios and, with the VPI TNT in-house for an evaluation, have remounted the SME tonearm, Gamma intact, on the upscale VPI. What's this? The Gamma is definitely warmer-sounding than before. Not to an extreme, but, despite a week's having passed since I last heard it on the SOTA Cosmos, there is definitely an added bloom to the sound. It's too early to tell if this is, overall, a plus or a minus (and this is definitely not intended as a mini-turntable review), but, with this pickup at least, it's there. The word "sweet" starts creeping into my vocabulary as used to describe the Gamma—it definitely did not before. And I have a harder time saying that it is occasionally bright. But since the Gamma was, in my original audition, still decidedly on the cool side of neutral, the added warmth now present isn't necessarily a negative. The Gamma is now merely a trace warmer and sweeter and sounds, perhaps, a bit less crisp. But wait a minute. Weren't excessive coolness and an overly analytical quality the very things which made the Veritas-S hard for me to cozy-up to? Might not a trip to the TNT teach the more expensive Clearaudio a thing or two about how to please the fussy reviewer? So it might, and so it did. To a degree. The added warmth improved matters from "cool, sometimes cold," to "generally cool, but not so much as to be bothersome." The high end was also marginally improved, though the Gamma, in my judg-

ment, still exceeded it in liquidity and (must I say it?) "palpable presence." All of this remains rather tentative in that my evaluation of the TNT is ongoing. (Readers who, again, are tempted to jump to pre-review conclusions about the TNT *vs* Cosmos from all of this should go back and reread my review of the Benz-Micro MC-3 in Vol.13 No.3, March 1990.) But, in fairness to the Veritas-S, it must be mentioned.

Conclusions

There's no way around it. While I did, eventually, get a bit closer to the music with the Veritas-S than I had initially, and while it is, given a synergistic match of associated equipment, a good cartridge, it simply never bettered the Gamma in my auditions. Furthermore, with a significant majority of sampled recordings, it failed to match it. Given the wide disparity in cost, I simply cannot recommend the Veritas-S. Not because it is a bad pickup, but because it simply was not, for me, special in a way that a pickup *must* be to command this sort of price. There are several less expensive pickups that I would choose first: the Audio-Quest 404i, Grado TLZ, and Audio-Technica OC9, all of which sell for \$500 or less. And the Gamma. Its measurements belie its striking performance. I admit I have more than a bit of trouble with that, as I had with the Krell KC-100, which the Gamma resembles to a remarkable degree—measurably and audibly. But this is hardly the first time that audible performance has won out over a mediocre, and normally important, measured parameter. We need only remember a recent case in these pages (Vol.13 No.1, January 1990). There, a certain very expensive digital processor (okay, it was the Wadia) wowed three of our writers with its sonics, despite a measured low-level linearity off somewhere in the next county (I have not, as of this writing, heard it). The Gamma also sounds terrific but measures poorly in at least one ostensibly important specification. (The analogy is not precise; low-level linearity in a CD player has been *hypothesized* to be an important measure of audible performance. Frequency-response errors within the range of human hearing¹¹ are *known* to be audible—

¹¹ Although one reader of the late *StereOpus* once wrote describing an experiment wherein he "proved" the audibility of the signal from a garage-door opener. I didn't catch which planet he was from.

though the degree of audibility of such deviations in the top octave varies considerably from recording to recording, system to system, and listener to listener.) But whereas the Wadia is one of the most expensive units on the market (where the resources should be available to fix a li'l ol' low-level linearity problem), the Gamma is a midpriced cartridge by today's standards. And its rising high end, like that of the Veritas-S, is a deliberate design choice—not, I would presume, to juice up the top end,

but to avoid the use of damping materials. I can't say that I agree with the decision. But neither can I argue with the overall sonic results.

It's a bonus that the Gamma is among the more affordable high-end moving-coils. I like it. A lot. And with the proviso that its top end should be matched to the rest of a system with reasonable care, I definitely recommend it. *Ist ein Klaraudio Gamma ein sehr guter Tonabnehmer? Zu besser believe it.* **S**

HARMAN/KARDON HD7500 & JVC XL-Z1010TN CD PLAYERS

Robert Harley

Harman/Kardon HD7500 CD player. Specifications: Frequency response: 4Hz–20kHz +0dB, –0.5dB. THD: 0.003%. Dynamic range: 98dB. Signal/Noise ratio: 106dB. Channel separation: 96dB. Line output level/impedance: 2V/10k ohms. D/A converter: linear, pulse-width-modulated bitstream. Power consumption: 20W. Weight: 11.9lbs (5.4kg). Dimensions: 17 $\frac{3}{8}$ " (443mm) W by 14" (356mm) D by 4" (103mm) H. Price: \$449. Approximate number of dealers: 70. Manufacturer: Harman/Kardon, A Harman International Company, 240 Crossways Park West, Woodbury, NY 11797. Tel: (516) 496-3400.

JVC XL-Z1010TN CD Player. Specifications: Frequency range: 2Hz–20kHz (no tolerance given). Dynamic range: 99dB (1kHz). Signal/Noise ratio: 108dB (at digital zero). Channel separation: 102dB (1kHz). Output level: 2V (full modulation). Digital output level: 0.5V p-p (75 ohm terminal impedance). Dimensions: 17.25" (435mm) W by 4" (115mm) H by 11.5" (375mm) D. Weight: 16.4lbs (7.4kg). Price: \$700. Approximate number of dealers: 100. Manufacturer: JVC Company of America, 41 Slater Drive, Elmwood Park, NJ 07407. Tel: (201) 794-3900.

I seem to have been listening to a variety of CD players and digital processors lately, my listening room having been a temporary home to seven CD players and two D/A converters.¹ From a \$200 Magnavox machine to the \$7800 Wadia 2000 Decoding Computer, my recent digital playback has certainly run the gamut of both price and performance. Having access to this vast range is extraordinarily helpful to a reviewer: it is easier to see where the product under evaluation fits in the overall scheme of things. In addition, hearing such a wide assortment of processors provides an interesting perspective on the cost/performance ratio: What sonic attributes does one gain by upgrading to the \$2000 level? The \$4000 level? The \$7800 level?

It was thus with great interest that I ap-

proached the review of these two promising low-priced CD players. I had high hopes for each machine: the Harman/Kardon HD7500 uses an interesting and radically different D/A conversion system, termed "3D Bitstream," it features the Matsushita "MASH" chip set, and the JVC XL-Z1010TN employs the K-2 Interface.

The HD7500 CD player is one of the first so-called "bitstream"² machines available in the United States and the first reviewed in *Stereophile*. The bitstream or, more loosely, "1-bit" digital/analog conversion system, offers many theoretical advantages over conventional converters, particularly when it comes to preserving good differential linearity on a consistent, machine-to-machine basis. (For a complete description of this new technology, I refer the interested reader to Peter Mitchell's excellent

¹ They were: Wadia Digital 2000, California Audio Labs Tempest Special Edition, Kinergetics KCD-40, Marantz CD-94, JVC XL-Z1010TN, Toshiba portable, Sansui AU-X911DG D/A section, Harman/Kardon HD7500, and the Magnavox CDB 472.

² I use the lower-case "b" here to distinguish the generic principal of decoding a datastream with a limited bit resolution DAC from Philips's "Bitstream" converter, a Pulse-Density-Modulation approach.

explanation in Vol.13 No.1, p.36.)

The JVC XL-Z1010TN's "K-2 Interface" is a circuit placed just before the digital/analog converter that removes jitter and non-code components from the digital datastream. According to JVC, jitter and other spurious junk superimposed on the digital waveform can degrade sound quality, even though the binary code (ones and zeros) is unchanged. The K-2 Interface presents the DAC with a jitter-free, perfectly shaped squarewave. This is my first opportunity to evaluate the sonic attributes of K-2 outside a brief demonstration in Japan last summer. (The K-2 Interface is discussed in detail in my *Industry Update* in Vol.12 No.9, p.36.)

The playback system used to evaluate the two CD players consisted of an Audio Research SP-14 preamplifier, and VTL 225W Deluxe monoblock tube power amplifiers driving bi-wired B&W Matrix 801 Series 2 loudspeakers. Speaker cable was AudioQuest Clear Hyperlitz, and interconnects were Magnan Type V and Expressive Technologies IC-1. The VTLs were also driven directly from each CD player through Electronic Visionary Systems' Variable Ultimate Attenuators.³

Harman/Kardon HD7500: \$449

The Harman/Kardon HD7500 is an attractive unit and has many useful display features. About a third of the black front panel, the portion containing the drawer, display, and display controls, is curved, giving the unit a modern, sleek appearance. The usual array of programming control buttons is found, including 11 direct track-access buttons. This allows the desired track number to be entered directly, instead of scrolling through each track number on the display. The HD7500 also has an unusual feature that allows the user to read a disc's individual track times on the display without the disc being in play. By pressing the "Check" button when a disc is loaded but in stop mode, the individual track times are displayed. Pressing the Check button again displays the next track's playing time. When several tracks have been programmed for random access play, the Check button displays the cumulative time of the programmed sequence. This feature is useful when making tapes of CDs.

A headphone output with variable level con-

trol is provided. This volume knob also adjusts the output at the rear-mounted RCA jacks labeled "variable." Fixed outputs are also provided, bypassing one additional amplifier in the signal path. Both pairs of outputs are gold-plated. The HD7500 does not offer a digital output; however, the next-in-the-line HD7600 includes both optical and coaxial digital outputs for connection to an outboard digital decoder. A full-function infrared remote control is supplied with the unit.

Inside, the HD7500 held a few surprises. First, I found no op-amps. Instead, discrete circuitry is used, with many transistors and their associated resistors and capacitors populating the single printed circuit board. This is unusual in such a low-cost machine, a circuit being far easier and cheaper to implement with IC op-amps than with discrete components. The second surprise was the apparent absence of LSIs (Large Scale Integrated circuits). A CD player's pcb is usually dominated by a chip set consisting of a decoder, digital filter, and DAC. The HD7500 had only three small ICs, one of which was covered by a heatsink. Since one of the chips is made by Sony (probably the decoder) and the other is a nondescript Mitsubishi, I assume that the chip hiding under the heatsink is the MASH DAC chip.

Construction quality is good, but the inside clearly reveals the HD7500 to be a mid-priced player. The power supply, digital electronics, and analog sections are all contained on the same pcb. The front panel is plastic, giving the unit a lightweight feel. Overall, the build quality is appropriate for a player selling for \$450.

Sound: The HD7500 was compared with the JVC XL-Z1010TN included in this review, as well as with a Kinergetics KCD-40. The Kinergetics, in my opinion, sets a benchmark level of performance for a \$2000 CD player.⁴ Also auditioned for comparison was the Magnavox CDB 472, a now discontinued player that sold for about \$200.

At first, I found the HD7500 listenable, but with the sonic limitations one might expect from a relatively inexpensive CD player. It exhibited a typically bright, hashy, and somewhat aggressive treble, the upper midrange and treble having a decidedly gritty character that

³ The Variable Ultimate Attenuators are small boxes with a stepped level control, mute and 20dB pad switches, and Tiffany RCA in- and output jacks.

⁴ There are two promising new \$2000 outboard converters from Wadia and Theta yet to be auditioned, however, as well as less expensive processors from Proceed and Aragon.



Harman/Kardon HD7500 CD player

imparted an unnatural roughness to instruments. Recordings that tended to be strident were even more so through the HD7500. Stravinsky's *Petrouchka*, performed by the London Symphony Orchestra on Deutsche Grammophon (400 042-2), is a good example. This recording has an intrinsic measure of glare that became more apparent through the HD7500. Flutes took on a brittle, scratchy character, and violins exhibited a steely tone in the high frequencies that obscured the instrument's timbre. Switching to jazz, cymbals became aggressive and spitty, without the delicacy heard from the live instrument. There was not the impression of brass being struck. Rather, the sound was more like a sizzle. This forward treble presentation tended to distract me both from the HD7500's virtues and from the musical performance.

Listening beyond the glare and stridency, however, I did hear some sonic characteristics that were surprising for a player in this price range. Low-frequency dynamic impact, weight, and punch were impressive. Even compared with the excellent Kinergetics KCD-40, the HD7500 had the ability to deliver low-frequency transients with authority. My favorite disc for listening to bottom-end punch is *James Newton Howard and Friends* (Sheffield Lab CD-23), especially the track "Amuseum." This recording has, in my opinion, one of the best recorded drum sounds I have experienced. It captures the explosive transients one hears from real drums, without sounding hyped. In particular, the drums sound natural, without the "boom-splat-boom" syndrome heard in many recordings. The bass drum that opens "Amuseum" is particularly revealing of a piece of equipment's low-frequency transient performance. Although the HD7500 did not match the KCD-40 in this area, it was nevertheless impressive for a CD player costing less than \$500.

The midbass exhibited a bit of tubbiness and congestion, obscuring detail in left-hand piano lines. Listening to Reference Recordings' new

Dick Hyman plays Fats Waller direct-to-CD recording, the clarity and articulation in the lower registers was somewhat diminished through the HD7500 than through other machines, including the JVC XL-Z1010TN and KCD-40. The midrange had a forward characteristic that moved vocals more toward the front of the soundstage. Although fairly smooth through the lower midrange, this forward presentation was less euphonic than the laid-back character of other players.

The soundstage was good laterally, with the ability to distinguish instrumental placement in a left/right perspective. In addition, soundstage width was impressive, the player casting a wide stage between the speakers. There was a lack of depth, however, there being very little of the front-to-back definition I find crucial to the listening experience. There was no sense of seeing *into* the soundstage. Instruments sounded crowded together. Like commuters on a train, their individuality was obscured by the congestion. Subtle detail was lost in this confusion, greatly diminishing the musical experience. The ability to distinguish instrumental detail and character during complex passages was far better through the JVC machine. The HD7500 also lacked a sense of air and space. Instruments and voices did not float unhindered in the soundstage.

The HD7500 exhibited audible errors on track 31 of the Pierre Verany test disc (PV.788032). This disc has a series of dropouts in the disc surface, increasing in length as the track number increases. The higher the track number the player is able to reproduce without audible errors, the better. Track 31, where the dropout became audible on the HD7500, contains a gap in the data of 1mm duration. While within the CD standard, this is not particularly impressive performance. The disc also has tracks that test a player's ability to correct successive dropouts. The HD7500 made it to track 47 (two 1mm dropouts per revolution) before errors were heard.

Measurements: The HD7500 measured well on the bench, as would be expected from a bit-stream decoder. Frequency response, shown in fig.1, was ruler-flat through the audio band. Frequency response with the de-emphasis circuit engaged (fig.2) shows a slight (0.2dB) rise in the right channel, though the left channel was flat. Analyzing the spectral content of the player's output when decoding a dithered -90dB, 1kHz tone (fig.3) reveals good linearity and a minimum of spurious, except for some low-level noise centered—very unusually—on 30Hz. Linearity, as seen in the "Fade to Noise with Dither" track (fig.4), was nearly perfect. (The left channel is shown; the right channel was effectively identical.) Generally, these are good measurements.

Looking at the 0dB, 1kHz squarewave tone from the CBS Test Disc, the waveform is shown in fig.5. The symmetrical ringing is typical of a transversal digital filter, though the slight leading-edge emphasis doesn't correlate with the flat frequency response. (One would expect a slight HF lift from the squarewave response.) Perhaps this slight emphasis of the leading edge correlates with the treble quality noted during the auditioning.

Turning to the low-level waveforms, fig.6 shows the undithered -70.31dB 1kHz tone on the CBS disc, which can be seen to be overlaid with spiky-looking hash. That this noise is ultrasonic in nature is revealed by recapturing the waveform with an audio-band low-pass filter in front of the storage 'scope (fig.7). The noise level was still high enough to obscure the very lowest level modulation, as can be seen from fig.8, an undithered -90.31dB tone, which in the absence of noise should appear on the 'scope to step between three distinct levels.

Conclusion: I must admit to being disappointed by the HD7500, the first "bitstream" player I have auditioned. However, the new technology cannot be judged solely by listening to a budget player, especially in light of Martin Colloms's recent enthusiastic review of the new Meridian player⁵ that also employs 1-bit technology. I also suspect that later generations of 1-bit machines will offer significantly better performance.

Harman/Kardon's HD7500 CD player, although exhibiting some good sonic attributes

for its modest price, has enough strikes against it in my opinion to preclude a recommendation for use in a system with high-end pretensions.

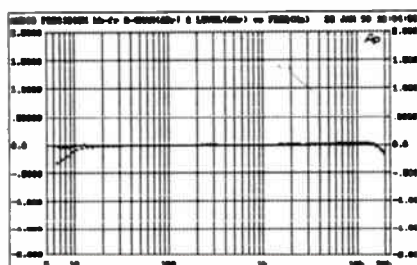


Fig.1 H/K HD7500, frequency response (RH channel dotted)

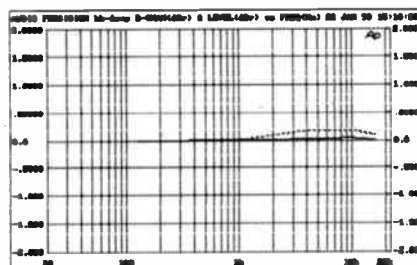


Fig.2 H/K HD7500, de-emphasis error (RH channel dotted)

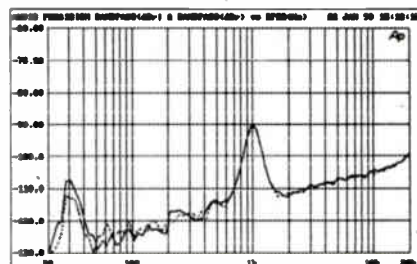


Fig.3 H/K HD7500, dithered 1kHz tone at -90.31dB, with spurious and distortion, RH channel dotted

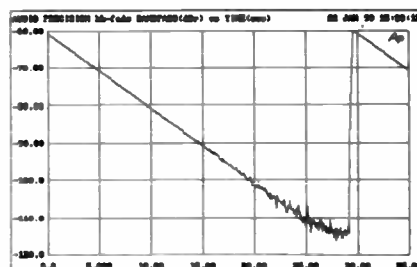


Fig.4 H/K HD7500, left channel fade to noise with dither

⁵ In the January 1990 issue of *HFN/RR*.

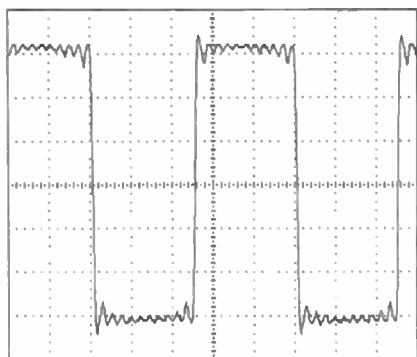


Fig.5 H/K HD7500, 1kHz, 0dB squarewave (2ms window)

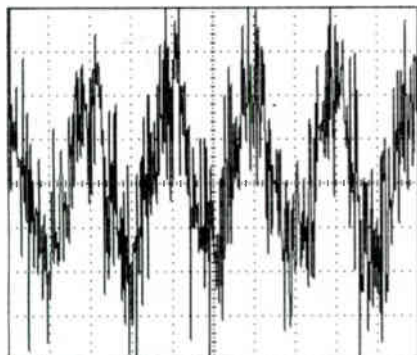


Fig.6 H/K HD7500, 1kHz undithered tone at -70.31dB (5ms window)

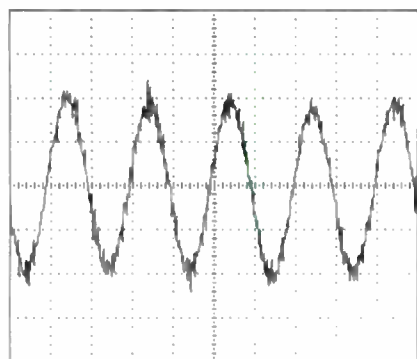


Fig.7 H/K HD7500, 1kHz undithered tone at -70.31dB (5ms window), with audio-band low-pass filtering (-1dB at 20kHz)

sions. In particular, the somewhat aggressive treble and the lack of soundstage depth are significant subjective weaknesses, music tending to assume a feeling of sterility, devoid of warmth.

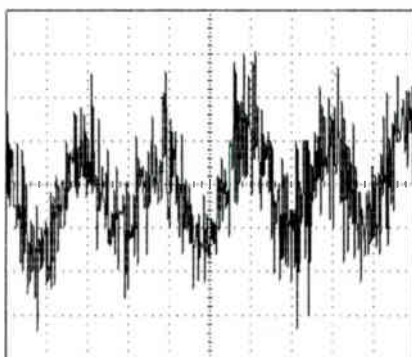


Fig.8 H/K HD7500, 1kHz undithered tone at -90.31dB (5ms window) with audio-band low-pass filtering (-1dB at 20kHz)

However, the importance of these performance aspects to musical enjoyment will vary greatly with the type of music. Rock, for example, suffers less from these deficiencies and is able to benefit from the HD7500's powerful, dynamic bass and wide presentation of soundstage.

While the HD7500 was clearly superior to the obsolete Magnavox CDB 472 (which uses the standard Philips 16-bit chip set), and offers decent performance for the money, it suffers by comparison with the \$250-more-expensive JVC XL-Z1010TN. However, if \$450 is the absolute top end of your budget, and your system could use a little sparkle, then the HD7500 CD player may be for you.

JVC XL-Z1010TN: \$700

The XL-Z1010TN is JVC's top-of-the-line CD player, employing an 8x-oversampling digital filter and dual 18-bit Burr Brown PCM56 DACs. The "TN" in the model number denotes the titanium finish, unique to JVC products. Also unique to JVC is the K-2 Interface incorporated in the XL-Z1010TN that intrigued me during my visit last year to JVC's R&D laboratory in Japan. The K-2 Interface removes jitter from the datastream just before the DAC by resampling the pulses with a short-duration gate. Since entirely new pulses are generated with correct timing, noise and misshapen waveforms do not reach the DAC. The circuit also isolates the DAC electrically by optically coupling the datastream to the D/A converters.

The XL-Z1010TN's front panel appears to be quite simple, the only obvious controls being



JVC XL-Z1010TN CD player

power on/off, a play/pause button, and an output volume control. Underneath a pull-down panel, however, lies a multitude of buttons for random play, track search, and an 11-button direct track access row. Since these functions are duplicated on the infrared remote control, JVC chose to put these controls behind the panel, streamlining the look of the player. JVC takes the "Check" function of the Harman/Kardon HD7500 a step further. The XL-Z1010TN incorporates a feature called "Editing" that automatically selects a combination of tracks whose cumulative duration matches the length of tape to be recorded. The user enters the tape length via the direct input keypad, and the machine selects those tracks that will fit on the tape. After the tape is turned over, the machine selects those tracks skipped on the first tape side. (The RIAA will love this feature!)

Removing the cover reveals an impressive build for a machine at this price level. The power supply appears heftier than the Harman/Kardon, and the electronics are split between three boards. The XL-Z1010TN's construction, however, does fall a little short of the similarly priced Philips CD 880 (now replaced by the CD80), a favorite among tweekers for its exceptional build quality.

The rear panel has both fixed and variable gold-plated analog output jacks, as well as optical and coaxial digital out. The XL-Z1010TN also has a "Compu Link" jack for connection to other JVC equipment, synchronizing recording or providing automatic source selection.

Sound: Following my audition of the HD7500, I was pleasantly surprised by the performance and musicality of the XL-Z1010TN. The XL-Z1010TN's sonic characteristics were much more akin to what one hears from a high-end product than from a mass-market machine.

First, the treble harshness of the HD7500 was gone. The XL-Z1010TN had a much more laid-back, relaxed presentation that I found more musical. Its treble balance was smooth, leaning

toward the upper-octave performance of the Kinergetics KCD-40. Although the XL-Z1010TN lacked the sweetness and absence of grain I found in the KCD-40, the JVC machine still had a very natural tonal balance. The stridency and harshness I heard in the DG *Petroucbka* mentioned earlier was greatly ameliorated through the XL-Z1010TN. Violins had a more natural timbre and flutes lost some of their glare. Cymbals had more definition, their sound no longer dominated by the spitty component heard through the HD7500. However, the treble presentation still had a hint of a metallic edge so common in all but the best CD players and digital converters.

In terms of soundstage depth, openness, and a sense of air, the XL-Z1010TN's performance was a quantum leap over the HD7500. In fact, the depth and transparency of the soundstage were the XL-Z1010TN's forte, and surprising for a player in this price range. Listening to the title track from the soundtrack of *Round Midnight* (Columbia CK 40464) through both machines was revealing. Through the JVC machine, there was a feeling of transportation to the musical event created by the presentation of instruments in three dimensions, with space between them. The hi-hat, at the right rear of the soundstage, was decidedly *behind* the other instruments and seemed to float in space. This impression was not approached by the HD7500. The spatial resolution, openness, and ease were far beyond what one would expect from a \$700 CD player.

The sense of depth and spatial resolution may be attributable to the K-2 Interface. At a demonstration in Japan with and without K-2, I heard more spatial detail and low-level resolution with the K-2 Interface. However, I cannot be sure since the K-2 Interface is always engaged in the XL-Z1010TN. Considering the machine's superb soundstage and low price, I suspect that K-2 may indeed play a part in this aspect of its performance.

To see how the XL-Z1010TN stacked up

against an audiophile machine, I compared it with the Kinergetics KCD-40, a player noted for its transparency and depth of soundstage. Listening to the same recordings on both players, I was not surprised to find that the KCD-40 provided a greater illusion of space and depth. I was surprised, however, at how close the XL-Z1010TN's performance came to the more expensive machine. The HD7500, under the same test conditions, could not begin to approach the performance of the KCD-40.

The XL-Z1010TN's low-level resolution and detail were impressive. Depth of soundstage is closely linked to a player's ability to render fine detail, in my experience. It was not surprising, therefore, to hear that the JVC machine presented finely woven detail with clarity and precision. During complex passages, an individual instrument's character could be distinguished from other instruments. On Jim Brock's *Tropic Affair* CD (Reference Recordings RR-31CD), for example, subtle percussion sounds could be clearly distinguished through the rest of the mix.

After extended comparison with the KCD-40, however, I felt that the XL-Z1010TN's detail was a little *too* etched and analytical. It did not have the sterility of the HD7500, but it did lack the ease and unstrained quality of the KCD-40. This characteristic was not severe enough to make music unpleasant, but it did contribute to a sense of listening fatigue after a long session.

The XL-Z1010TN had excellent dynamics, there being a feeling of effortlessness during musical climaxes. Bass impact was taut and crisp, without boom or muddiness. Midbass was far better articulated than through the HD7500, the latter having a slightly wooden character. The XL-Z1010TN's low-frequency presentation was well defined, with a certain roundness and liquidity not usually associated with a player of this price. Comparing this aspect of the JVC's performance with the Kinergetics KCD-40 revealed the KCD-40 to be superior, but not embarrassingly so to the JVC.

The XL-Z1010TN reproduced the test tone on the Pierre Verany dropout test without audible errors until track 36 (one 2.5mm duration dropout per revolution). During the successive dropout test, audible errors were not heard until track 49, two 2.4mm dropouts in succession. These results suggest excellent error correction.

Measurements: The XL-Z1010TN did not perform as well on the bench as the HD7500. The frequency-response graph (fig.9) shows a slight rise in the upper octaves, reaching about +0.8dB at 20kHz. The frequency response with de-emphasis applied (fig.10) also shows the same rising top end. Analysis of the dithered -90dB, 1kHz tone (fig.11) shows little audio-band noise and spurious, apart from a high level of second-harmonic distortion on the right channel (the 2kHz peak on the dotted trace). Repeating the test with a dithered -70dB tone showed no trace of this anomaly, indicating converter misalignment at low levels on this channel. The "Fade to Noise with Dither" track

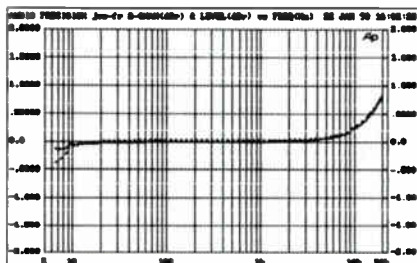


Fig.9 JVC XL-Z1010TN, frequency response (RH channel dotted)

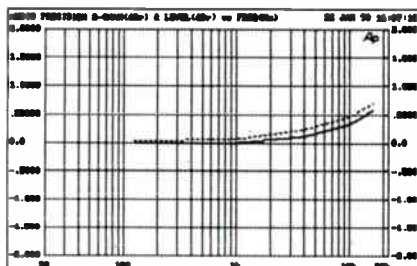


Fig.10 JVC XL-Z1010TN, de-emphasis error (RH channel dotted)

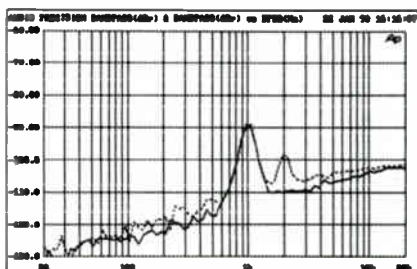


Fig.11 JVC XL-Z1010TN, dithered 1kHz tone at -90.31dB, with spurious and distortion, RH channel dotted

(fig.12) shows very good linearity for the left channel. (The right channel was identical, despite the higher distortion at very low levels.) Fig.13 shows the undithered -90.31dB waveform, which should reproduce as a stepped waveform with three distinct levels, +1, digital 0, and -1 . Although a degree of ultrasonic noise can be made out, this shape can be discerned, implying excellent resolution.

Looking at the high-level performance, fig.14 shows a 1kHz , 0dB squarewave. That the digital filter clips with this signal is shown by the overall flat nature of the waveform tops, which actually should reveal a decaying sinewave ring. The implication here is that the filter has been optimized for low-level performance. Note, however, the leading-edge overshoot to the squarewave. This correlates with the measured treble boost in fig.9, though as to why the JVC's highs sound different from the H/K HD7500's, I have no idea.

Again, we are faced with a situation where the player that measures worse sounds better. This paradox is discussed in the review of the Wadia 2000 in Vol.13 No.1. The Wadia was the best-sounding converter I had heard, but also had the worst bench performance.

Conclusion: After extended listening to the JVC XL-Z1010TN, I am very impressed by its performance, especially considering its \$700 retail price. It is far superior to the Harman/Kardon HD7500 that sells for only \$250 less. In fact, its musicality is closer to the \$2000 KCD-40 than to the HD7500, despite the lopsided price differential. The XL-Z1010TN's soundstage openness and transparency were particularly impressive for such a modestly priced player. In addition, the treble presentation lacks the harshness and glare one usually hears from budget machines.

The musical differences between the XL-Z1010TN and more expensive audiophile players (KCD-40, Tempest Special Edition) were quantitative rather than qualitative. The audiophile machines tended to handle each performance aspect—smoothness, transparency, soundstage, detail, etc.—better than the JVC, but the XL-Z1010TN still exhibited the fundamental characteristics of a truly musical high-end CD player. How much the K-2 Interface contributes to the machine's musicality is an interesting question. Short of getting a sample with defeatable K-2, or attempting to bypass the K-2 cir-

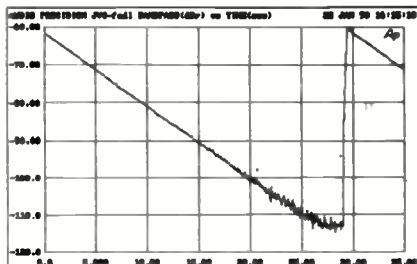


Fig.12 JVC XL-Z1010TN, left channel fade to noise with dither

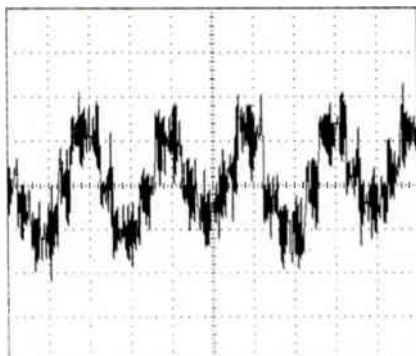


Fig.13 JVC XL-Z1010TN, 1kHz undithered tone at -90.31dB (5ms window)

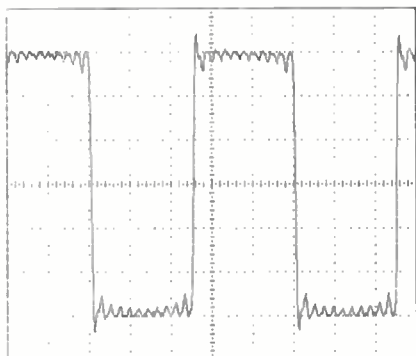


Fig.14 JVC XL-Z1010TN, 1kHz, 0dB squarewave (2ms window)

cuit, we may never know.

Although this JVC is not as smooth or as laid-back as some audiophile players, it nevertheless is musical and involving, as are very few machines under \$1000. The fact that the XL-Z1010TN is solidly constructed further adds to its value. Considering the XL-Z1010TN's many musical attributes, I can give it an enthusiastic recommendation. It offers a glimpse of high-end digital playback at a mid-fi price. **S**

CALIFORNIA AUDIO LABS ICON CD PLAYER

Guy Lemcoe



CD player with 28-function remote control, optional plug-in coaxial digital output, 18-bit DACs and 8x-oversampling digital filter. Frequency response: 5Hz–22kHz +0, –0.5dB. Dynamic range: 105dB. S/N ratio: 95dB. Channel separation: 91dB. Output impedance: 150 ohms (15 ohms measured). THD at 1kHz: 0.005%. Dimensions: 17½" W by 12¼" D by 3¾" H. Weight: 10 lbs. Price: \$695. Optional factory- or dealer-installed coaxial digital out: \$95. Approximate number of dealers: 91. Manufacturer: California Audio Labs, 7231 Garden Grove Blvd., Suite E, Garden Grove, CA 92641. Tel: (714) 894-9747.

I must admit, upfront, to a bias. Years ago, I bought the first digitally recorded LPs and found them, without exception, almost unlistenable. What they did to the music was vile and inexcusable, in my opinion, robbing the musical experience of its realness, its body, its richness and soul. What few digital LPs I owned at the time I either sold or traded off. I didn't want the damn things in the house! I had to soften my stance, though, because more and more of the record companies were going digital and if I wanted the music they offered, I would have to succumb to their music-by-numbers game. Being, by nature, both gullible and inquisitive, I bought a CD player (Magnavox 2040), thinking perhaps the CD, which was making its presence felt more and more each month, would enable me to enjoy this new technology. How wrong I was. I was unable to get involved with what I heard out of my speakers. To be sure, I appreciated the seeming indestructibility of the discs and the convenience of their design. Yet I remained unconvinced of their ability to serve the music. They sounded lousy, with screechy highs and "one-note" bass. They were two-dimensional and lacked the resolving power of even my modest analog front-end. They compressed the soundstage and altered the timbre of the instruments they were reproducing. They were costly in both real and emotional terms. Ugh!

The many critics of this new "breakthrough" articulated their views in no uncertain terms.

Few in the record industry listened, however, and today we are faced with the virtual elimination of the analog LP as a storage medium. It has been replaced by the CD, that 4⅞"-diameter silver pancake with the hole in its center and, for the most part, ecologically insensitive packaging. And it is with this new format we music lovers must learn to deal and live with.

Well, let me tell you, from what I have heard during the course of this review, that period of adjustment will be relatively painless and living with CDs will not be at all as difficult as I had earlier expected. No, I'm not about to sell, in a fit of reckless abandon, the thousands of LPs I have accumulated over the years (even as I observe the rapidly escalating prices vintage vinyl is commanding). And yes, I will continue to upgrade my analog front-end to better serve the vinyl which I so dearly treasure. But the time has come to accept the inevitable and enjoy it. Besides, most of the releases I get for review from Richard Lehnert these days are issued on CD only, and I am finding it more and more difficult to say, with any conviction, that one medium is preferable or superior to the other on purely sonic terms. In fact, on the basis of value, I have been finding CDs to offer more music for the buck. Indeed, with the current infatuation with releasing archival material (heretofore unavailable in any format) on CD, I and my music loving friends owe the providers a generous dose of gratitude.

Thank you!

I don't want to get into an irresolvable argument over which medium is best and why or why not. By now, any such discourse is academic. I could care less about how the music is presented, so long as it provides me an involving experience. LP, CD, tape, and radio have all provided moments of joy for me and my friends in listening sessions. It's not the means, it's the message that counts. I would like to see a survey taken among *Stereophile* readers of the ratio, expressed in dollars, between their software and hardware investments. I feel the data could be quite revealing, as I suspect a positive correlation between modest systems and extensive music collections, with the reverse holding true for more costly systems. I could be wrong—perhaps we shall see.

Background, construction, ergonomics

California Audio Labs has made a lasting impression on the high-end audio community, beginning with their launch of the first all-tube analog stage CD player, the Tempest, at the 1986 Summer CES. It sold, back then, for \$1895 and was a single-chassis, Philips-based player with 16-bit 4x-oversampling DACs and digital filter. The Tempest Mk.III, due to appear this June, will offer 20-bit DACs and 64x-oversampling digital filter and the same twin-chassis construction of the Mk.II. It's expected to retail for \$4995 and, I'm told by CAL's Art Paymer, reflects the philosophy at CAL that every aspect of design, from circuitry through mechanical systems, is a product of their research, development, and testing (this attitude extending to the development of all four of the players in the CAL line). For those not so well-heeled, CAL offers the Mk.III Aria at \$1995.

All the versions of the Tempest, as well as the earlier Aria, have been well-received by *Stereophile's* reviewers, so it would seem that CAL is on to something here in their CD player offerings, albeit at a price point beyond most of the mass-marketed Japanese products. People with limited budgets for hi-fi systems, however, seem to demand a CD player with "good" sound that costs less than \$1000. Enter the Icon, introduced at the Summer CES last year with a retail price of \$695. Watch out Denon, Sony, Nakamichi, Marantz, Technics, JVC, Yamaha, and be prepared to share some of that lucrative market—there's a new kid on the block and she's made right here in the good ol' USA.

The Icon, along with its more expensive sibling, the Tercet Mk.III (\$1295), is a totally solid-state design using CAL's proprietary digital circuitry. Hand-trimmed Burr-Brown 18-bit PCM 61P DACs are used, one for each channel, these mounted on a small "piggy-back" pcb above the single main board. There are five separate regulated power supplies in the Icon for component stability, and an FET analog output stage. The 24-bit digital filter used by CAL is said to provide 8x oversampling with true 18-bit resolution. Other features of the Icon are star grounding for high-frequency noise rejection, a custom clock module said to be trimmed to extremely close tolerances (25ppm), EMI filtration on the incoming AC line to remove noise upstream of the power supply, and a linear drive transport with a magnetic clamping system (mechanically noisy, but apparently effective). Both the Icon and Tercet Mk.III house the new CAL linear-drive, glass-optics, single-laser transport. Construction quality seems to be first-rate.

The Icon is attractively styled and housed in a black aluminum chassis with a 1/8" -thick front plate. The on/off switch (which incorporates a turn-on mute timer) is located just above and to the left of the loading drawer, which will also accommodate the seemingly-headed-for-extinction CD single. Silent this drawer is not—it reminded me of my old Magnavox. If you judge a CD player on the smoothness or quietness of its loading drawer, you will probably pass on the Icon. But that would be a big mistake, as you will soon see. Two RCA output jacks (apparently Tiffanys) are the only items found on the rear panel.

The usual complement of controls graces the front panel below the display window. I wish the labels were more visible, though. The gold printing above each control is damn near impossible to read in all but a well-lit room. All but three of the controls are duplicated on the remote control, however. The missing ones deal with the disc-to-tape copying feature. Direct-access play is conveniently made via the remote control, as is Program Play (in which a maximum of 20 tracks can be programmed).

In search mode (which is two-speed), the output level is decreased 12dB compared to the normal level. This is a nice feature (especially easy on the ears) when you want to shuttle back and forth to study a particular segment of music. It sure beats the hell out of manually

cueing your tonearm over and over, as well as being quicker, more accurate, and less worrisome. Skip play is self-explanatory, but be aware that to access a previous track, you must press the button twice, in quick succession. Repeat play is available for parties and such (I guess). Music scan plays the first 15 seconds of each track on the disc. Personally, I do not see the need for this feature, for 15 seconds is just not enough time for me to evaluate a musical selection.

Recording from CD to cassette tape is made easy on the Icon. The player will calculate the number of tracks (up to 21 maximum) which can be completely recorded on each side of a cassette tape of a specified length (up to 99 minutes). With automatic editing, the Icon calculates which tracks can be recorded on both sides of the tape (either as they appear on the CD or in the sequence in which the desired tracks are programmed for play) and subsequently programs those tracks for play. This feature should please all those who feed their cassette decks regularly to make custom tapes for their cars or friends. I am envious at how easily this can be accomplished—I've made many such tapes using my record player, and it ain't fun, folks. To add insult to injury, you can even perform the above operation using multiple CDs via the disc-link function.

It's not fair! I'm beginning to realize how one can become smitten with the convenience provided by a good CD player. They take so much of the labor out of the processes involved in presenting the music, you find you have much more time to actually sit back and enjoy it.

The only obvious features not found on the Icon are a headphone jack and volume control. I am told by CAL that each of these "features" adds circuitry which degrades the sound of the machine.

Sound

Since my last review, I've made a couple of major changes in my system and it is now noticeably more revealing and musical sounding. The Conrad-Johnson PV-9 preamp (a love affair is beginning to happen here) has replaced my trusty PS Audio 4.5, and my Kenwood L-07M amps have been retired to make way for the Quicksilver KT-88 monoblocks (another love affair—stay tuned). Interconnect between preamp and amps remains Kenwood, and Kim-

ber KCI links CD players to the PV-9. My Acoustats still sound fine (better than ever before, actually), and my search for reasonably priced speaker cable seems to have ended with TARA Labs Space & Time Phase II with TFA Return. Oh yes, I also rearranged my listening room so the speakers are now firing down the long axis. The difference in sound has to be heard to be believed! I never knew the old Acoustats were capable of such bass extension (nor did a close friend of mine who used to own a pair). Every parameter by which systems are judged has been improved.

Other CD players I had on hand for listening comparisons were the Harman/Kardon HD7500 and the XL-Z1010 from JVC, both reviewed elsewhere in this issue by Robert Harley. The JVC and Icon are priced within \$5 of one another; the Harman/Kardon is about \$250 less. Some may feel including the Harman/Kardon in my listening evaluations is not fair since it is not as costly a player. It is among the first of a new generation of players which use bit-stream DAC technology, though, and I could not resist the temptation to try it (and, as you will see, in my opinion H/K has nothing to be ashamed of). After setting up the players, they were plugged in, turned on, and left on. I did not leave the other components on continuously, for replacement tubes are expensive these days. Before any serious listening was done, however, I let everything cook for at least eight hours.

Several weeks were spent listening to CDs so I could "burn in" my ears to this new format. I needed to come down off my vinyl high gradually, so I could adjust (?) to the sound I was hearing. What emerged after this period was an appreciation for the advancements which have occurred in the few years since the introduction of those first CDs and players. As they say in the ads, "You've come a long way, baby," and my ears tell me the trip has been worthwhile.

I was initially struck with the feeling of how good, overall, each of the players sounded. I was unaware of the digital "nasties" I had heard earlier in my exposure to this format. Bad CDs still sounded lousy and were virtually unlistenable compared to their vinyl counterparts (which in many instances wouldn't win any prizes either, though they were easier to listen to), but the better CDs now available subtly drew me into the musical experience so I could

become involved with what was happening in the studio, on the stage, or in the hall. Layers of electronic "haze" were lifted in one fell swoop, and I felt closer, in a figurative sense, to the performers. The sense of rhythm and timing (the warp and weft of music) and dynamics (the soul) which I have become accustomed to in listening to records were not obscured. Neither was the sense of "rightness" in the presentation of instrumental timbres.

Music emerged from a totally silent background, except for occasional analog tape hiss, and swelled up into a wave which enveloped the listener. The flat perspective on a performance and the cardboard-cutout representation of the performers which I had heard earlier was replaced, on the best CDs, by a real sense of space, the acoustic characteristics of that space and an almost palpable performer presence.

A good example of what I'm talking about is track 7 on the *Astrée* sampler CD (*Astrée E 7699*), a piece written for harpsichord by Louis Couperin and played by the impassioned Blandine Verlet on a gorgeous-sounding 1624 Hans Ruckers II instrument. On the Icon and with the volume adjusted to a realistic level for this type of music, Ms. Verlet and the harpsichord assumed a position in the room several feet in front of the speakers. The outline of the harpsichord was clearly perceived as a physical entity occupying a rather closed-in acoustic space. I felt as well as heard the presence of the soloist; it was easy to visualize Ms. Verlet sitting at the keyboard just in front of and to the left of the listener, the body of the instrument stretched out in front of her. I heard all of the subtle, incidental noises (intakes of breath, the release of pressure on the strings when the fingers are removed from the keyboard, and the occasional shuffling of the soloist in her chair) which accompany a performance accurately located within this intimate, somewhat dry, acoustic space. The sound of the harpsichord was rendered naturally, with the appropriate "snarly" sound to the mid and treble range and a proper "buzz" to the bass. I had the definite sense that the instrument is no lightweight—the bass had body and weight, extending from the soundboard through the legs to the floor to which it is firmly anchored. The rich tonal colors of the instrument were captured exquisitely with a ladder of overtones that seemed to reach to the ceiling. The decay following the last chord faded slowly into

silence with no abrupt cut-off.

Of the three machines, the CAL was the winner in preserving this nuance of music. The rhythm of the piece was preserved, the timing was impeccable, and the sense of dynamics was conveyed convincingly, with excitement and flair. This is an involving performance of exciting music which has not been diluted either by the recording or the transfer to disc.

This track helped me crystallize my thoughts on the sound of the three players. Compared with the Icon, the JVC sounded leaner, especially through the midrange. The midbass lacked body and weight, which gave me a feeling I was listening to a smaller instrument not firmly anchored to the floor. This lack of body perhaps contributed to my sense that the sound was somewhat disembodied and lacking in focus—the soloist seemingly seated further away from the keyboard than I perceived through the Icon. The sound of the harpsichord lacked that certain degree of "richness" I'm accustomed to hearing at live performances. The JVC sounded like lemon meringue tastes, the Icon more like chocolate mousse. Nevertheless, I got involved in the performance with the JVC, and felt that its resolution was equal to that of the Icon. It seemed to present a more "airy" acoustic to the venue, though I'm not sure this is accurate. The sense of rhythm, timing, and dynamics was also excellent.

The most noticeable characteristic of the Harman/Kardon when compared with the other machines was its lack of rhythm and timing. The entire performance seemed sluggish to me. I kept wanting Ms. Verlet to get on with it. She sounded as if she was being held back by some invisible force. I attribute this to a lack of speed in the player's ability to handle sharp transients. The beginnings and endings of the notes seemed to get in each other's way, lending a more confused sound to the performance. I also found it difficult to get involved with the music heard through the H/K, a result, in my opinion, of its overall lack of dynamics. Of the three players I listened to during this review, the H/K sounded the most like "hi-fi" to me, due, perhaps, to its rather forward presentation (especially in the treble range). I would liken the sound of the Harman/Kardon to the taste of a chocolate sundae.

Let me say, before I go any further, that the differences I heard among these machines became clear only after repeated, directed

listening. In some instances, I'm talking about very subtle differences which would go unnoticed under more casual conditions. Also keep in mind the associated equipment I used. Other set-ups might be more sympathetic, say, to the JVC or the Harman/Kardon. After weeks of listening, I just locked in to the sound of the CAL in my system. It just seemed to be the right one for my particular listening situation.

I can't guarantee it would be so in yours. You must listen for yourself and then decide what sounds best to you in your room. In order to be able to do this, you must cultivate a relationship with a good dealer who will allow you to take equipment home. It's also important to select CDs carefully, for there are many bad ones in the bins. Here, again, a good dealer with a knowledgeable staff can be an invaluable resource. I was enlightened recently when Mike Mandell, a friend of mine and a serious listener, brought over a CD of one of my favorite harpsichord recordings (HM 1026). It is a collection of pieces written by Johann Fischer in 1696 and elegantly played by William Christie on a luscious-sounding William Dowd instrument. At least it sounded that way on vinyl. The CD (HMA 1901026) sounded as if Christie had changed instruments. Gone was the rich tonal character of the Dowd. It had been replaced by a brittle, lifeless simulacrum of itself. We were both disappointed with what we heard, and agreed that Harmonia Mundi really dropped the ball on this one. It is a mid-price release, though, and perhaps therein rests the explanation (watch for Bob Harley's upcoming exposé on CD quality soon). Read the music reviews in *Stereophile* and other journals, especially *Fanfare*, to get opinions on performances and recording quality. Do your homework, otherwise you will be stung; the bite can be costly.

Conclusion

At my request, John Atkinson brought over a test pressing of the new *Stereophile* Test CD for a listen. I had begun to approach the point where listening fatigue was setting in, and I felt the need to get another opinion on the sound of these players. I was encouraged that John and I heard similar differences among the units when listening to that CD. What better resource than to listen to recordings in the company of the person who engineered them? In general, the consensus was that the CAL was one hell

of a CD player, especially for the price. It did nothing to distract from one's enjoyment of the music. Neither did the JVC, though in my system, it lacked the richness of the CAL. In both JA's and my opinions, though its presentation was considerably flatter, with less seductive high frequencies, the Harman/Kardon did surprisingly well in direct comparisons with the other two players. At its \$449 list price and the possibility of even better street prices, it could become a best buy.

Listening to the CAL Icon was always a pleasure, especially if the CD was true to the music. Throughout the course of this review many CDs (owned or borrowed) were loaded into the drawer. I was rarely disappointed, even in direct comparisons with LPs. I feel too much attention is given to the quest for what is the "best" when it comes to the reproduction of music, and not enough to what makes the music worth listening to in the first place.

One of my references for music is the annual Santa Fe Chamber Music Festival. It's there, where music is performed live, direct to your ears, I begin to reflect on the current state of high-end audio. Have we perhaps lost sight of the forest in our search for the trees? I sense a certain lack of attention to that inexplicable quality called "musicality" among many of the contenders to the throne of state-of-the-art sound. There seems to be a mania for seeking "accuracy" in sound reproduction. Is the sound I hear in the St. Francis Auditorium *accurate*? It's real to me. I can enjoy it without being worried about what makes it happen. And it is this freedom from anxiety which I experienced listening to the CAL Icon. I forgot about nit-picking fine details of the sound, and just listened and enjoyed.

And that is about the best recommendation I can give for any audio product. I strongly encourage you to audition this player. Spend the money you will save (by not buying the latest megabuck technological darling) on the music. Plenty of excellent CDs out there deserve to be heard and enjoyed. With this \$695 product you can do both. Oh yes, I would recommend placing the Icon somewhere near the top in Class C of "Recommended Components."

Do I miss the ritualistic behavior exhibited by "vinyl junkies" such as myself as I approach my turntable? Not a bit! With a good CD player such as the Icon I can spend more time listen-

ing to and enjoying the music, and less time fine-tuning my record player. How else could I have pushbutton access to Chet Baker singing and playing my favorite tunes? I will still collect records when I find ones I want and have been looking for. But I anticipate my purchases of the Napa Valley Wood Wax CD storage units will increase in the coming months.

Postscript: measurements

The CAL Icon CD player's test-bench performance was excellent, especially considering its modest price. We have, however, found little or no correlation between CD-player measurements and sonic performance, except in cases of severe anomalies. Its maximum output level at 1kHz was a little higher than usual, at 2.355V. Unless levels are carefully matched for A/B comparisons with other players with a 2V maximum level, this 1.4dB difference will make the Icon sound more dynamic and detailed. When the output impedance was measured, it was found to be much lower than specification, at 15 ohms, which implies that longish cable runs and preamplifiers with low input impedances should not present the player with any problems.

Frequency response (fig.1) was flat, with a slight rolloff above 10kHz. The response was down almost 0.5dB at 20kHz, which is on the edge of inaudibility. The Icon's frequency response with the deemphasis circuitry switched in shows a slight deemphasis error of +0.25dB centered at 4kHz. As is typical of the digital filter chip used, the 0dB, 1kHz square-wave was clipped (fig.2), the circuit's dynamic-range window presumably being optimized for low-level performance.

Analyzing the spectral content of the Icon's output when playing a dithered -90dB, 1kHz tone revealed a very low level of high-frequency spuriae and power-supply-related

noise (fig.3). There was a commendable lack of distortion harmonics associated with the 1kHz tone. Linearity was also very good, as shown by the 1kHz signal peaking very close to the -90dB horizontal axis. Looking at the low-level waveforms revealed there to be rather more HF noise than expected, fig.4 showing the -90.31dB undithered tone. Switching in an

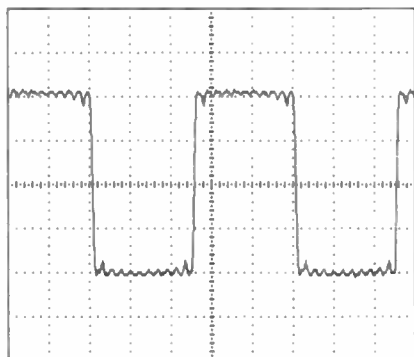


Fig.2 CAL Icon, 1kHz, 0dB squarewave (2ms window)

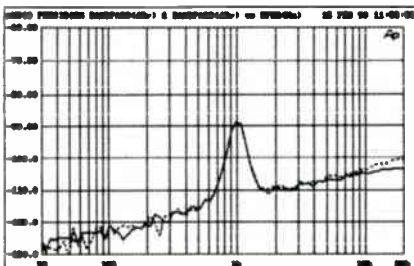


Fig.3 CAL Icon, dithered 1kHz tone at -90.31dB, with spuriae and distortion, RH channel dotted

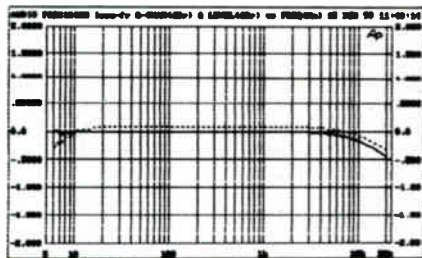


Fig.1 CAL Icon, frequency response (RH channel dotted)

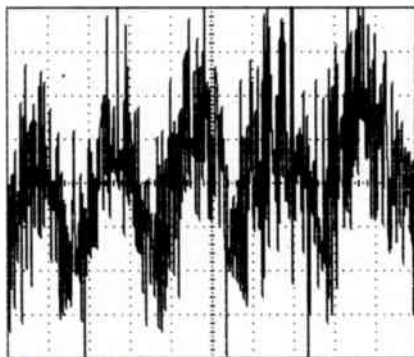


Fig.4 CAL Icon, 1kHz undithered tone at -90.31dB (5ms window)

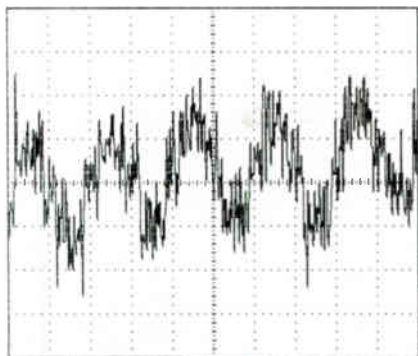


Fig.5 CAL Icon, 1kHz undithered tone at -90.31dB (5ms window) with audio-band low-pass filtering (-1dB at 20kHz)

audio-band low-pass filter (fig.5) revealed that nearly all this noise is ultrasonic.

The "Fade to Noise With Dither" plot (fig.6) confirms the Icon's excellent linearity. The left

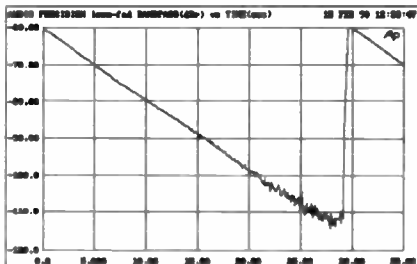


Fig.6 CAL Icon, left channel fade to noise with dither

channel is shown (the right channel was nearly identical). This graph is made by playing a 500Hz test signal whose amplitude varies continuously from -60dB to -120dB over a period of 30 seconds. The resultant plot shows how closely the CD player's output level matches the known level on the test disc, a perfect DAC giving an absolutely straight line.

—Robert Harley

TICE AUDIO POWER BLOCK AC POWERLINE LINE CONDITIONER & TITAN ENERGY STORAGE SYSTEM

Robert Harley



Tice Power Block

Tice Titan

Tice Audio Power Block Specifications: Input Voltage: 120VAC , 60Hz . Output Voltage: 122VAC (variable), 60Hz . ($220/240\text{V}$, 50Hz unit also available). Wattage Capacity: 1800W (15 amps), 75 amp peaks . Dimensions: $18\frac{1}{2}"$ L by $10\frac{1}{2}"$ W by $9\frac{1}{2}"$ H. Shipping Weight: 68 lbs . Warranty: One Year. Price: $\$1250$.

Tice Audio Titan Energy Storage System Specifications: Dimensions identical to Power Block. Shipping Weight: 66 lbs. Price: \$1000.

Both: Approximate number of dealers: 60. Manufacturer: Tice Audio Products, Inc., 16 Shorewood Lane, Centerport, NY 11721. Tel: (516) 757-5046.

Before learning more about AC powerline conditioning for this review, I had assumed that a piece of equipment's audio circuitry, and thus its sonic performance, were unaffected by the AC line provided the unit had a sufficiently beefy DC power supply. A look at the schematic of a well-designed power supply inspires confidence in this theory: Between AC cord and DC rails lies an elaborate system to ensure that the DC supply is rock-solid and isolated from junk on the incoming AC. Standing guard to protect the audio circuitry's DC supply voltages are transformers, rectifiers, filter capacitors, voltage regulators, decoupling capacitors, zener diodes, and sometimes elaborate voltage servo systems. With this type of isolation, it is difficult to see how AC powerline quality could influence the musical performance of a hi-fi system. I posed this question to George Tice, designer of the Power Block and Titan, and got an interesting education in a subject heretofore considered insignificant.

Technical background

The following discussion is based on a conversation I had with George Tice at the Winter CES in Las Vegas, and his excellent white paper on the subject (available free of charge by calling the above telephone number).

According to Tice, the power transformers found in audio equipment leak AC noise from the core into the component's chassis, effectively bypassing the power supply and causing audible degradation. Considering the fact that the chassis is usually the ground reference for the audio signal, noisy AC lines could indeed affect sonic performance. This may explain why balanced lines generally sound better than unbalanced lines. The two out-of-phase audio signals in a balanced line are referenced to each other, not chassis ground. George Tice maintains that noise on the AC powerline has the most deleterious effect on sonic quality, and has thus made noise rejection a high design priority in the Power Block and Titan. Consequently, audiophiles who live in areas with noisy AC will realize greater benefit with the Power Block and Titan. This AC

noise will find its way into the audio signal regardless of how good the component's power supply.

A more fundamental problem, however, is that the power transmission system is designed for efficiency and reliability, not for providing clean AC to our high-end music playback systems. The huge transformers mounted on poles, for example, have very high inductance. This increases their reliability by protecting them from burning out under temporary high-stress conditions. The transformer's high inductance, however, slows down the powerline's ability to deliver current quickly under a sudden demand for power! For devices that have a relatively constant draw, like computers or home appliances, this is not a problem. With the exception of those with output stages run in class-A, power amplifiers, on the other hand, vary the amount of current drawn from the wall in response to the transient nature of musical signals. These limitations, inherent in the power distribution system, create a lag time between an amplifier's demand for power and actual power transfer from wall socket to amplifier. Amplifiers with large power supplies are less susceptible to this problem because of the huge energy reserve in the reservoir capacitors. Capacitors, however, can only store DC, not AC. The Power Block and Titan solve this problem by storing AC in the cores of their transformers.

Another vagary in the AC line is ElectroMagnetic Interference (EMI), a type of noise generated by devices attached to the powerline whose load is inductive. EMI is generally low in frequency (compared to Radio Frequency Interference, or RFI) and high in amplitude. It is thus more difficult to remove: high-frequency filters may remove RFI, but not low-frequency EMI and line-frequency harmonics. EMI is also generated by the utility-pole power transformer. As the transformer is driven harder, more EMI is generated, including harmonics of the 60Hz line frequency. Some audiophiles have reported that their systems sound better

1 I remember from Electronics 101 that inductance opposes a change in current.

in the evening, when factories and other sources of EMI contamination are turned off. Besides radiating into a piece of audio equipment, EMI and line-frequency harmonics can make turntable motors vibrate, degrading their performance.

An additional source of AC line-induced sonic problems is the phase relationship between voltage and current, called "power factor." When the AC line is under tremendous load, current lags voltage by a few degrees. A large factory attached to the powerline can create this shift, degrading it for everyone else on the system. Most appliances are unaffected by power factor, but audio equipment, with instantaneous power demands, can suffer reduced performance. In addition, this current lag reduces the efficiency of all devices drawing power.

Now that we've examined some of the gremlins lurking behind the apparently benign wall socket, let's look at some of the ways most powerline conditioners work.

The simplest kind of powerline treatment device is a series inductor. These small coils of wire effectively remove RF from the line, but are not able to meet the sudden demands for current in an audio system. Instead, they are better suited to computers and other constant-power-draw appliances. In addition, series inductors may remove relatively high-frequency RFI, but seldom filter low-frequency EMI components. Another inexpensive and widely used device is the Metal Oxide Varistor (MOV), a flat, circular unit with two leads that prevents high-voltage spikes from passing. Series inductors and MOVs are often found in inexpensive power strips.

The next step up in AC line conditioning is the isolation transformer. Unlike most transformers that step voltage either up or down, the isolation transformer has a 1:1 turns ratio, maintaining the same voltage across the primary and secondary windings. An isolation transformer keeps your equipment physically disconnected from the AC line. Instead, connection between equipment and AC line is made by electromagnetic induction. Most isolation transformers have low capacitance between the primary and secondary windings to reduce the amount of noise in the secondary.

George Tice stresses the difference between general-purpose powerline conditioners and the Power Block. Most conditioners are de-

signed for steady-state current draw (especially computers), not the transient demands of a power amplifier. Because the Tice transformer used in both the Power Block and Titan were designed specifically for audio systems, they are radically different from conventional transformers, as we will see.

How good is the AC powerline?

When I worked in CD mastering, we would occasionally get a loud "tick" through the laser mastering machine's monitoring system. Unfortunately, this tick would also be on the master, forcing us to scrap it and try again. After several frustrating weeks of trying to figure out what was causing the problem (including changing equipment, cables, computers), someone tried plugging the mastering equipment into a computer powerline conditioner. The problem disappeared. Subsequently, I rented a sophisticated AC powerline analyzer to determine how bad the supply from the electric company really was. The AC analyzer monitors the line and gives a printout of voltage, spikes (high-voltage transients), surges (longer-duration voltage increases), and sags (voltage drops). I connected the analyzer to the offending AC outlet in the evening for an overnight test. Since this was my first experience with measuring AC line conditions, the threshold for each parameter was set very liberally. This meant that the analyzer would print only occasionally, when there was a severe problem with the line. The thresholds would be made tighter in subsequent tests, as I gained some knowledge of what to expect.

The next morning, I found the entire roll of printer paper unraveled on the floor! There were hundreds of spikes, surges, and sags. Spikes of 150V and sags down to 90V occurred dozens of times per hour. Most of these are of such short duration that a normal voltmeter could not respond quickly enough to reveal that anything had happened. Because this was my only experience with scrutinizing an AC powerline, I don't know if the exceptionally poor quality was typical of what one would find in a residence.

Power Block

The Power Block has one AC cord that plugs into a wall socket and six AC outlets for supplying conditioned AC to your audio equipment. Without actually seeing (or lifting) the Power

Block, one does not get the sense of weight and heft of the unit. It is extremely heavy (about 60 pounds) for its size and has a stocky build. This is a *serious* piece of equipment. The majority of the chassis is $\frac{1}{4}$ " thick ABS plastic, while the front and rear panels are brushed and lacquered solid brass. According to George Tice, the ABS plastic is better sonically than steel or aluminum. It also saves substantial cost. I suspect that if the case were made from metal, it would add many hundreds of dollars to the retail price. I found that the ABS case was very sturdy and did not compromise the structural integrity of the unit.

The brass front panel holds a meter that indicates the AC line voltage delivered to your equipment, and two rocker switches marked "Primary" and "Secondary." These switches allow the user to compensate for high and low voltages supplied by your local electric company by selecting different transformer taps. The correct switch setting is indicated on the front-panel voltmeter. In addition to indicating voltage, the meter is divided into three sections, labeled "low," "normal," and "high," accompanied by the correct switch combination indicator. These switches were left in the normal position during the audition: my electric company was apparently supplying the correct voltage. The top of the unit has a square metal grille over the transformer for heat dissipation. It is vital that this vent remain open to keep the transformer cool. While the Power Block was plugged in, I noticed warm, but not hot, air rising from the grille. Tice stresses in the owner's manual that for proper ventilation, the Power Block and Titan must not be stacked atop one another.

The rear panel consists of six AC outlets, a heavy line cord, fuse holder, and a cable for connecting the Power Block to the optional Titan Energy Storage System. The outlets are made from Nylon (instead of a lesser plastic) and are rated at 15 amps each. Twelve-gauge wire is used for all internal connections as well as the line cord. All cables, switches, outlets, and hardware are heavy-duty, industrial-level quality.

The Power Block can supply up to 1800W to audio components, sufficient to power a CD player, preamp, turntable, digital processor, and most power amplifiers. No power on/off switch is provided: the Power Block is designed to be left on continuously. Another reason for omit-

ting an on/off switch is increased reliability. When voltage to a transformer is removed, the magnetic field around it collapses, inducing a huge power surge.² This surge stresses components and could carbonize the on/off switch contacts. For the same reason, the two voltage adjustment switches should never be operated when the Power Block is connected to the AC supply. Carbonization of switch contacts, caused by arcing, is specifically excluded from the warranty coverage.

Inside, the Power Block is apparently quite simple. The heart of the unit is a huge 50 lb, 2kVA transformer that comprises the bulk of the weight and consumes the majority of the interior space. This transformer is *massive*. The only other components are two capacitors attached to the transformer (one on the primary side, one on the secondary side), and what looks like an MOV to protect the transformer primary from high-voltage spikes. Construction and parts quality are top-notch. One thinks of the word "bulletproof" when looking at the inside of the Power Block.

The transformer is manufactured specifically for Tice Audio and is very different from typical transformers. First, the primary-to-secondary capacitance is high. Isolation transformers³ usually have very low capacitance to reduce the amount of noise induced in the secondary windings. Instead of trying to stop noise, Tice allows the noise to pass, using feedback from the secondary to the primary to cancel unwanted signal components. In addition, a portion of the signal from the primary is fed *directly* to the secondary by hard wiring, not induction. This cycling of out-of-phase information within the transformer must be carefully balanced to achieve maximum noise rejection without affecting the 60Hz line frequency. This feedback/feedforward technique is the subject of a patent application.

Another unusual feature is that the transformer is operated very near its saturation point, usually a condition to be avoided. Tice overcomes some of the problems of near-saturation with the feedback/feedforward

² A voltage is induced when there is a magnetic field, a conductor, and relative motion between the two. The magnetic field exists around the transformer, the conductor is the transformer windings, and relative motion is provided by the rapid and total collapse of the magnetic field when the input voltage is suddenly removed.

³ George Tice takes offense if his transformer is referred to as an "isolation" transformer. This is understandable, considering its unique design and operating principles.

design. Operating the transformer at its maximum capacity stores more energy, hence providing greater reserve for transient power demands. This reduces the lag time between an amplifier's demand for power and energy transfer.

In addition, the transformer has the ability to increase or decrease the AC voltage to your equipment. The large rocker switches on the front panel select different transformer taps, allowing the user to optimize the line voltage despite variations in the wall supply voltage. Amplifier specifications are usually based on a line voltage of 120V. If your local electric company supplies you with, say, 108V, a power amplifier will not perform as the manufacturer intended. Conversely, too high a voltage can damage equipment by either unduly stressing the components over time, or catastrophic failure. We experienced the latter in Santa Fe recently when a large filter capacitor in an amplifier blew up. When attempting to determine the cause of the failure, JA measured the wall voltage: 127V. This caused the high-voltage supply in the amplifier to exceed 600V, the filter cap's rating. (The capacitor has since been upgraded to accommodate this condition.) It's important, therefore, that the 10% voltage-increase option not be used unless the line voltage is low.

The transformer is mounted on rubber shock mounts to isolate its mechanical vibration from the rest of the unit. I noticed a very slight hum from the Power Block and Titan with my head next to the unit, but the hum was inaudible from my listening chair 12' away. Other interesting aspects of the transformer include rectangular windings and vacuum sealing. Rectangular windings increase a transformer's efficiency over round wire windings, and vacuum sealing reduces the chance of arcing within the transformer.

Titan

The Power Block can be used by itself to clean up the AC supply, store energy in its transformer, and compensate for high or low voltage supplied by your electric company. However, Tice Audio makes a companion to the Power Block, called the Titan Energy Storage System, that extends the beneficial effects of the Power Block. The Titan is very similar in appearance, construction, and performance to the Power Block. The units are of identical size, and both

use the same 50 pound, 2kVA transformer. While the Power Block can be used without a Titan, a Titan cannot be used without a Power Block.

The Titan is essentially a Power Block without the front panel meter, switches, and AC outlets, and connects to the Power Block via an umbilicus. The Titan complements the Power Block by providing additional energy storage reserve in its transformer. According to George Tice, there is as much sonic improvement with the addition of a Titan as with the installation of a Power Block. The Power Block and Titan can be used in many configurations, from a single Power Block with every component plugged into it, to dual mono Power Block/Titan setups if you have monoblock power amplifiers (and the budget!).

With all that verbiage about the AC power-line and what the Power Block and Titan do, can they *really* make that much difference in the performance of a hi-fi system?

Sound

At the moment, my system includes an Audio Research SP14 preamplifier, VTL 225W Deluxe monoblock power amplifiers, Wadia 2000 Digital Decoding Computer driven by a Marantz CD-94 CD player (used as a transport only), B&W 801 Matrix Series 2 loudspeakers, and a VPI HW-19 Jr. turntable with an AudioQuest PT-5 tonearm and Sumiko Boron vdH cartridge. Interconnects are Expressive Technologies IC-1,⁴ and speaker cable is bi-wired AudioQuest Clear Hyperlitz. For CD playback, the Wadia 2000 outputs drive the VTL monoblocks through Electronic Visionary System's Ultimate Attenuators, a passive stepped attenuator. These attenuators eliminate the preamplifier and one pair of interconnects from the signal path. To evaluate the sonic effects of the Power Block and Titan on a preamplifier, the SP-14 was also inserted in the system for both LP and CD playback. The room was built exclusively for music listening and has optimum dimensional ratios. Phantom Acoustic Shadows, an active room-resonance control system, are employed in the corners behind the loudspeakers.

Since the device under evaluation acts on the

⁴ Despite the fact that these cables are bigger around than a garden hose, ridiculously bulky, unwieldy, stiff, and just plain difficult, the musical rewards they offer are well worth the trouble.

AC powerline, the quality of which varies greatly around the country, I should add that I live in a rural area, far from factories and other causes of powerline disturbances. However, I do have the usual assortment of household appliances connected to the line. In addition, one other house shares the pole-mounted utility transformer about 125' from my home.

Despite the litany of problems inherent in the AC powerline just described, I was skeptical of the underlying principle that cleaning up the AC line could produce the sort of sonic improvements claimed by Tice. Granted, the AC line is full of noise, spikes, and other junk, but how could that affect, for example, imaging and spatial resolution? I could see how the energy storage in the Power Block and Titan could improve bass impact from a power amplifier, but not musical subtleties. Although I had an open mind, essential to any kind of reviewing, I was nevertheless prepared to write a less than glowing review if the units did not significantly improve my system's sound, especially considering the fairly large investment the Power Block and Titan represent.

Since I anticipated that any improvement would be subtle, I spent the better part of a day listening to my favorite music without the Power Block and Titan in the system. This would make small differences more noticeable when I did plug the system components into the Power Block and Titan. Furthermore, I attempted to maximize any sonic effect by inserting both Power Block and Titan together into the system, and also by plugging every component into them. This way, if I heard any difference, it would validate the fundamental supposition that the AC powerline could indeed affect the quality of reproduced music. If there were a difference, I could then go back and assess the Power Block on its own, and also the conditioner's effects on individual components. Still, I expected at best a marginal improvement in some sonic characteristics and prepared for a lengthy listening session to discern any differences.

After plugging the system into the Power Block (with the Titan attached), I put on a CD. Seconds into the first piece of music, my jaw literally dropped. The entire musical presentation was transformed. I could not believe what I was hearing.

First, there was the impression that the volume had been increased, even though I had not

adjusted the gain. Often, an increase in volume is accompanied by more harshness, especially if the recording is strident or the source is CD. Despite the apparent loudness increase, the amount of treble grit and edginess were decreased. Recordings that I had felt were shrill and strident sounded much less so when the system was plugged into the Power Block and Titan. This reduction in HF hash was not subtle. Upper-octave textures took on a more liquid character that greatly enhanced the musical experience. Cymbals lost some of their spittiness; instead, the shimmer of struck brass emerged. Vocal sibilants were softer, less obtrusive, and not accompanied by a hashy character. After I got over the surprise and delight at how my system was sounding, my first thought was "I want to *record* with the mike preamps and tape machine plugged into these units!"

The presentation of textures as less hard and brittle was especially apparent on treble transients. The leading edge sounded sharper and more dynamic, while paradoxically also seeming more liquid. This resulted in increased treble detail, while simultaneously sounding more laid-back. These two qualities are often mutually exclusive: components with the ability to present fine detail often sound etched and analytical. The addition of Power Block and Titan increased resolution and detail, yet at the same time decreased the forward, dry presentation often associated with a finely woven rendering. Bobby Hutcherson's vibes on the album *Highway One* (Columbia JC 35550) are a good example. They assumed a greater presence and had a sharper attack, but were much more liquid and delicate with the Power Block and Titan. In addition, they floated between the speakers, with a more pronounced sense of air and depth.

Treble transients also gave the impression of emerging from a silent, velvety-black background. The silence between attacks seemed deeper with the addition of Power Block and Titan. As a result of this greater intertransient silence and increased resolution, dynamic contrasts became more acute. Loud passages seemed louder, soft passages softer. Small details, like the very end of reverberation decay, became more audible, increasing soundstage depth.

An analogy that immediately occurred to me comes from my hobby of amateur astronomy. When looking at a galaxy from an urban location at sea level, the resolution is diminished

by light pollution and the dense atmosphere at low elevations. It appears as an oval, formless blob against a greyish background. Looking at the same galaxy from a dark location and at high elevation, it appears very different. The increased contrast between light and dark areas reveals detail in the object previously obscured. Spiral arms, dust lanes, and other fine details emerge with sparkling clarity from a deep black universe. This creates the impression of seeing the object floating in three-dimensional space instead of stuck on a cardboard backdrop. I had a similar, but musical, impression of the effects of the Power Block and Titan.

Going back to the soundstage, the addition of the Power Block and Titan made the recording space appear bigger. Perhaps this is more accurately described as the raw AC power from the wall truncating the tail end of the reverberation. The guitar and double bass recording on the *Stereophile* Test CD confirmed this impression. The naturally recorded acoustic of the 140-year-old church seemed to surround the instruments and have a longer decay. The acoustic guitar also had a smoother and more detailed character, with greater clarity. The Schumann Romance No.1, also from the *Stereophile* Test CD, was revealing. The distance between flute and piano seemed greater with the Power Block and Titan in the system, with hall decay appearing to recede much deeper into the soundstage. The recorded acoustic enveloped the instruments, much the way live music sounds.

In addition to rendering greater soundstage depth, instruments became more spatially distinct from each other, both laterally and in the front-to-rear perspective. Instrumental outlines became tighter and more focused, allowing precise localization of images. This improvement increased the ability to distinguish an individual instrument's character, even during complex passages. Again, this was not subtle. Listening to the same music again without the Power Block and Titan, images seemed bloated, almost overlapping each other, and less anchored within the soundstage.

There was also an overall increase in soundstage transparency and clarity. Removing the Power Block and Titan from the system revealed an opaqueness to the soundstage that I had not been aware of before. The palpability of instruments increased when the haze was stripped away. In addition, the soundstage had

a stronger centerfill, making it easier for the speakers to vanish into the music.

Bass definition and articulation increased, adding a greater rhythmic drive to music. Bass lines were clearer, and the pitch of each note was more easily distinguished. The addition of the Power Block and Titan also changed the texture of low frequencies, the lower octaves assuming a rounder character and losing a bit of their wooden quality. These changes to the low-frequency presentation, however, were very subtle compared to the Power Block and Titan's effect on the rest of the musical spectrum.

Another improvement was the sense of ease and liquidity of the entire musical presentation. Music became more involving and inviting, flowing with a gentleness and lack of strain. After connecting the Power Block and Titan, I found myself wanting to continue listening to music, and never at a loss as to what to play next. I felt renewed excitement at the anticipation of each new record. This feeling, perhaps more than the specific improvements one notices, is the best indication that a piece of audio equipment is doing something right.

Interestingly, the Power Block and Titan provided less improvement in an area that I thought would be most apparent: bass impact. Although the entire presentation was more dynamic, bass slam seemed less affected than treble transients. The low-frequency character of music did seem more effortless and liquid, but I did not notice as much improvement as in other aspects of musical presentation. To test how the Power Block and Titan affected a power amplifier's ability to deliver low frequencies at high levels to the loudspeaker, I played "Babylon Sisters" from Steely Dan's *Gaucho* album. Despite the high playback level, I could detect very little difference in bass impact or sense of strain in the midrange and treble with the Power Block and Titan in the system.

To say I was surprised by what the Power Block and Titan did for my system is an understatement. I had never imagined that cleaning up the AC powerline could yield such sonic magic. Now that I knew they worked, I next evaluated the Power Block and Titan individually. I wanted to find out how much each unit contributed to the overall musicality just described, thus determining the value of spending an additional thousand dollars on a Titan.

Removing the Titan from the system is easily accomplished by disconnecting the cable that

links it to the Power Block. Upon connection, the Titan emits a momentary hum as it energizes. I formed my opinions by listening to a piece of music with the Titan connected, then the same piece without the Titan.

I must conclude that the Titan's contribution to the sonic improvements described above was much less than the Power Block's. I did notice an increase in soundstage depth, image specificity, and treble sweetness with the Titan, but it did not qualitatively change the sound the way the Power Block did compared to the wall socket. Incidentally, when the Power Block and Titan were connected together and the Power Block was plugged into the wall, the 15-amp breaker in the breaker panel tripped. This could be avoided by plugging in the Power Block first, then connecting the Titan.

I was curious as to how many of the sonic benefits of the Power Block and Titan were from supplying cleaner AC to the power amplifiers, and how much from improving the rest of the system's AC. To find out, I listened to the system with the VTLs plugged into the Power Block/Titan combination, and all other components into a power strip. Although there was some improvement, I did not hear the sonic transformation I heard when the entire system got its AC from the Power Block and Titan. The soundstage became more transparent and the bass better defined, but it didn't have the lush liquidity heard when having the entire system plugged into the Power Block and Titan. Next, I reversed the situation: VTLs plugged into the power strip and every other component into the Power Block and Titan. The treble sweetness and midrange liquidity returned, but the overall musical presentation did not quite match that heard when all components were supplied with AC from the Power Block and Titan. I heard more difference in the latter case (VTLs in the wall) than in the former.

I recently received a powerline conditioner made and marketed directly by Audio Express that sells for \$269. After the Tice Power Block and Titan made such a favorable impression on me (and opened my eyes to the effects of AC power on audio-system performance), I decided to evaluate the Audio Express unit and compare it to the Power Block. This unit, as would be expected from its modest price, is nowhere near as ambitious as the Power Block. It is designed only for preamps, CD players, digital processors, and other low power-con-

sumption units, not power amplifiers. I did hear a significant improvement with the Audio Express unit over the raw AC outlets, but it did not come close to the sonic transformation rendered by the Tice units.

Incidentally, Tice makes a scaled-down version of the Power Block called the Micro Block. Like the Audio Express conditioner, it is designed for all components except power amplifiers. Since I noted in the auditioning that the most sonic improvement was realized with low-power system components plugged into the Power Block, I suspect that the Micro Block, at \$575, may be a cost-effective way to improve your system's performance and get a taste of what AC powerline conditioning can do. Since I have not had any experience with the Micro Block, I cannot recommend it. I have, however, asked for a sample and will report my impressions in a Follow-up.

Conclusion

Much to my surprise, the Tice Audio Power Block and Titan Energy Storage System made a significant improvement to the musicality of my playback system. They improved performance aspects one would not readily associate with the AC powerline: soundstage transparency, treble sweetness, dynamic contrast, and imaging. With the Power Block and Titan, the entire presentation became more luscious and effortless. Besides these specifics, music became more involving and satisfying, making me want to continue listening. Although they did not increase LF impact as expected, the improvement in other areas was remarkable. How and why this sonic transformation occurs when the AC power to equipment is cleaned up, I cannot even speculate.

It is difficult to predict how the Power Block and Titan will perform in other systems due to the varying nature of AC powerline quality around the country. I would suspect that my AC supply used to audition the two conditioners was better than average, and that equal or greater benefits would be realized in areas with noisy AC. However, this is only an assumption based on my rural location. It would be wise to find a dealer willing to let you try the Power Block and Titan in your own system before you buy.

I found that the Power Block produced the majority of the improvements noted, with the Titan more like icing on the cake. Although I

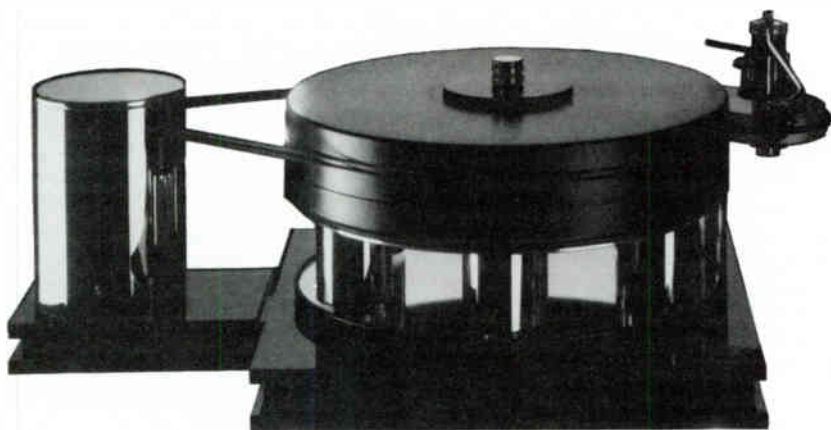
can heartily recommend both Power Block and Titan, the Power Block clearly offers more performance for the money. On the subject of cost effectiveness, I consider the Power Block, at \$1250, to offer a leap in musicality that would be difficult to match by spending that money on any other component in a moderately good high-end system. Compared to the \$2500 Phantom Acoustics Shadow, the active low-

frequency control system I favorably reviewed in Vol.12 No.12, the Power Block offers a bigger jump in overall musicality for about half the price, although the two systems affected very different aspects of the musical presentation.

Before upgrading your preamp or CD player, try the Power Block. You may be surprised at how good your present components can really sound. **S**

SPACE & TIME AURA TURNTABLE

Dick Olsher



Space & Time Aura turntable

Type: belt-driven, floating subchassis. **Speeds:** 33 $\frac{1}{3}$ & 45rpm, switch selectable. **Dimensions:** 24" W (including armboard and motor unit) by 8.5" high by 16" deep. **Price:** \$4650. **Approximate number of dealers:** 1. **Manufacturer:** D.L.W. Manufacturing, Brisbane, Australia. **Importer:** TARA Labs, Inc., 2567 Siskiyou Blvd., Ashland, OR 97520. **Tel:** (503) 488-6465.

It is not immediately clear to me which connotation the Aura 'table is supposed to elicit. Around these parts, an aura refers to an emanation proceeding from the body and surrounding it as an atmosphere. When in Santa Fe, you can have your aura checked and adjusted. In New Zealand, where the 'table was conceived, I presume that "aura" implies a distinctive air or character—because that's precisely the Aura's visual impact.

What catches the eye first are the design's flowing, airy lines. A gold-plated cylinder houses the motor assembly. Shiny, gold-plated flywheel weights hang from the periphery of the platter assembly. There are no rectangular lines for the eye to get hung up on. The list of

materials is made conspicuous by the absence of wood, either as a base or trim. Instead, think of aluminum, stainless steel, acrylic, tungsten carbide, and mirror glass. A mirror!? Yes, if you peek below the flywheel assembly you'll see the reflected underside of the platter/flywheel. This is more than just a touch of cosmetic vanity, as the mirror actually helps in aligning the bearing shaft with the platter during assembly.

The overall layout of the 'table is best thought of as modular. The cylindrical motor assembly sits on its own laminate base and is outfitted with three adjustable "tip-toe" feet. The power supply for the motor is also separate and may be located out of the way to the extent allowed by the 2'-long cord. Everything else sits atop

a pair of acrylic base plates, the lower of which is provided with three adjustable conical feet, which are used to level the platter. Several springs are provided for isolating the platter assembly from structural vibration. These are placed at the four corners and center of the bottom plate, and may be moved around manually to balance the suspension. This do-it-yourself approach to isolation is not difficult to optimize, but there is precious little said about it in the assembly instructions.

Next, the top plate is positioned atop the springs. Centered on the top plate is a steel shaft which carries the thrust pad for the unipivot bearing. Up to four arm pillars may be mounted at the corners of the top plate; however, a single pillar is provided as standard equipment. The platter/flywheel assembly is lowered onto the steel shaft to complete the initial setup. The motor housing is placed to the left and about 5mm away from the base plates. A pair of drive belts are draped around the motor capstan and the platter. The belts should be parallel to the plane of the platter; this is done by adjusting the height of the housing relative to that of the platter.

David Whittaker, the designer, now lives and works down under in Brisbane, Australia. He describes the Aura as a stabilized unipivot having high rotational inertia. The inertia is provided by a massive platter/flywheel which weighs in at some 30 pounds. Massive platters are not uncommon in high-end 'tables, but what is rather rare is the use of constrained layer damping to dissipate acoustic energy. A massive platter is a good idea because it offers an inherent resistance to flutter either from bearing binding effects or from stylus drag. Unfortunately, a large mass is also a good energy reservoir. Some, or ideally most, of the energy punched into the vinyl by the vibrating stylus is transferred to the platter.¹ Bearing rumble is, of course, also communicated to the platter. This energy should be dissipated quickly without any ringing that could be transmitted back to the record and stylus. Acoustical and mechanical energy is dissipated into heat through frictional effects. Frictional forces may be enhanced by the use of constrained layers, the shear forces between layers serving to

increase frictional losses. This works not only for platters, but also for tonearms and loudspeaker enclosures. For example, two 1/2" layers glued together are far preferable to using a single 1"-thick wall material for cabinet construction.

The cast aluminum platter's internal surfaces are damped by two layers of material: an aluminum sheet with a bituminous backing. The remaining airspace between the platter and flywheel is filled with foam rubber to reduce cavity resonances. Lead sheet had been tried early on, but better subjective results were obtained with the aluminum-backed bituminous damping presently used. The top of the flywheel and the 5mm-thick stiffening disc under the mirror are similarly damped. Dave Whittaker will readily admit that, in its raw state, the platter rings like a "dinner gong" when struck. But after the application of constrained layer damping, platter resonances are reduced to a whimper.

Incidentally, aluminum was chosen as the platter material because it transmits vibration faster than any other suitable metal. An acrylic mat was used originally, but better results were obtained with the record directly in contact with the metal. Whittaker mentions more detail and the elimination of a shrill treble quality.

The unipivot bearing consists of a tungsten-carbide pivot pin which fits into a detent in a hardened-steel thrust pad located on top of the bearing shaft. The contact point has been slightly rounded to a contact radius of 0.3mm to reduce the pressure on the pin without a significant increase in frictional forces. The pivot point is located just below the surface of the platter so that the resulting center of gravity of the rotating platter is in a plane well below that of the pivot. The flywheel further lowers the center of gravity of the assembly so that the moving mass is quite stable and self-centering. The only contact between the bearing shaft and well is at the unipivot and at a small adjustable Teflon sleeve at the bottom of the well.

A plastic clamp is included in the package. It can be screwed on tightly over the record, and at least for reasonably flat records it intimately couples the vinyl to the platter. With the Aura 'table, I found the action of the clamp preferable to that of a weight. It should be noted, however, that in general clamps and weights are ineffective when confronted with dished-out records because they offer little

¹ The stylus is, of course, not a source of energy, deriving its motion from the groove walls being dragged past it. But as vibrational ripples do emanate from the stylus position into the LP and then the platter material, DO's usage here is justified.

—JA

control over the record periphery.

If you've had any difficulty discerning the fact that the Aura is a mature product and truly a labor of love, these next two flourishes should make this fact perfectly clear. The Aura's looks are enhanced by a clear acrylic ring fitted around the flywheel weights which acts not only as a dust shield, but also as a guard to keep prying fingers from getting tangled up in the works. Finally, a plastic dustcover—actually a plastic disc the size of the platter, complete with two mini knobs—can be parked over the platter to protect it from dirt and dust.

Setup

The Aura was installed by Matthew Bond of TARA Labs; I basically looked over his shoulder. Both the motor housing and base plates were placed on top of an Arcici Lead Balloon turntable stand. As I mentioned earlier, the only bit of indecision involved the final placement of the suspension springs. The basic guidance is to place two springs under the arm pillars, one at free corners of the base plate, and another toward the center of the base plate. To check the resonant frequency of the suspension, compress the platter near the spindle and observe the motion of the springs as they are sandwiched between the base plates. The springs should execute three complete cycles per second. However, these springs do not appear to be adequately damped, the platter's bouncing response to a shock excitation lasting several seconds, changing the relationship between the drive spindle, belts, and platter. A good stand must be regarded as mandatory with this table.

The arm board is acrylic and bolts to the arm pillar using a single bolt. A fat rubber ring wraps around the edge of the board to dampen out standing waves. Here is one place where the use of a wood composite would perhaps have been more appropriate. I assume that acrylic is used primarily for cosmetic reasons. It is more difficult to machine and drill compared with wood, and is not nearly as internally well-damped as wood.

The location of the arm holes on the board is not critical. It is very easy to adjust the cartridge overhang by simply rotating the arm board in and out on the pillar.

Speed adjustments for both 33½ and 45rpm are provided at the top of the motor housing. These are uncalibrated and require the use of

a stroboscope disc for fine tuning. Speed changes are a matter of a flick of a switch: up for 45 and down for 33½.

Because the Aura features the versatility of accommodating multiple arms, I wanted to try at least two. I started off with a single arm, the SME V, later adding the Clearaudio Souther. With the SME V in the back and the Souther on the right, the Aura looked positively high-tech. But never industrial; a most pleasing blend of gold and black.

When all of the adjustments were finished, Matthew powered the 'table on and . . . a funny thing happened. The 'table worked to the extent that the platter spun around; but it wobbled badly. The platter precessed about the bearing like a wobbly spinning top. Of course, Matthew was horrified: "This has never happened before." Well, if audio gear can go wrong, it usually does in Santa Fe. Matthew shipped me the platter assembly off his own Aura. This too turned out to be a mistake; his platter, being from an earlier production run, was incompatible. Again, the result was wobble and more wobble. But the story had a happy ending. As Dave Whittaker suspected shipping damage, he air-freighted me a new platter assembly. This one was modified to increase the thickness of the central shaft and that of the casting above the flywheel; the central shaft is now less vulnerable to bending stress. This fix, together with the promise of improved packing, should obviate any future problems with damage in transit. The painting procedure for the platter has also been improved, now consisting of a two-part epoxy application which should be much tougher than what has been provided so far.

The new platter assembly worked perfectly, and has continued to do so for many months. Any doubts I have had in the interim about the technical aspects or reliability of this 'table have completely vanished. And as you will shortly see, I'm one pleased customer.

Listening impressions

The Aura displaced the SOTA Star Sapphire 'table from my system. Having lived with the SOTA for a couple of years and having found it to be a synergistic match with the SME V, I felt that the Aura had to eclipse the SOTA's level of performance. After all, the SOTA costs considerably less, and achieves a Class B rating on the strength of its coupling with the SME arm. The battlelines were drawn. The SME arm with

cartridge were transferred from the SOTA to the Aura. With the 'table as the single variable in the chain, serious listening began. The listening sessions spanned many speakers, amps, and several cartridges.

The result is that I'm convinced, at this juncture, that the Aura is one of the finest turntables money can buy.

There are several performance criteria that distinguish a great 'table from also-rans: noise floor, bass definition, detail resolution, dynamics, and soundstaging. Let's examine the performance of the Aura in each of these areas.

A 'table's noise floor refers to the background hash generated by platter resonances, flutter, and bearing rumble. The best 'tables in this regard produce a quieter, smoother background from which the music emerges. Some have referred to this as a "velvety black" background. Another aspect of this is that surface noise on such a 'table is more subdued, pushed into the background if you will. Of course, a bright cartridge or preamp that emphasizes surface noise will make such comparisons very difficult. But with no variables in the chain other than the 'table itself, the Aura was consistently quieter than the SOTA. Its performance in this area was as good as I've heard, including J. Gordon Holt's *Versa Dynamics 2.0*, to which I've had limited exposure.

The remaining performance areas are all affected by how stable and nonresonant a platform the 'table provides the arm/cartridge. Bass definition is an especially sensitive function of how quiet the bearing and platter are, and how well the arm energy is earthed in the subchassis. The Linn, though accused of upper-bass emphasis, is known to have an excellent bearing, and as a result produces a sound with superior bass detail and pitch definition. When mated to the Aura, the SME arm with its own inherent low-resonant signature had no trouble at all retrieving bass information with convincing definition. With the right speaker/amp, I never felt that the Aura in any way detracted from or interfered with the SME in this area. I had relatively less success with the Clearaudio Souther arm. The Souther was unable to precisely define bass lines with unwavering pitch stability and control in the manner of the SME. The Souther was not bad, but it did not come close to meeting my expectations after the level of performance achieved by the SME. I'm a little worried about this, because I was led to

believe that the Souther was a synergistic match for the Aura. It's very likely, however, that the SME is the better arm and that that is what the Aura allows you to hear.

Resolution of low-level detail, what JGH likes to refer to as "inner detail," is enhanced by a 'table's low noise floor. The same factors that lead to a quieter background make it possible to unmask detail previously fuzzed over. The Aura did extremely well in this area. Audience participation on "Goodnight Irene" (The Weavers, *Reunion at Carnegie Hall—1963*, Vanguard VDS 2150) was clearly resolved, as was the miking pattern. Which leads me to the area of imaging.

On the Weavers album, for example, ask yourself where all of the performers are located, how many mikes are used, and how large the hall is. With the Pawel Acoustics minimonitors, Air Tight electronics, and Rowland Complement cartridge, I had no trouble answering all of those questions to a degree I've never experienced before. Delineation of hall reverb and hall dimensions was superior to what I had ever achieved with the SOTA. The spaciousness of the soundstage and the palpability of image outlines, program material permitting, were better than anything I've experienced before within the confines of my system. Great turntables have the ability to preserve the layering of the soundstage. The Aura/SME combination reproduced the depth perspective almost as well as I recollect the *Versa*'s performance in this area.

You would expect a 'table with high rotational inertia to have no problems reproducing the full spectrum of dynamic shadings from soft to loud. That was exactly the case with the Aura/SME combo. The music was allowed to bloom and expand effortlessly. An orchestral crescendo, or the swell of massed voices—these bursts of power were readily accommodated by the Aura. Lesser 'tables would have congested these bursts of musical energy; the Aura did not. The Aura consistently got high marks for preserving the vitality and excitement of my favorite recordings. Less-than-great recordings were exposed. Compression, peak limiting, multi-miking, artificial reverb, and equalization were much more readily apparent with the Aura. Bad recordings sounded worse, while good vinyl sounded better than ever. The experience was akin to that of switching from a light microscope to an electron

microscope. There's gold in them grooves; at least, a lot more information than most folks suspect.


Summary

To merely say that the Aura won its battle with the SOTA would be an understatement. The Aura clearly outdistanced the SOTA in every important parameter. It's crucial to realize that this measure of victory was referenced to the use of the SME V arm. If you're planning on using a lesser arm, you may very well be wasting your time with the Aura. That's to say that the arm may then prove to be the limiting factor, and you would probably do just as well with a less expensive 'table.

Although an Aura/SME V combination is not cheap, it does offer borderline Class A perfor-

mance for significantly less than a Goldmund or a Versa. From my experiences in JGH's listening room, I feel that it may almost be as good as the Versa, only falling short in the area of imaging—and that may be entirely a function of the Versa's superb integral arm.

The Aura has brought me many hours of enjoyment over the past several months, and has served to renew my commitment to analog. For those of you out there saving your pennies for one of the next generation of digital processors, I suggest you invest in a better 'table/arm. You owe it to yourself to experience analog as you've never experienced it before. Try it, you'll like it.

As for me, I'm not letting the Aura out of my grasp. It's one hell of a 'table, and one I'd be perfectly happy with till the end of time. 

DAHLQUIST DQ-12 LOUDSPEAKER

Robert Harley

Dahlquist DQ-12 "Phased Array" three-way loudspeaker. Drive-units: 8" woofer, 5" laminate-cone midrange, and 1" low-mass dome tweeter. Crossover frequencies: 400Hz, 3500Hz. Impedance: 8 ohms nominal, 5 ohms minimum. Power requirements: 40W minimum, 125W maximum. Frequency range: 35–20kHz (no tolerance given). Sensitivity: 86dB (distance and input power not specified, but assumed to be 1W/1m). Connections: Four gold-plated five-way binding posts (biwireable). Fuses: one AGC 0.8A tweeter fuse, one AGC 3A woofer fuse. Accessories included: 1/4-20 threaded spiked feet. Finish: black with black cloth grille. Dimensions: 16" W by 42" H by 9" D. Weight: 42 lbs. Price: \$1200/pair. Approximate number of dealers: 200. Manufacturer: Dahlquist, 601 Old Willets Path, Hauppauge, NY 11788. Tel: (516) 234-5757.

The DQ-12 is the latest loudspeaker from Dahlquist employing their "Phased Array" technology, first used in 1973. The company was formed that year by Jon Dahlquist and Saul Marantz to produce the DQ-10, a loudspeaker that enjoyed a long and successful life. When I sold hi-fi in a retail store in the late 1970s—we stocked Dahlquist speakers—the DQ-10 was among the more prominent audiophile speakers, prized for its imaging abilities. In 1976, Carl Marchisotto joined the company, designing support products for the DQ-10 including a subwoofer, variable low-pass filter, and a passive crossover. Jon Dahlquist is no longer actively involved with the company; Carl has now assumed the engineering responsibilities at Dahlquist and is the designer of the latest group of Phased Array loudspeakers. This new line, introduced at the Winter 1990 CES in Las Vegas, encompasses three models: the \$850/pair DQ-8 (available in April, 1990), the DQ-

12 reviewed here, and the \$2000/pair flagship, the DQ-20i.

The Phased Array technique, first used in the DQ-10, mounts the drivers in an arc with the tweeter farthest from the listener. The radiating plane of each driver will thus be at an equal distance from the listener's ears, resulting—all things being equal—in a time-coherent signal. Although this concept seems rather commonplace today, it was innovative in 1973. The new line of Phased Array loudspeakers shares another common heritage with the venerable DQ-10: minimization of cabinet diffraction. In both the DQ-10 and the new models, great care has been given to the shape and structure of driver baffles and enclosure.

Description

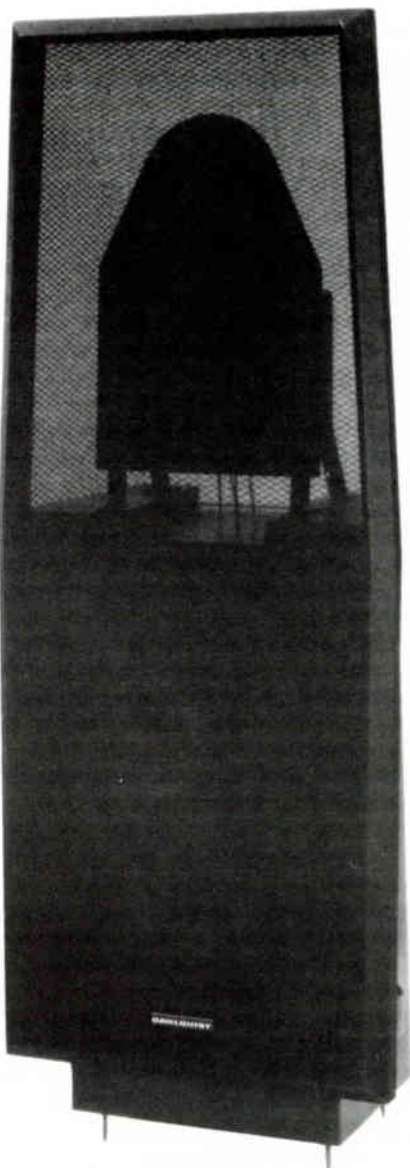
The DQ-12 is a three-way system employing an 8" woofer, 5" midrange driver, and a 1" fabric-dome tweeter. The speaker's attractive

appearance is slightly unusual and dictated by the underlying design principles. Looking at the rear of the speaker, the DQ-12 is divided into two sections: a bass enclosure, and an open-air midrange/tweeter baffle. This separation is not readily apparent from the front owing to the integral black-fabric grille. Appearing much like a standard box enclosure, the sealed-woofer cabinet is home to the 8" long-throw woofer. This woofer was designed specifically for the DQ-12 and is not found in other loudspeakers.

The lower rear of the woofer enclosure holds the fairly large terminal panel. Two pairs of five-way, gold-plated binding posts are provided for bi-wiring. If the owner chooses not to bi-wire the DQ-12, the supplied copper shorting plates are easily inserted between the two pairs of terminals. These two input pairs are staggered laterally, making it much easier to connect thick cable. The terminal panel also holds a 3 amp woofer fuse and 0.8 amp tweeter fuse. No fuse protects the midrange driver, since it is typically the most reliable component in a loudspeaker. Dahlquist maintains that the fuses should not be bypassed: the fuses are an integral part of the crossover design, and bypassing them may actually degrade the speaker's performance.

To minimize cabinet diffraction, the midrange and tweeter are mounted on a separate baffle in the open-air portion of the enclosure. This baffle is shaped like the end of an ironing board (Mrs. H's description), the edges curved to minimize diffraction. In addition, the baffle is slightly tilted back, keeping the drivers on the same acoustical plane in accordance with the Phased Array philosophy. Dahlquist says the shape of the baffle approximates the diffraction created by the human head, resulting in more accurate midrange reproduction. The rear of the open-air section is covered by a metal mesh grille.

The 5" cone midrange driver is mounted in, according to Dahlquist, a "dual cylinder aperiodic loading structure that provides controlled dipolar radiation for accurate depth of field reproduction." This is a tube about 6" in diameter extending about 7" behind the midrange, with a square piece of particle board at the opposite end of the driver. A small tube at the center of the cylinder terminates at a hole in the center of the particle board, allowing some energy from the midrange to emerge



Dahlquist DQ-12 loudspeaker

from the rear of the speaker. The large cylinder is packed with absorbing material. This design is said to provide better soundstaging and reduced distortion. The midrange driver is custom-made for Dahlquist, who then add a proprietary treatment to improve its characteristics. The driver is a pulp-based cone with two different layers of plastic material. The result reportedly possesses the best qualities

of both paper and plastic: low coloration with good transient response.

The 1" fabric-dome Vifa tweeter is recessed in the baffle and mounted just above the midrange. The driver is surrounded by an electrostatically deposited fiber-like material which absorbs some of the wave before it reaches the baffle edge. This design, coupled with the baffle shape and rounded edges, greatly reduces cabinet diffraction. With all this attention to detail, however, I was disturbed to see that the midrange driver was not recessed in the baffle. Instead, its flange protruded from the baffle perpendicularly, very close to the tweeter. This arrangement seems to defeat the purpose of the elaborate diffraction-reducing schemes. Incidentally, the midrange driver appeared to be slightly offset from the baffle center, presumably to stagger the diffraction effects from the baffle edges in frequency.

Crossover frequencies are 400Hz and 3500Hz, with air-core inductors and polypropylene capacitors used exclusively. The crossover slopes fall between 6 and 12dB/octave. All crossover design is performed on an actual speaker rather than with computer simulation, as is popular today. The components are hand-wired on masonite boards, and kept away from each other to minimize interference. All crossover component selection is done by ear, not by measurement. System sensitivity is specified at 86dB, with no measurement parameters given. According to Dahlquist, however, this figure is obtained with 1W input power at a distance of 1 meter.

The DQ-12 is physically much more complex than a standard box speaker, with its metal-mesh rear grille, baffle-mounting hardware, unusual front grille, and midrange/tweeter baffle. Overall, I found the DQ-12's appearance quite attractive. Construction and build quality appear good, but with the woofer enclosure falling short of the workmanship found in other competitively priced loudspeakers. The corner joints, for example, are not as tight as one sees on enclosures where these edges are visible. (The integral front grille, however, being wider than the bass enclosure, effectively hides it from view.) Knocking on the woofer enclosure revealed a somewhat lively tone.

Sound

The DQ-12s were auditioned with Audio Research SP-14 and Classé Audio DR-5 preamps,

VTL 225W Deluxe monoblocks, an Adcom GFA-555 power amplifier, and a VPI HW-19 Jr. turntable with an AudioQuest PT-5 tonearm and Sumiko Boron cartridge. Digital playback was from a Wadia 2000 driven by a Marantz CD-94. Speaker cables were AudioQuest Clear Hyperlitz, and interconnects were Expressive Technologies IC-1s. The VTLs were also driven by the Wadia 2000 outputs through Electronic Visionary Systems' Ultimate Attenuators, a stepped volume control. The GFA-555 was used briefly to see how the DQ-12s performed with solid-state amplification, because it is an amplifier very likely to be used with DQ-12s, given their similar price category. My dedicated listening room has optimal dimensional ratios, and Phantom Acoustics Shadows, an active low-frequency control system, are employed in the corners behind the loudspeakers. During the weeks before auditioning the DQ-12s, I had been listening to B&W 801 Matrix Series 2 loudspeakers with the same component complement (except for the Classé DR-5). After breaking in the DQ-12s for about 20 hours, I sat down for some serious listening. Once the DQ-12s' optimal placements were found, I inserted the four spiked feet supplied with each loudspeaker.

Quite early in the listening session, I realized that the DQ-12s do some things exceptionally well, while having several weaknesses. Although all components, especially speakers, have good and bad sonic attributes, this range seemed especially wide in the DQ-12.

I was immediately impressed by the speakers' ability to throw a convincing soundstage. On recording after recording, the DQ-12s revealed a surprising sense of depth and presentation of spatial information. The soundstage was wide, extending beyond the speaker boundaries, and had a remarkable sense of envelopment, especially on naturally miked recordings. Instrumental outlines were focused and had a feeling of air and space around them. Images appeared between the speakers at precise locations without being overly bloated. Listening to *Friday Night in San Francisco*, a live recording of acoustic guitars (John McLaughlin, Paco De Lucia, and Al DiMeola) in a fairly large hall, I was able to hear the size of the room, position of the guitarists, and other spatial clues with clarity and precision. Naturally miked orchestral music took on the appropriate size of the ensemble and recording space. Vocals were

anchored in the center of the soundstage, apparently disembodied from the speakers. These characteristics gave music through the DQ-12s a very pleasant, open, "unboxy" sound.

I found, however, that slight lateral head movements tended to shift the center image. This phenomenon has been dubbed the "vertical venetian blind effect" by JGH. After finding the best head location in the listening chair, it was not a significant distraction to maintain that position. (My listening chair places the listening axis 36" above the floor.)

Although the DQ-12s did not approach the B&W 801s or my other reference, the Martin-Logan Sequel 2s, in spatial definition and soundstage transparency, their performance in this area was surprisingly good for a mid-priced dynamic speaker.

Another impressive aspect of the DQ-12's performance was bass extension and weight. The tonal balance was full and robust; coupled with the soundstaging, this gave the DQ-12 a "big" character. Low frequencies were reproduced with authority and a sense of ease. Even on the Dorian *Pictures at an Exhibition* (DOR-90117), performed on pipe organ, the DQ-12s did not sound thin or anemic. Although the lowermost octave on that recording (16Hz-32Hz) was only hinted at, the balance was still satisfying and conveyed the LF extension of the instrument along with the musical intent. The mid to upper bass region, however, was somewhat bloated and tubby, obscuring LF detail. Acoustic bass lines in jazz recordings tended to be sluggish and smeared. This had the effect of removing the "bite" from plucked double bass, and reducing the feeling of rhythm and bounce. Overall, the bass presentation tended to be overly warm and ripe. My criticism of the somewhat slow and ill-defined midbass is not just in relation to the B&W 801s, which excel in this regard: a comparison with the similarly priced Thiel CS1.2s revealed the latter to have a faster, more articulate LF presentation, though the CS1.2s did not match the LF extension of the DQ-12s.

There appeared to be a resonant peak in the mid/upper bass that was particularly noticeable on solo piano, especially *Dick Hyman Plays Fats Waller* (Reference Recordings RR-33CD). Certain left-hand notes could clearly be heard to "stick out" and hang longer. This coloration was not readily audible on all music, but when it could be heard, it was inescapable.

Female vocal took on a slight chestiness in the lower registers, perhaps due to this same coloration. Beyond this region, however, most of the midrange was remarkably smooth and uncolored. Female vocal in the upper registers did not excite this resonance and was clean and pure, except for an exaggerated sibilance (more on this later). Male spoken voice (Sam Tellig's announcement on the *Stereophile* Test CD) was clear and natural, except for the chestiness noted. My first inclination is to attribute this midbass coloration to a cabinet resonance. I suspect that subsequent measurement of the DQ-12 with MELISSA, *Stereophile's* speaker and room analysis system,¹ may reveal something about this coloration.

With these praises and relatively minor criticisms, we now come to the DQ-12's most serious liability: a bright, forward, analytical treble. During the listening, I had to force myself to listen past the brightness of this speaker to hear its many attributes. When audio component manufacturers err in the tonal balance, why is it nearly always on the bright side? Live music doesn't sound sizzly, etched, and forward. Why do so many speakers? This question dogged me during the review. It is unfortunate that this otherwise excellent speaker is compromised by an overly aggressive treble. It seems that when the designer got so much right with the DQ-12—soundstaging, bass extension, coloration-free midrange (aspects difficult to achieve, mind you)—he could have gotten the treble balance correct; it's a much easier thing to control. I came to the conclusion that either this tonal balance sounds good to the designer, or perhaps the company is catering to perceived market demands. During my days selling hi-fi (and a good deal of mid-fi), I learned that neophyte audio consumers often prefer a bright, lively sounding speaker to one with a natural HF response during a brief audition. The speaker that jumps out and demands attention is, unfortunately, all too often the one that ends up in the customer's living room.

At any rate, the entire upper-octave region seemed shelved up, as opposed to having a narrow peak at a particular frequency. Cymbals, violins, and other instruments with substantial HF content became aggressive and forward. Sibilance assumed a much too prominent level in the presentation. The piano on the Fats

¹ See *Stereophile*, Vol.13 No.2, February 1990, p.118.

Waller CD took on a "clangy" quality in the upper registers. Tape hiss had a whitish, bleached character. This overly etched rendering was highly detailed, however, and may appeal to some listeners. To my ears, the HF presentation imparted a trace of cold sterility to some music. Acoustic guitar took on a steely character, while violin sounded edgy, especially at high levels. The excellent Chesky recording of Johnny Frigo with Bucky and John Pizzarelli, *Live From Studio A*, features both instruments, and is a good example of this. This recording showed no trace of harshness through the Thiel CS1.2s or the B&W 801s, but became less involving through the DQ-12s as a result of their aggressive treble. Throughout the auditioning, the elevated high-frequency presentation was inescapable and evident on nearly every recording. With recordings possessing little treble energy, however, the DQ-12s were very enjoyable. Perhaps this rising treble response contributes to the DQ-12's remarkable sense of openness.

Exacerbating the treble problem is the fact that the DQ-12s will probably be used with moderately priced solid-state amplifiers and CD players, not VTL monoblocks and a Wadia 2000. I suspected that matching the DQ-12s with solid-state amplification would be the wrong choice. Indeed, driving the DQ-12s with an Adcom GFA-555 confirmed this. The Adcom's slightly brittle upper-octave textures did not help the DQ-12s' treble presentation.

LP playback, which I generally prefer to CD, became even more desirable with the DQ-12s, and somewhat mitigated the stridency noted. To put this bright presentation into perspective, I would not characterize the DQ-12s as "run screaming from the room"² bright, but the elevated HF response is a constant reminder of the speakers' presence. I should add that my listening room is less bright than most living rooms and tends to render a softer presentation. Furthermore, the other components in the signal path could not be considered bright or forward.

Comparing the DQ-12s with the highly regarded and similarly priced (\$1090/pair) Thiel CS1.2s threw into sharp relief the DQ-12s' strengths and weaknesses. Though the 1.2s had a much more laid-back presentation and a "smaller" sound, their treble balance was much closer to what one hears from live instruments.

² This is Dick Olsher's description of components he feels are excruciatingly bright.

In addition, the 1.2s had a faster, more articulate bass reproduction, although sounding leaner throughout the entire lower registers. Furthermore, the CS1.2s' midbass lacked the resonant coloration of the Dahlquist. The DQ-12s, however, had a fuller low-frequency presentation, despite the coloration noted and lack of bass detail. The DQ-12s presented more dynamic impact and punch than the CS1.2s. Soundstage width and depth were superior through the DQ-12s, but the CS1.2s had more precise focus of instrumental outlines, though within a smaller soundstage. In addition, most of the DQ-12s' midrange region sounded less colored than the CS1.2s'. After a long listening session with the DQ-12s, however, the CS1.2s' smoother tonal balance was welcome, despite the latter's shortcomings. Finally, I felt the CS1.2s' presentation of detail drew me into the music, while the DQ-12s' overly detailed rendering was thrust at me, reducing my ability to forget I was listening to a speaker instead of music.

Measurements

The DQ-12s did very well on the LEDR test from the Chesky Test CD. LEDR is short for "Listening Environment Diagnostic Recording" and is described in detail in Vol.12 No.12. In short, it reveals a speaker's (and the room's) ability to present images in their correct spatial location. (I highly recommend this recording for evaluating speakers and listening rooms.) After my favorable impression of the DQ-12s' imaging and soundstage presentation, I was not surprised that they performed well on the LEDR test, throwing a solid image between and above the speakers.

Driving the DQ-12 with a sinewave oscillator revealed fairly strong cabinet resonances at 275, 220, and 195, with excess output also noted at 60 and 40Hz. The 195Hz mode was the most severe, causing a rattling sound to emanate from the rear of the enclosure.

Fig.1 shows how the DQ-12's impedance magnitude and phase vary with frequency. The woofer peak at 45Hz can be seen, perhaps equating with the excessive 40Hz output. The impedance never drops below 4 ohms, implying that it will be a fairly easy load to drive with most amplifiers.

Looking at the DQ-12's MELISSA-derived impulse response 48" away on the tweeter axis (fig.2) reveals a reasonably time-coherent signal with the tweeter apparently connected in the

opposite polarity to that of the woofer and midrange. Windowing the anechoic portion of the impulse response to remove room reflections and performing an FFT calculation gives the speaker's anechoic response. The DQ12's biwiring capability makes it easy to look at the woofer and midrange/tweeter responses separately, both shown in fig.3. (The level matching of the two curves in fig.3 is only approximate.) Several woofer cone-breakup modes are clearly visible, starting just above the crossover point (400Hz). Given the DQ-12's gentle crossover slope, the modes below 3kHz may not be sufficiently attenuated to be inaudible and will add a sense of liveness if not quite brightness to the sound. A peak in the midrange unit's response is also apparent at 1kHz, though the overall midrange trend is smooth. The most prominent feature, however, is the excess of high-frequency energy, starting at 5kHz but really taking off above 8kHz. This will correspond to my subjective impression of the speaker having a bright, forward treble balance overall.

The problem with FFT-derived frequency responses is that they tend to reveal almost too much detail in the treble. To look at the speaker's full-range response, therefore, I took several impulse responses across a 30° arc at the same 48" microphone distance and averaged the resultant responses, this removing the contribution of small interference effects. The result is shown to the right of fig.4, married to the woofer's response measured in the near-field; *ie*, with the microphone almost touching the dustcap. The bass appears to be rather underdamped, as suggested by the auditioning. The midband is relatively flat, with a few small peaks in the presence region that may contribute to a brightish impression. Again, the severe increase in energy above 8kHz is apparent, despite this curve incorporating the output of the speaker up to 15° off-axis laterally.

The spatially averaged, in-room response, assessed on a third-octave basis (fig.5), is what I would have predicted from the auditioning: peaky treble, smooth midband, and somewhat lumpy mid/upper bass. It should be noted that spatially averaging the response effectively removes the effect of room resonances from the measurement. Also apparent is a slight lack of energy around the woofer/midrange crossover region. The fact that this plot was made with a completely different microphone and

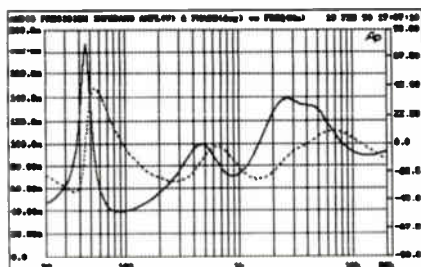


Fig.1 Dahquist DQ-12, impedance magnitude and phase (2 ohms/vertical div.)

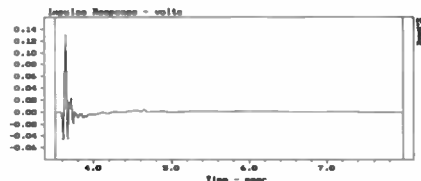


Fig.2 Dahquist DQ-12, impulse response on HF axis at 48"

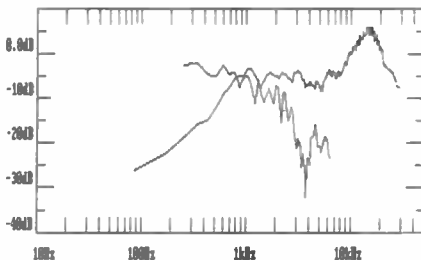


Fig.3 Dahquist DQ-12, MELISSA-derived anechoic response on HF axis, woofer and mid/HF plotted separately

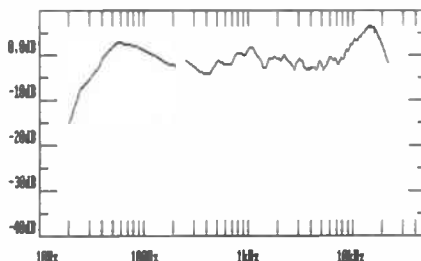


Fig.4 Dahquist DQ-12, nearfield LF response and MELISSA-derived anechoic response on HF axis, averaged across a 30° lateral window

measuring system (Audio Control Industrial SA-3050A) confirms that the HF response rise is real.

Fig.6 shows the MELISSA-derived cumula-

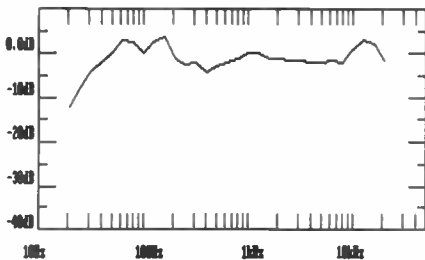


Fig.5 Dahlquist DQ-12, spatially averaged, 1/3-octave, in-room

tive spectral-decay plot, also referred to as a "waterfall" graph. A few strong resonances centered around 1kHz are apparent as "ridges" running parallel to the time axis, although the upper midrange and treble decay is quite clean. The peak in the top octave appears to be more of an equalization or diffraction-related effect than a resonance, although it just might have a very low Q. (The sharp line about 16kHz is not part of the speaker response, but rather the 15,750Hz scanning frequency of the computer monitor used.) Looking at only the woofer's cumulative spectral decay (not shown), a significant resonant ridge was apparent in the lower midrange, probably due to a cabinet resonance problem.

Conclusion

If it weren't for the bright and analytic upper octaves, the DQ-12's Achilles Heel, I could more enthusiastically recommend this speaker. Instead, I must offer only a guarded recommendation, but a recommendation nonethe-

less. The DQ-12 does many things right, qualifying it as a high-end contender despite its treble presentation. In some areas it offers performance exceptional for its price: an open, airy soundstage, excellent spatial presentation with a feeling of envelopment, satisfying bass extension, and a relatively uncolored midrange. My other criticisms, apart from the treble, are the speaker's sluggish and overly warm low-frequency character, and a mid/upper-bass resonance.

Some listeners may not be as put off by the treble presentation as I was, and may enjoy the highly detailed rendering. I find that my ears tend to be a little less tolerant of overly bright components than the average person's. I therefore suggest that shoppers for mid-priced loudspeakers add the Dahlquist DQ-12 to their list of speakers to audition. At this price range, however, the DQ-12 faces stiff competition from the Thiel CSI.2, Vandersteen 2Ci, Spica Angelus, and Acoustat Spectra 11. Matching the DQ-12 with a laid-back tube amplifier would enhance the speaker's attributes and ameliorate some of its liabilities.

Overall, I recommend that the DQ-12 be auditioned, with the potential purchaser deciding if the speaker's considerable strengths overcome its flaws.

S

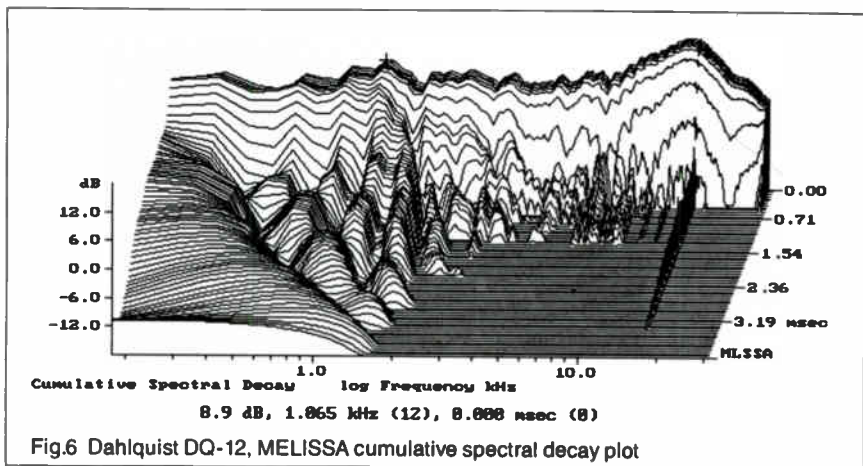


Fig.6 Dahlquist DQ-12, MELISSA cumulative spectral decay plot

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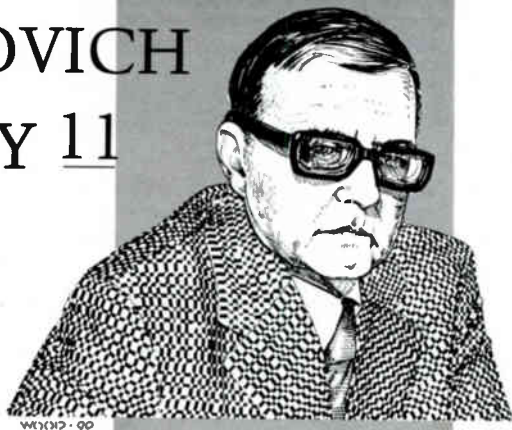
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SHOSTAKOVICH SYMPHONY 11

“The Year 1905”

BARBARA JAHN



In the reflective light of *glasnost* and the recent overthrow of tyrannical power in so many of the Eastern Bloc countries, it has been much easier to see and understand exactly what Shostakovich was describing (and why he so urgently needed to exorcise his anger) in the “musico-historical painting” of such works as Symphony 11 and its companion, 12. Shostakovich was never one to prettify—“You must write the truth—then it can be called realistic art”—and despite the fact that he worked under an oppressive regime that often hauled him before critical tribunals demanding apologies and future constraints, his work was uncompromising and forthright. “For some reason, people think that music must tell us only about the pinnacles of the human spirit . . . But there are few heroes. . . Most people are average, neither black nor white, but grey. A dirty shade of grey. And it’s in that vague grey middle ground that the fundamental conflicts of our age take place. It is a huge ant hill in which we all crawl. . . We are treated harshly and cruelly, and as soon as someone crawls a little higher, he’s ready to torture and humiliate others. . . You must write about the majority of people and for the majority.” Symphony 11 does just that, and was

so successfully received that it won for Shostakovich the Lenin Prize.

It was composed in 1957, to commemorate the 40th anniversary of the October Revolution, although that, in fact, was to be the subject of Symphony 12. But Shostakovich was mindful of the Hungarian uprising just taking place, and wanted to demonstrate how history inevitably repeats itself in the fight for political freedom. He was to do this by depicting the events of Bloody Sunday, January 9, 1905, when masses of unarmed Russian workers went, with their wives and children, to petition Tsar Nicholas II at the Winter Palace in St. Petersburg.

Father Gapon, the Russian Orthodox priest who was to lead them, had forewarned the Tsar of the event in a letter: “Sire. . . the people believe in Thee. They have made up their minds to gather at the Winter Palace tomorrow. . . to lay their needs before Thee. . . Do not fear anything. . . I, the representative of the workingmen, and my comrades, guarantee the inviolability of Thy person.” The workers were “seeking salvation. . . We have been oppressed; we are not recognized as human beings; we are treated as slaves who must suffer by despotism and irresponsibility. . . All the people. . . are

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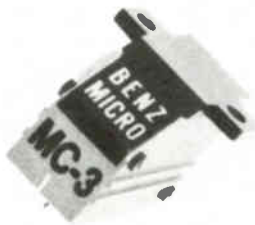


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handed over to the discretion of the Government who are thieves of the property of the State, robbers . . . who trample [the people's] interest under their feet." They were asking, peaceably, for reasonable human rights.

Their supplication went unheeded; although they waited for hours, bolstering dying hope by hymn-singing under the weight of their precious icons, the Tsar never appeared. At the sound of a bugle call, a sense of foreboding overcame them. Then another rang out, and at the third the troops opened fire. At first they believed they were just blanks, yet people were falling, "the children dropping like wounded sparrows in the snow from the railings of the Alexandrovsk Gardens." Alexandra Kollontai, a participant in the demonstration who later became the Russian Ambassador to Sweden, related the event. "The people could not believe what was happening to them. But the Tsar's mounted police were already galloping to the attack—to attack the people!"

Although Shostakovich was born a year after the massacre, he frequently heard it discussed as a child. "The stories deeply affected my imagination [and] when I was older I read much about how it had all happened. I think that it was a turning point—the people stopped believing in the Tsar. The Russian people are always like that—they believe and they believe, and suddenly they stop. And the ones the people no longer believe in come to a bad end." Symphony 11 describes loss of hope as "the cup of evil . . . runs over." Shostakovich never could erase the image of the dead children's smiling faces—"they had been killed so suddenly that they hadn't had time to be frightened [at all]."

Of the three pioneering recordings made by Mravinsky, Stokowski, and Cluytens some 30 years ago, only the Stokowski, with the Houston Symphony Orchestra (Angel CDC-47419/4AE-34446), is still represented in the catalog. It is predictably unsubtle, Stokowski's adrenalin, it seems, fired by the thrill of martial percussion and the devastating onslaught of the oppressors; he appears to have little sympathy for the oppressed.

The first movement, programmatically entitled "The Palace Square," paints the picture of huge frozen wastes. The icy chill one feels is not only that of a typical Russian winter morning but also of an immovable, airless bureaucracy. Shostakovich's near-static, hollow chordal tex-

ture is extremely atmospheric in the spine-chilling, tightly controlled pianissimi of the DePreist/Helsinki Philharmonic performance (Delos D/CD 3080). Its timelessness freezes the listener into immobility and demands total concentration from its very opening bar. It is as forbidding and obsessive as the story it tells, and although Rozhdestvensky and the USSR Ministry of Culture SO (Melodiya MCD 152) only add some 17 seconds to its length, their rather choppy, motif-conscious reading seems to wallow turgidly while DePreist's merely takes as long as it takes.

By comparison, Kondrashin's 1973 recording (Le Chant du Monde LDC 2781007/08, 2 CDs coupling Symphonies 12 and 13) sets off at a cracking dynamic and pace, knocking five and half minutes off Rozhdestvensky's time and creating an entirely different atmosphere as a consequence. But his performance does add weight to the ominous timpani motif, based on the juxtaposition of the major and minor third—surely the finest musical representation of the hope that springs eternal from despair—that pervades the entire work. Semyon Bychkov's performance with the BPO (Philips 420 935-2) also has great clarity here, and the smooth sound of the orchestra is entirely fitting; but when the two flutes introduce the poignantly quoted 19th-century political prisoner's song "Listen," he allows the timpani, now doubled by cellos and basses, too much headway, totally disregarding Shostakovich's instruction for constant pianissimo. Only a few bars on, the low strings themselves are allowed the precious announcement of another folk song, "The Prisoner," and it is DePreist and Haitink (London 411 939-2, 2 CDs coupling Symphony 6 and *Overture on Russian and Kirgiz Folk Themes*) who allow the extreme pathos of this tune to register by an almost effete response.

Movement I moves *attacca* (except in the hands of Stokowski and Bychkov!) into Movement II, "January 9th," which depicts the nightmare holocaust. It is the longest movement of the four, the most overtly dramatic, and the most troublesome for the recording engineers. Shostakovich constantly asks for extremes here: *allegro* to *adagio*, *pianissimo* to *fortissimo*, and sudden switches from extended full orchestra to small ensemble. Two further songs are introduced, but this time Shostakovich is quoting himself, for they are taken from the sixth of his 10 *Choral Poems on Revolu-*

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tionary Texts, Op.88, itself entitled "The 9th of January." The first, "O Tsar, Our little father," appears within bars of the opening on clarinets and bassoons; the second, "Bare your Heads," on trumpet, trombones, and tuba as the hopeless aftermath of the movement's first excited climax. Their constant recurrence (and that of the other songs) throughout the work, in varying rhythmic and polyphonic guise, points to Shostakovich's melodic economy and adds greatly to its pathos.

Bychkov's literal reading of this movement is disappointingly uninvolved, and can be dismissed outright. Haitink and the Concertgebouw are also predictably cool-headed and precise, but by so being they capture the blatant brutality of the attack. Rozhdestvensky draws out an eminently suitable and completely different flavor from Kondrashin in the sneering and aggressive brass and woodwind sounds of his Russian musicians, but his strings are leaden in the fugato, and the triplet-crotchet climax for full orchestra is turgid and very badly handled in recording: winds are occasionally brought into uncomfortably forward focus, brass are allowed to drown everything out, there's clumsy fader adjustment at triple forte, and the dramatic climax almost disappears into the distance. (Paavo Berglund/Bournemouth SO's characterful but sober analog/digital remaster from 1980, EMI CDS7 47790-8, 2 CDs coupling Symphony 6, the Concerto for piano, trumpet, and strings, Piano Concerto 2, and *Three Fantastic Dances*, has recently been deleted.)

Kondrashin's 1973 analog remix is little better than Rozhdestvensky, with its unnatural highlighting and boxy climax, but his reading is frighteningly intense and threatening at all times, and never less than compulsive listening. Only Delos has managed to capture the full range of the required dynamics, and DePreist sacrifices nothing in his taut, perfectly paced, superbly balanced endeavor to meet them. He alone achieves the stunning kick in the teeth when the ghostly shimmering octaves of the adagio are revealed by the sudden halt to the martial onslaught.

The same dedication to score markings is also compulsory if the full effect of the "In Memoriam" third movement is to strike home. DePreist's muted violas announce the song "You Fell as Victims" with the utmost compassion, quietly and without histrionics. Below

them cellos and double basses suggest the merest faltering heartbeat. Here Bychkov, too, comes into his own, encouraging a beautiful sound from his violas and balancing the lower strings with great subtlety. Both he and DePreist end the movement on a note of strength and hope. Stokowski, Kondrashin, Rozhdestvensky, and Haitink are too fast, too loud, too insensitive. Furthermore, Stokowski's engineers respond to the *attacca* indication at the end of the movement with an abrupt loss of ambience and a gap!

Finally comes Shostakovich's warning, "The Tocsin," which shows the peasants on the march again, having risen, phoenix-like, from their own ashes—history is repeating itself. There must be a sense of unshatterable resolve here until the haunting English horn lament "Bare Your Heads" again reminds us that the spirit may be willing but the flesh is weak. Yet, by its close, the people are beginning to gather again and, gradually crowding the way, bring the work to a triumphal close with bells tolling the major and minor thirds that have been at its heart.

Stokowski and Rozhdestvensky revel in the Technicolor gesture, with the Houston English horn showing rather too much red blood coursing through his veins. Kondrashin's proletariat display an iron will and bring the work to an exciting close after the plaintive English horn solo, while Haitink's go for a rather safer middle course with less direction and impact. Bychkov expresses himself with assertive bravery and, although the English horn is rather perfunctory, he brings the work to an explosive finish, spoiled only by the bell that is allowed to ring on after the clamorous cadence from the full orchestra.

DePreist alone presents his people in angry rather than powerful mood, rendering his beautiful English horn lament all the more touching (even in the teeth of its disappointing edit). But, as all through the work, he favors a close, homogeneous sound which, to my mind, blends the bells rather too well in the final bars. Despite this, his is the recording I would wholeheartedly recommend, although it would only be fair to say that one cannot lie back and simply soak it up; DePreist demands the same commitment and contribution from his listeners as he does from his orchestra. You have to ask yourself if you are prepared to give this. **S**

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RECORD REVIEWS



Keith Jarrett's new *Goldberg Variations* "rank with the very finest"



Helen Schneider, "a great singer and actress," in her first collection of songs by Kurt Weill (see "Show Music")

Classical

BACH: *Goldberg Variations*

Keith Jarrett, harpsichord

ECM New Series ECM 1395 (839 622-2, CD only). Peter Laenger, eng.; Manfred Eicher, prod. DDD. TT: 61:39

This disc represents a logical progression in the classical recording career of jazz great Keith Jarrett. I have already had a number of good things to say about his previous Bach record (*WTC Book 1*, ECM 1362/63); this is a riskier effort on Jarrett's part, stepping away from the familiar keyboard of his Steinway, and it brings with it greater rewards.

Make no mistake, this is a Bach performance to rank with the very finest. Close comparison with my usual first choice, Trevor Pinnock (DG Archiv 415 130-2), demonstrates that Jarrett need give place to no one—and consider that this is his first recording (to my knowledge) on the Baroque instrument. I realize that it is ordinarily the critic's job to tell you where to spend your \$15: here I can do nothing but suggest you spend \$30 instead and acquire both Pinnock and Jarrett. Looking at my notes for this review, I see for example that Jarrett gives a fine account of Variation 13, while Pinnock does wonderfully with the stair-like figurations of 14. Pinnock demonstrates the "singing tone" of which Bach spoke in 19, whereas Jarrett makes perfect use of registration to get the most out of 25. (Pinnock also scores in 25 with a

strong sense of rhythmic tension.) And so it goes, as Kurt Vonnegut used to say too often.

I was glad of the chance to write this review, since it gave me a chance to learn a lot about the Goldbergs—I now like them rather more than I did. I had developed (God knows when or why) an irrational dislike for them; that is no longer a problem. I even went back and listened again to Glenn Gould's piano rendition, and decided that it, too, is indispensable to understanding the work. If, however, you are not a committed Bach collector, nor afraid of the harpsichord, Jarrett can serve very well as your only set of Goldbergs.

Sonically, this CD is typical of ECM's best: lots of detail and a strong sense of the body tone of the instrument. There is, however, either a horrible production glitch or else a wretched edit at 1:14 of track 31 on my disc. I hope it is the former, and that your copy will not contain it. Incidentally, ECM provides absolutely no liner notes with this disc; this is unfortunate, as I suspect that a number of new listeners may be drawn to Bach solely by the magic name of Keith Jarrett. —Les Berkley

BACH: *Brandenburg Concerti*

Orchestra of the Age of Enlightenment

Virgin Classics VCD 7 90747-2 (2 CDs only). Nicholas Parker, prod.; Tim Handley, eng. DDD. TT: 93:13

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ber Orchestra, which is to say, they have no single conductor or director. As with the Italians or Americans, different musicians will lead in different works. In this case, it is the three principal violinists—Monica Huggett, Alison Bury, and Elizabeth Wallfisch—who take this role, along with Catherine Mackintosh, who plays the *violino piccolo* in the first concerto. Praise is due to the OAE for simply coming out and admitting to this lapse in democracy.

The "conductorless" ensemble system can work very well; just listen to Orpheus playing Rossini and you will agree. The OAE, however, existed as a separate entity for only two years before this recording was made, and I fear that they are not successful in this set of Brandenburgs. Ensemble lacks precision at a number of points, brass especially having problems, and there is very much the sense that a stronger hand is wanted at the helm. Both Trevor Pinnock (DG Archiv) and the aforementioned I Musici (Philips) show greater skill in the shaping of phrases, more effective concentration on rhythm, and a much stronger sense of coherence throughout a single movement or an entire concerto.

There *are* some very fine things to be heard here, mind. These are, after all, many of the same players found in Pinnock's English Concert. Mark Bennett is excellent on the natural trumpet in 2 (although I wish someone would get Crispian Steele-Perkins to do it), and the aptly named Malcolm Proud does himself so in the long harpsichord cadenza of 5 (the best of the concerti here). Nevertheless, Pinnock remains by far the first choice on authentic instruments.

In a way, this is all a great shame, because this is probably the best-sounding set of authentic Brandenburgs. For once, the digital violin sound is excellent, and the double bass¹ beautifully played by Chi-chi Nwanoku, has plenty of body and a real growl. Imaging and soundstaging are also very good. I hope, however, that you will not acquire it simply on this account, at least not until you have bought Pinnock.

—Les Berkley

BRAHMS: Piano Quartet 2**MAHLER: Piano Quartet Movement**

Domus: Krysia Osostowicz, violin; Timothy Boulton, viola; Richard Lester, cello; Susan Tomes, piano
Virgin Classics VC 7 90739-2 (CD only). Mike Hatch, eng.; Andrew Keener, prod. DDD. TT: 60:35

For some, the prime attraction of this highly attractive release may be the Mahler fragment—a one-movement product of the composer's

¹ The liner notes of this disc appear to differentiate between a *violone* and a double bass. I may be an ignoramus, but I'm not sure why.

student years, completed when he was 15. This is the second recording of the piece to appear. I have not heard the earlier one, but Domus—a young English group of considerable talent—does well with the music, suggesting its rhapsodic character and underscoring its marked echoes of Schubert, Schumann, and Brahms. A loosely structured sonata-allegro, the work is hardly a match for the masterpieces produced by the adolescent Mozart, Schubert, or Mendelssohn, but with its rambling lack of economy it foreshadows the Mahler to come, albeit without the mature composer's melodic and harmonic originality.

The more familiar Brahms work receives a splendid reading. If lacking the intensity of a DG version featuring pianist Tamás Vásáry (a digital recording long overdue for CD release), it is nonetheless a taut and spirited account. For some tastes the opening movement may be just a bit too slow and (with its exposition repeat included) too long. Still, the movement can support the grand scale on which Domus projects it. Everything else is indisputably superb: rhythmically secure and steady, animated, and all of a piece, with the slow movement sustained without seeming sentimental or saccharine. In short, here is still another release to suggest that some of today's finest young chamber groups are coming from England. The sound throughout is ideal: close but not oppressive, and free of harshness and extraneous noises, it has the impact encountered in a small, intimate hall. Warmly recommended.

—Mortimer H. Frank

BRAHMS: The Four Symphonies

Günter Wand, North German Radio Symphony Orchestra
RCA 60085-2-RG (3 CDs only). Friedrich-Karl Wagner, Karl-Otto Bremer (1-3), Johannes Kutzner (4), engs.; Dr. Ulf Thomson, prod. DDD. TT: 2:37:44

SCHUBERT: The Complete Symphonies

Günter Wand, Cologne Radio Symphony Orchestra
RCA 60096-2-RG (5 CDs only). Otto Nielen, Hermann Rantz, Hans Georg Daehn (1), Leopold von Knobelsdorff (1), engs.; Dr. Hermann Lang, prod. ADD (1, 2, 4, 8, 9), DDD (3, 5, 6). TT: 4:48:18

Both of these cycles have been available previously in German Harmonia Mundi and EMI releases. Now reissued under the RCA flag and at mid- rather than full price, they comprise some of the most attractive bargains currently available.

The Schubert set excludes Symphonies 7 and 10, both of which are modern completions of torsos left in manuscript. And Wand does not incorporate some of the textual niceties of the recent Abbado traversal. Nevertheless, Wand's prevailing taste and musicality and his overall sense of style may well make his cycle the most attractive among those now available. Time and

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again the conductor makes points through his exceptional ear for balance, care in revealing frequently masked detail, and sense of the music's logic. Typical of this sense is an unusual attention paid to the eighth-note figuration that acts as a kind of tail to the main theme of the finale of 4, an attention that heightens the music's agitated character. In addition, Wand has a strongly personal view of these works, epitomized by his unusually free way with the first movement of 9. Yet this freedom neither fractures structure nor ruptures pulse. At times, as in the first movement of 1, a slightly faster tempo might be in order. And the Cologne orchestra is not quite a world-class ensemble, a shortcoming most apparent in its rather colorless brass and occasionally imprecise chording. Still, the blend of a rich emotional variety and taut organic unity in these readings remains all too rare. The layout of the music in this set is identical to that of previous issues, and with each disc also available individually, the listener owning some of these performances may buy others without incurring duplications. As in its previous incarnations, the disc containing 5 also includes familiar excerpts (Entr'act No.3 and Ballet Music I and II) from *Rosamunde*. The sound is first-class throughout, those items recorded digitally offering a slightly quieter background and (surprisingly perhaps) ever-so-slightly more musical string tone.

The Brahms symphonies are equally distinguished. Here, with 3 and 4 now paired on a single disc (they were issued separately by EMI and Harmonia Mundi), the entire cycle is complete on one less CD. At mid-price it is an extraordinary bargain. Like the CDs in the Schubert set, these are also sold individually and come in a slipcase housing individual jewel boxes for each disc.

Wand's Brahms boasts all sorts of interpretive felicities, clarity, continuity, an occasional freedom made to sound arrestingly logical, and, most compelling of all, an almost uncanny sense of voice-leading that reveals frequently obscured detail and clarifies harmonic motion. The accounts of 3 and 4 may well be the best available, Wand's way with the finale of the latter being especially persuasive in its uncommonly fast tempo. And typical of the conductor's good taste and common sense, a first-movement repeat is observed only in 3. Throughout, the sonority is ideal: lean string tone, glowing horns, piquant (if slightly nasal) winds, and trombones that add just the right touch of darkened brass to the overall color. The sound, beautifully balanced throughout, is slightly strident in the first three symphonies, but virtually ideal in 4. For those wanting a Brahms

cycle, at any price, this is a set to have.

—Mortimer H. Frank

BRUCKNER: Symphony 5

Janša Horenstein, BBC SO

Descant 03 (CD only). Broadcast recording of live performance, 15 September 1971. A?D. TT: 72:37

BRUCKNER: Symphony 6

Günter Wand, North German Radio SO

RCA/Deutsche Harmonia Mundi 60061-2-RC (CD only).

Gerald Gotze, recording supervisor; Johannes Kutznier, eng. Live recording from Hamburg Musikhalle, 4-5 December 1988. DDD. TT: 54:17

BRUCKNER: Symphony 6

Wolfgang Sawallisch, Bavarian State Orchestra

Orfeo CO24821 (CD only). Friederich Welz, recording supervisor; Gerhard Lamz, eng. DDD? TT: 54:51

Let me propose an oversimplification: Bruckner interpreters can be divided into two camps. One group is those conductors who bring a devotional aspect to the work. Their performances embody a personal encounter with the music rather than concentrate on architecture; the public context surrounding the music often has religious or racial overtones; the literary context tends to be lyrical. These interpreters are almost uniformly German or Austrian. Furtwängler, Knappertsbusch, Walter, and Eugen Jochum are of this school.

The other loosely defined group emphasizes the secular and architectural elements of the symphonies. Their interpretations are by nature more public, dramatic in literary context, emphasizing the tension and release intrinsic to the music's structure. While they tend to be less connected to the German racial inheritance, it would be a mistake to call them more "literal" than "personal": all performances are, after all, interpretations by individuals. Otto Klemperer, a maddeningly individual conductor, would seem to span the two groups, at least after he began recording for EMI in the '50s.

This live Horenstein recording of Bruckner 5, the third release from the new Descant label, is one of the best architectural interpretations. The effect is of high tragedy, of thrilling climaxes and contemplative but never completely relaxed interludes. The most effective example of Horenstein's art comes in the polymetric (*ie*, two concurrent time-signatures) section of the Adagio. To an arithmetician, the 6/4 dotted quarter notes would seem equivalent to 4/4 quarters; indeed, Karajan, in his polished and legato DG recording, smoothes out the two meters. But Bruckner writes six-*vs*-four for a reason, and one good hypothesis is that he does it to create tension and conflict. Horenstein, by giving the notes conflicting and forceful accents, reinforces the displaced circularity of the movement. Bruckner emerges a more spiritually anguished—therefore more com-

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plex and interesting—composer as a result.

The BBC orchestra plays with spirit throughout, and are technically good, despite moments of rough ensemble. They hold together better than did the Vienna SO on Horenstein's Vox LPs of Bruckner 8 and 9. Sound is hissy and a bit unfocused, but quite vivid in timbres and dimensions: certainly more believable than most commercial studio recordings (including Karajan's, at least on LP).

Günter Wand's live recording of Bruckner 6 is, to my mind, the kind of thing that has given the composer a bad name. It is one of those "objective" readings that presents the music with obsessive attention to monumental, periodic structure. When successful, this approach can create an event of divine and overwhelming power, as with Klemperer's EMI performance. (Once available on Angel 36721, this is the best of Klemperer's studio Bruckner.) Wand's attempt, however, fails: his objectivity at best evoking plainness, at worst a tedious and meaningless cataloging of the composer's thematic morphemes. This is one of Bruckner's great slow movements; in Wand's hands, a surface phenomenon wanting in divinity.

The North Germans are a more polished ensemble than the Cologners were for Wand, generally playing just a notch below ensembles such as Berlin or the VPO, though there are some bleating moments from the brass. Sound is very glassy and unidimensional, constricted in dynamics even for a live recording. The audience is quiet, their rustling and coughing largely confined to between movements.

The Sawallisch disc has been available for several years. It is most everything that a Bruckner 6 should be. Sawallisch's conducting is more convincingly shaped than Wand's. The architecture of the symphony remains apparent, but even in the rhythmically relentless first movement, the conductor never forgets that this is a romantic symphony. The almost Mahlerian intensity he gives the Adagio may disturb purist listeners, but it does remind us how forward-looking the composer was.

Orfeo's sound is richer, more forward, less spacious, more cluttered than RCA's. This must be a top recommendation for the symphony on CD, at least until DG or EMI get around to reissuing Eugen Jochum's two recordings. The older one, on DG 139 136 with the BRSO, is a most relaxed meditation, with humor as well as devotion in evidence, and a flexibility of line worthy of Furtwängler. The later recording, on Angel SZ-337695, with the Dresden State Orchestra, is perhaps a more direct reading than with the BRSO, more Bruckner-as-cathedral, but no less sincere an expression of the conductor's faith.

—Kevin Conklin

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Martin Jones, piano

Nimbus NI 5160, 5161, 5162, 5163 (4 CDs only, separately available). DDD. TTs: 78:06, 78:58, 78:38, 68:16

DEBUSSY: *Préludes, Book 2*

Arturo Benedetti Michelangeli, piano

Deutsche Grammophon 427 391-2 (CD only). Karl-August Naegler, eng.; Cord Garben, prod. DDD. TT: 39:09

The British pianist Martin Jones, whose previous recordings for Nimbus include five CDs of Mendelssohn's piano music, is now engaged in an integral Debussy project, which is promised as chronological in organization. Based on the first four discs, I would have no hesitation in stating that this is, in almost all respects, a winner. The pianist has an unusual feeling for Debussy's subtle shapes and movements: his technical equipment, never calling attention to itself as a surface attribute, is consummate, his manner virile, his coloration sensuous without being garish. Jones manages to bring all the appropriate moods to the scores. Thus, *Ce qu'a le Vent d'Ouest* from *Préludes*, Book 1, is almost frightening, his "General Lavine"—*excentric* ideally jaunty and extravertish. The languid atmosphere of *Reflets dans l'eau* is especially dulcet here, and *Mouvement*, also from the first book of *Images*, projects a marvelously energetic, yet unhectic momentum, which in fact I prefer to Gieseking's rather dry post-war Angel recording. One additional advantage is the inclusion of a few works not usually available in complete editions, such as the *Images oubliées*, an early opus not published until 1977. Perhaps the greatest surprise is the contents of the most recently issued fourth volume, which one surely would have expected to contain the *Études* plus several final odds and ends. Instead, we are given piano versions of Debussy's three ballets in the original, pre-orchestral settings that had been intended primarily for rehearsal purposes. In fact, only the 1913 *Jeux* was subsequently orchestrated, *La boîte à joujou* of 1913/14 and the mysterious, enigmatic *Khamma* of 1912 having been scored respectively by André Caplet and Charles Koechlin. How do they hold up as piano solos? They sound remarkably good, even idiomatic, but their success here must be due, at least in part, to the surging, vital playing of Martin Jones (the end of



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Khamma is positively cataclysmic). One waits with considerable interest for the contents of the remaining volume—or will there be even more?

Nimbus has provided its usual distant recording perspective, a clean-sounding piano in a small but quite empty hall; one acclimatizes oneself fairly quickly, even if not agreeing with the premise of the sonics presented.

Arturo Benedetti Michelangeli, whose recordings of the later *Images*, the *Children's Corner* Suite, and the first book of *Préludes* have previously been reissued on CD, has now taped the complete second book. The pianist's controlled, superbly polished, sovereign way with virtually all music that he plays is certainly in evidence here, but I found the depressingly charmless, straightforward, unsensuous, and blandly unemotional approach demonstrated on this Debussy disc in particular, coupled with the coolness and neutrality of the piano reproduction, very disappointing. Parenthetically, I should add that I had the opportunity recently of reviewing three of the *Préludes* from this disc on the nationally syndicated radio program "First Hearing," with the name of the performer not revealed to the guest critics until afterward; my initial reaction was the same as just indicated, and, though I have admired Michelangeli's earlier Debussy recordings, two subsequent hearings of this disc regretfully only served to confirm that bleak first impression.

From the standpoint of economy, incidentally, you might check out the astonishing playing times that Nimbus has provided, as opposed to DG's meager offering.

—Igor Kipnis

DVORÁK: Symphony 9, "From the New World"
WAGNER: Flying Dutchman Overture, Siegfried-Idyll

Jascha Horenstein, Royal Philharmonic Orchestra
Chesky Records CD 31 (CD only). Bob Katz, remastering
eng.; David & Norman Chesky, executive prods. (Original 1962 recordings: K. E. Wilkinson, eng.; Charles Gerhardt, prod.) ADD. TT: 67:30

There are over 50 "New Worlds" in the catalog. Whether you have every one of them or none of them, buy this one. It is fat with passion. The great conductor Jascha Horenstein had it; original engineer K. E. Wilkinson had it; the Chesky Records staff had it; the third-chair trombonist had it. Pure, ripened, bone-tire passion.

The only recording I have heard that comes close to sounding as much like a real orchestra as this one is the Bainbridge release of Hindemith's *Matthis der Maler*, reviewed in Vol. 13 No. 1. I flirted with temerity in hyping the sound of that CD. This one is better. Not by much—but that wouldn't be possible—but by enough to

leave little question about it.

Nor will Horenstein's interpretation leave you doubting. There is a sense of inevitability in this music, as though it could never conceivably be played any other way. (Nonsense, of course, but that's how convincing it is.) This reading is the antithesis of a Toscanini charge. Tempos may not vary all that much, but Horenstein's rubato (in the pure sense of the term) gives the work a Romantic depth that makes performances of stricter regimentation seem anemic. The phrasing of the RPO is never less than astonishing. Every line sounds as though sung by the human voice, so spiritually crafted is it.

The second movement is extremely slow, but its pace doesn't really register until you look at the timing. It just sounds right. The only possible faltering is in the final movement, where the conservative tempo of the coda fails to lend a solid feeling of finality.

At the core of the nearly unprecedented sound quality of this CD is its timbre. Even on a modest sound system, the illusion of real instruments will be overwhelming. You hear the wood vibrating on the cellos, the splattering blat of brass, the carved-in-air breathiness of the flute. Credit must be given to Chesky's remastering engineer Bob Katz: That so much musical truth could have been captured at the 1962 original event is amazing enough; that it could have been transferred to another medium with such purity almost defies belief.

And there's more than an hour of it on the disc! Not only do we get the superb performance of Dvorák's Ninth, but Wagner's *Siegfried-Idyll* and *Flying Dutchman Overture* are added in renditions nearly as gratifying.

How many outstanding performances of the "New World" are there among the dozens available? More than a few. Ranking among the highest are the Cleveland Orchestra under George Szell and the RPO under Antal Dorati (along with Horenstein, a greatly underrated conductor of our time). But it is to Horenstein that I will continue to draw comparisons. Although he may conduct a bit too rich a mix for the most ascetic, the soulfulness of this music is, and will always be, undeniable.

—Robert Hession

MENDELSSOHN: String Symphonies 5, 7, 8

Ross Pople, London Festival Orchestra
Hyperion CDA 66318 (CD only). Tony Faulkner, eng.;
Martin Compton, prod. DDD. TT: 62:07

Ross Pople, leading the band from his concertmaster's chair, obviously doesn't look upon the boy Mendelssohn's works as salon refinements of Bach's Holy Writ. So the counterpoint of 7.i is alert and clear rather than force-fit to an

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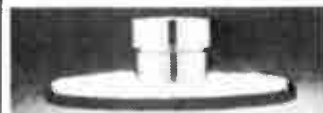


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image of High Baroque depth which the material cannot fill. The London Festival players connect consistently with the fresh melodic invention in these small pieces; this is to be expected. What may not be expected, and is very effective, is the intensity they often find. The opening Adagio to 8 is broad and portentous, conveying the urgency of Haydn's middle symphonies if not the full philosophic force of his Storm and Stress; this makes the contrast with the following Allegro breathtaking. (Allegro sections are taken daringly fast throughout, and the LFO has the chops to make it work.) People and company find in the music affinity not only with Mendelssohn's antecedents, but also evidently with his contemporaries: the Minuetto of 8 is given the tempo and rough swagger of a true *Ländler*, suggesting nothing so much as mature Schubert.

The London Festival Orchestra plays this music more convincingly than do William Boughton and the English String Orchestra in their recent survey of all 12 symphonies on Nimbus. (See my review in the May 1989 *Stereophile*.) The LFO is committed, playful, and deft where the English Strings are tentative, dour, and sloppy. About the only place the Hyperion issue lags is in sound, its close, flat perspective and present, sometimes harsh mid-range timbres quite a contrast to the atmospheric and laid-back Nimbus. But that close perspective does emphasize the lines of counterpoint, and might be just the tonic for those listeners who do not warm to the reverberant signature of Nimbus recordings.

This is the second CD of the LFO playing Mendelssohn's string symphonies. Hyperion CDA 66196 contains Symphonies 9, 10, and 12; presumably the other six symphonies will appear in the near future. Even if not yet a complete set, these performances are completely recommendable, especially by comparison with Boughton's. —Kevin Conklyn

PROKOFIEV: Violin Concertos 1 & 2
Dmitry Sitkovetsky, violin; LSO, Colin Davis
Virgin Classics VC7 90734-2 (CD only). Heinz Wildhagen, eng.; Wilfried Daenike, prod. DDD. TT: 48:53

"Polite" is not a word that leaps to mind in describing the music of Prokofiev. But it's the best one to characterize Sir Colin Davis's view of the two violin concertos. Too bad for Dmitry Sitkovetsky, the Russian-born violinist who emigrated to the US in 1977 and later won first prize at the Kreisler Competition.

Sitkovetsky captures the essential acerbic twists of Prokofiev's music, but is forced to do it in spite of Davis's heavily tempered designs. You end up wishing to hear Sitkovetsky paired with a conductor more agreeable to the lar-

cenous turns of Prokofiev's temperament.

The final movement of 1, for example, founders rhythmically except for the soloist's wry phrasing. And in 2's beautifully *cantabile* central movement, the $\frac{3}{4}$ -time pizzicato of the orchestra lies moribund while Sitkovetsky tries to lift the piece out of its malaise with his sweetly moving legato passagework. Throughout both compositions, Prokofiev's architectural schemes of lyricism spelled by asstringency are foiled, despite Sitkovetsky's dogged attempts to celebrate them.

The recording quality does little to dispel the patina of politeness. Dynamics ride too even a keel. And while there is fairly good ambience, there is little immediacy or orchestral detail. Reed instruments lack reediness; strings lack bite and air. It sounds like a distant mike setup in a large hall, even though the recording site was Abbey Road Studios.

One of the very best performances I have ever heard of the first concerto is by Erick Friedman with Leinsdorf and the BSO on an old RCA shaded-dog LP. Friedman captures all the fire *and* all the sweetness. For pairings of the two concertos, both Stern with Mehta (CBS Masterworks) and Perlman with Rozhdstvensky (EMI) offer more fully satisfying performances.

Sitkovetsky demands to be heard under more sympathetic circumstances.

—Robert Hession

PUCCHINI: The Unknown Puccini
Plácido Domingo, tenor; Julius Rudel, piano, organ
CBS MK 44981 (CD only). Kevin Boutote, Bud Graham, engs.; Michel Glotz, prod. DDD. TT: 46:54

This is slightly more than a curiosity. It takes two highly known quantities—Puccini and Domingo—and mixes them with the unknown—16 songs by a composer of grander forms. Many of these will be familiar even if you haven't heard them before, as Puccini later worked many of the tunes into his operas—there are snippets of *Manon Lescaut*, *La bohème*, and even *Gianni Schicchi*. It's fun trying to place melody into opera at first hearing, but CBS spoils the fun by including some really intelligent notes which spell it all out.

At any rate, much of this is salon stuff, early works, and a bit too easy-listening for my taste. But, that said, it's enjoyable enough. There are some treasures, such as the familiar "Mentia l'avviso" and "Sole e amor," both tenor favorites in recital. And the unfamiliar "Storiella d'amore" is surprisingly sophisticated in its melody—a pity Domingo strays from pitch once or twice. There are also some lemons: be wary of "Vexilla," the composer's setting of an Easter hymn

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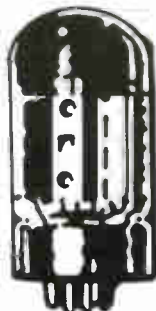
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for two voices (with a woolly-sounding Justino Diaz as bottom voice), and keep *very* far away from the "Hymn to Rome," composed in 1919 in honor of the Italian victories in the first world war. It may make you want to march.

Throughout, with the one exception noted above, the tenor is in fine voice, with particularly fine baritone resonance when it's needed. There's little sense of drama, but that's the song, not the singer. Julius Rudel is a fine accompanist, and the recording is vivid and bright—sometimes a bit too much of the latter. The cover photo of Domingo as Puccini is wonderful. This is for specialists and Domingo obsessives; it won't hurt, and it does give us a more complete picture of Puccini, but I doubt whether it will change anyone's way of thinking or listening.

—Robert Levine

SATIE: Solo Piano Pieces

Six Gnossiennes; Véritables Préludes Flasques (pour un chien); Vieux séquins et vieilles cuirasses; Chapitres tournés en tous sens; Trois Gymnopédies; Embryons desséchés; Je te veux; Sonatine bureaucratique; Heures séculaires et Instantanées; Le Piccadilly-Marche; Avant-dernières pensées; Sports et Divertissements
Anne Queffélec, piano
Virgin Classics VC 90754-2 (CD only). Mike Hatch, eng.; John H. West, prod. DDD. TT: 75:15

Having very recently reviewed two varyingly complete sets of Satie's piano music, respectively on four Circé and five EMI CDs with Jean-Pierre Armengaud and Aldo Ciccolini, each excellent in different ways, I was not in all honesty particularly eager to hear more Satie quite so soon again. I found, however, that French pianist Anne Queffélec has this music so well in hand that her 75-minute-long anthology for Virgin Classics of some of Satie's best-known works can with great pleasure be recommended as an excellent single-disc alternative, should either integral version strike one as an overly formidable expenditure. The 41-year-old performer is as sensitive as the aforementioned Satie specialists to the character and moods of Satie's sometimes arcane, occasionally arch, but inevitably entertaining *morceaux*. She has a particularly ingratiating tonal palette (especially well captured by Virgin), as well as impressive technique and, where necessary, temperament. If her *Gnossiennes* and *Gymnopédies* seem a trifle understated, that is surely preferable, I think, to the inappropriately romantic treatment one sometimes hears in these works. The warm, even soothing sonics feature excellent piano presence without quite attaining audiophile quality; tracks, as one might expect, are provided for all 12 pieces, and individual movements and sections (such as all 21 *Sports and Divertissements*) com-

mendably are accessible through index points.

—Igor Kipnis

SHOSTAKOVICH: Symphony 8

Yevgeny Mravinsky, Leningrad Philharmonic
Philips 422 442-2 (CD only). ADD. TT: 59:35

SHOSTAKOVICH: Symphony 8

Leonard Slatkin, St. Louis Symphony
RCA 60145-2-RC7 (CD only). William Hoekstra, eng.; Jay

David Sax, David Frost, prods. DDD. TT: 61:35

SHOSTAKOVICH: Symphony 8

Sir Georg Solti, Chicago Symphony
London 425 675-2 (CD only). Colin Moorfoot, eng.;

Michael Haas, prod. DDD. TT: 63:05

SHOSTAKOVICH: Symphonies 1 & 7

Leonard Bernstein, Chicago Symphony
Deutsche Grammophon 427 632-2 (CD only). Karl-August Naegler, eng.; Hans Weber, prod. DDD. TT: 119:53

For a start, it's fascinating to note that the only recording covered by this review which is not taken from a live performance is Slatkin/St. LSO. Nearly all of Mravinsky's recordings during his long tenure as conductor of the Leningrad Philharmonic were live performances. Bernstein has developed a preference for recording this way during the past 15 years, and it works well for him about 99% of the time. This is Solti's first live recording.

The Seventh and Eighth are wartime symphonies, and they've been taken quite literally over the years. The Seventh, subtitled "Leningrad," used to be dismissed (and still is by some) as a tendentious musical edifice to Soviet heroism in the face of Nazi invaders. The Eighth may be heard as a more personal and introspective statement on the spiritual devastation experienced by the survivors. Contemporary officialdom embraced 7, but resented the disturbing implications of 8.

Pigeonholing these symphonies in this manner has proven hardly more than a facile cop-out now that we have Shostakovich's *Testimony* to contend with, although the traditional interpretation of 8's meaning bears a closer relationship to the truth than that of 7.

Composed for and premiered by Mravinsky/Leningrad, 8 does speak as witness to the devastation brought by the War, but as the composer was to reveal late in his life, it also speaks of the suffering and terror experienced by those who lived under Stalin in the pre-war period as well.

With that kind of history and background, one would hope and expect that the Mravinsky/Leningrad recording would be the last word necessary on this symphony. Indeed, they lived the very life this music is about. If we had 8 before us in the recording for which they are rightly revered, from a tour performance at London's Royal Festival Hall, 1960, perhaps this



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would be so. Unfortunately, aside from some thrilling as well as haunting moments, this 1981 performance lacks the energy or tension to suggest its origins. The drab, colorless, bass-shy production offers scant evidence of stereo, and there's little left to draw us into Shostakovich's world.

Leonard Slatkin has thought out his approach to this work with meticulous attention to structure, detail, and nuance. He deftly avoids hectoring us with Shostakovich's extended fortissimos, and does especially well with the Largo fourth movement and the Finale, a tentative celebratory concerto for orchestra which nevertheless finds itself caught in crisis and ends in a shocked, benumbed prayer. Slatkin's most glaring miscalculation occurs in the third movement (effectively the work's second scherzo). The trio section, a manic gallop featuring the trumpet, is not only the turning point of the movement, but could be taken as the turning point, formally and psychologically, of the entire symphony. Both scherzos have been "interpreted" by observers as visions of the goose-stepping Wehrmacht. For me, this episode is more like the rallying of the Partisans. Its denouement and transition back to the ostinato juggernaut of the movement's outer section is one of the most haunting moments in Shostakovich. Why Slatkin has chosen, or allowed, this episode to be so blandly underplayed by his fine musicians is a mystery to me. This passage is one of the high points of the Mravinsky recording.

The Slatkin was engineered by William Hoekstra, who acted in this capacity (with Joanna Nickrenz producing) for the EMI recording of Barber works with Slatkin/St. LSO, and (with Patil Laursen producing) with these same forces for the EMI recording of Bernstein's *Serenade*/Schuman Violin Concerto with Robert McDuffie. Each of the above, most especially the Bernstein/Schuman, was exquisitely recorded. For the Shostakovich on RCA, Hoekstra appears to be working with a veritable retinue of producers, assistants, go-fors, tailors, cooks, and decorators. Producer Jay Saks may be identified with some of the worst mixes of the Dyna and post-Dynagroove era. The recording has impressive bass weight and excellent clarity, but lacks presence in the mids and highs, as though one were sitting way back in a corner instead of 10th-row center, or a front-center balcony location.

Solti's first live recording turns out to be a work only recently added to his repertoire. Solti often does his best work in public. In the field of opera, he is one of the all-time greats at generating atmosphere in a studio, but this gift does not always carry over to his record-

ings of concert music, which have run the gamut from gross exaggeration to perfunctory execution. If Mravinsky/Leningrad lacked overall conviction, perhaps they had told this story a few times too many, and just didn't have it in them on the occasion of that particular taping. Solti is telling this story for the first time. The CSO has played it several times, including a series under Slatkin. I heard Solti/CSO perform 8 at Carnegie Hall last February, one week after this recording had been taped. The recording is practically the same performance I heard in New York. The playing embodies the impeccable, highly polished quality which reflects the excellence and high standards for which the CSO is famous. Unfortunately, the performance falls short of the emotional factor which can be felt in Mravinsky, however feebly, and in Slatkin despite his miscalculations.

Moreover, the sound, incredibly, in view of the progress made at improving the sound of digital recordings, is a throwback to digitalis: shrill woodwinds, and for the CSO especially, a piercing piccolo that is character assassination for one of the profession's finest players, Walfrid Kujala, who can play as powerfully as required with the high-powered CSO, but has never played a piercing note in his life. It's bass-shy, too; the bass drum just doesn't kick in the way it does with such great effect in the Slatkin.

When we turn our attention to the Bernstein 1 and 7, we find ourselves considering an entirely different species of recording, one which heralds breakthrough qualities, which gives renewed meaning to the word "presence," as well as the suspension of disbelief. We can let the Mravinsky off the hook, as Soviet recordings have rarely achieved Western standards, but the DG shows up most of the better recordings of the past several years as being no more than adequate. It really shows up the Decca/London Solti Symphony 8, taped by the same orchestra in the same hall only months later.

Orchestra Hall is on the dry side, especially in the presence of a sell-out audience. Moreover, the 1966 renovation has de-emphasized the rich, warm bass sound and truncated the hall's smooth, even decay into something a bit too abrupt. That DG has succeeded in creating the impression of the CSO in its own space, with uncompromised bass and without resort to obvious or recognizable cosmetics, is quite a tribute to the possibilities of digital recording in the right hands. Indeed, the impression from the very opening of 1 is of being seated first-row center in the Gallery. In short, high Orchestra Hall, that places you with a virtual bird's-eye view of the CSO. A feel for the size of the hall space, as well as the location, are

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Moreover, the dynamic range is stupendous, with fortissimo tuttis as clear and unforced as they are loud, while at the opposite end of the spectrum, the many small ensemble moments and quiet solo passages are rendered with a quality of nuance which has not generally been acknowledged as the province of digital recording.

The CSO is one of the few great world orchestras with which Bernstein hadn't cultivated a presence; his last appearance before them was at Ravinia, 1956. DG has provided a production through which we may hear exactly how the CSO responds to him after all these years. What he draws from them are two of their finest recorded performances since the Reiner era, performances of great subtlety and refinement, as well as the extreme emotional range embodied in works of Shostakovich.

It is worth noting that, for the US edition, DG has included a highly enlightening essay of substantial length on both works by Richard Longman. In terms of 1 and 7, I can scarcely imagine how these performances could be improved upon, musically or sonically. As for 8, there are some fascinating rumors afoot as to which orchestra Lennie will return to for his recording of that work. But far be it from me to spread rumors. —Richard Schneider

STRAVINSKY: *Apollon musagete*
TIPPETT: *Concerto for Double String Orchestra*
William Boughton, English String Orchestra
Nimbus NI 5097 (CD only). DDD. TT: 53:11

Igor Stravinsky once exhorted conductors to learn a lesson from bell-ringers who pull the rope and then allow the bell to do the rest. Don't, that is, let an "interpretation" get in the way of compositional intent as expressed in the score.

But despite the great maestro's frequently stated disdain for what he considered podium excesses, I think there's little doubt that the blandness of this *Apollon musagete* would have put his eyelids at half mast. Although the level of playing is competent enough, even elegant at times, the overall effect is one of lifelessness and, well . . . letting the bell ring as it will. Perhaps even Stravinsky (who indulged in just a wee bit of hyperbole from time to time) might have agreed that interpretational wisdom—or at least an informed point of view—is almost as central to the communication of music as it is to drama. In any case, you will find little of either here.

The score (premiered in 1928) was conceived as the musical underpinning to a ballet which chronicles the birth of the Greek god

Apollo and Apollo's subsequent bestowal of special gifts on the muses Calliope (poetry), Polythymnia (mime), and Terpsichore (dance). While cast predominantly in the composer's relatively lean neo-classic style, there is also a fair amount of the overt romanticism more closely associated with the music of his 19th-century Russian forerunners. Unfortunately, much of it lies dormant in this rather bland portrayal.

Boughton's account of Sir Michael Tippett's *Concerto for Double String Orchestra* is quite another matter: emotional content bristles to the surface and, in general, it is a recreation of considerable strength. The concerto is an early work (1939) which displays great economy of means and points clearly to Sir Michael's more recent and oft-performed efforts. Its two outer movements brim over with high spirits as jazzy syncopations dart in and out of the texture, often tossed back and forth between the two string bodies. Nonetheless, the second movement is the work's jewel. Intensely lyrical, it is imbued with passion, nobility, and an affecting tenderness. While the opening melodic fourths sound a bit Bartókian, the main melodic material is clearly inspired by English folk song. At times, there is also a striking resemblance to the gestures of some black spirituals.

The work is currently available in only one other recorded version, that by the Scottish Chamber Orchestra with Tippett himself conducting (Virgin Classics CD 7 90701-2). Both it and the Boughton have distinct and competing virtues. Tippett's tempos are a bit slower, resulting in a certain grace that is not without charm. And the Adagio absolutely glows under his direction. On the other hand, Boughton's treatment of the allegro material generates greater excitement.

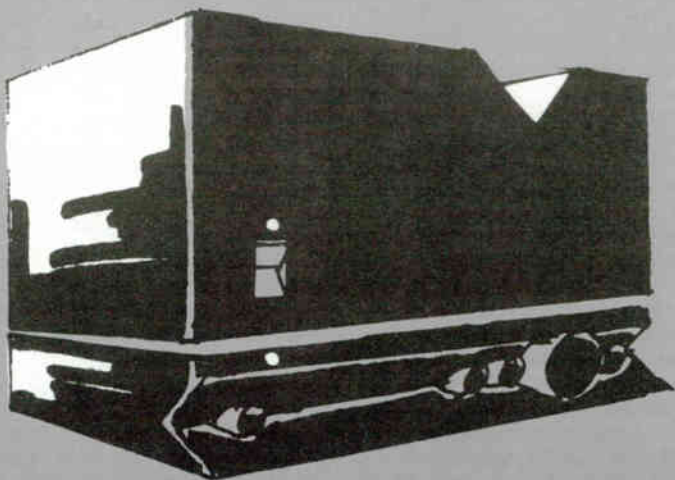
As to sound retrieval, the imaging of various instruments and groups on the Virgin Classics CD is striking, though Nimbus has achieved greater presence and, for me, a stronger illusion of live performance. While you won't go wrong with either version, I would opt for the Virgin Classics since it also includes fine renderings of Tippett's *Fantasia Concertante on a Theme of Corelli* and his highly evocative *Songs for Dov*. —Gordon Emerson

STRAUSS: *Der Rosenkavalier* (abridged)
Die Ägyptische Helena—vocal and orchestral excerpts;
two songs

Lotte Lehmann, Marschallin; Maria Olczewska, Octavian; Elisabeth Schumann, Sophie; Richard Mayr, Baron Ochs; others; Vienna State Opera Chorus, Vienna Philharmonic, Robert Heger (*Rosenkavalier*, recorded 9/33), Rose Pauly-Dreesen, soprano; Berlin State Opera Orchestra, Fritz Busch (*Helena*, recorded 10/28). Robert Hutt, tenor; Richard Strauss, piano (Songs

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Most Straussians know about and own this set of *Rosenkavalier* excerpts in one form or another; if they don't, this format will be an ideal way to remedy the situation. It is, indeed, a classic performance, despite its presentation of only 38 minutes of each of the first and last acts and 21 of the second. The engineers have knitted the excerpts together skillfully, however, so that the drama actually flows, and we do get just about all of the high points.

Lehmann was a glorious Marschallin, creamy and rich, and she sounds very fresh here. She has the distinction, I believe, of being the only singer to have performed the Marschallin, Octavian, and Sophie. Her interplay with Maria Olczewska's Octavian is winsome, wise, and full of charm, without ever being mannered. Olczewska is a very good Octavian, although this is the role which suffers most from the cuts. Her tone is always handsome and her characterization properly complex. Elisabeth Schumann's Sophie has never been bettered—the singing is pure and a delight throughout, even in the Marschallin's final "Ja, ja," which she sang for Lehmann, who had to leave the recording sessions early. (In addition to everything else, as you'll hear, Schumann was a great mimic.) Richard Mayr's Ochs, though caught a bit late in his career (he sang the role during the opera's first season, in 1911), is excellent: underplayed, tattered around the edges, and no caricature. The rest of the cast, in their tiny parts, are fine, and the playing of the VPO is wonderful. Strauss, the rumor goes, wanted too much money to conduct, so Robert Heger was brought in. His leadership is solid and supportive, if never quite inspired.

The last 19 minutes of the second CD are taken up by four excerpts from *Die Ägyptische Helena*, with Fritz Busch conducting and Rose Pauly-Dreesen singing, and two songs sung by Robert Hutt with Strauss at the piano. *Helena* is a glorious, weird work so "Straussian" that it occasionally sounds like an imitation, and Busch brings out all the lushness he can. Pauly-Dreesen shows a voice of great warmth, with the correct wingspan for the long lines of the music, fabulous circle-around high D-flat and all. Robert Hutt is a tenor about whom we needn't worry too much, but his singing of both "Morgen" and "Breit über mein Haupt" is acceptable, and it's nice to hear Strauss himself accompanying.

The sound is not good. Yes, it's been cleaned up, but the transfers were made from records in a private collection and they're full of scratches and the like. Still, it's listenable, remarkable, and

one of a kind. For enthusiasts, definitely; others may not be quite curious enough.

—Robert Levine

VERDI: *La Traviata*

Lucia Aliberti, Violetta; Peter Dvorsky, Alfredo; Renato Bruson, Germont; others. Fujiwara Opera Chorus, Tokyo Philharmonic Orchestra, Roberto Paternostro Capriccio 10 274/5 (2 CDs only). Michael Horwath, prod.; Tsuneo Ishizaki, eng. DDD. TT: 112:45

Recorded in Japan's Suntory Hall "with its exceptional acoustics and technical facilities," Michael Horwath writes in his notes, "Discipline and enthusiasm were the driving forces for the realization of this, the first entire production of an Italian opera in Japan." And indeed, the orchestra and chorus play and sing this music as I haven't heard it since the old Toscanini recording (it's actually even *more* accurate), and the sound is magnificent, with perfect balance and great response all through the range. Unfortunately, there's more to life than all that. Sorry, folks, but this is an opera, not an experiment.

There's no feeling in the orchestral playing, and I'd be willing to swear that the chorus doesn't have a clue as to what they're singing about in Act I. I could understand this if the conductor were named anything other than Roberto Paternostro (and what a name it is), but with an Italian at the helm I was expecting more—some *morbidezza*, some *legato*, some *rubato*. In fact, this would be "The Stepford *Traviata*" if the soloists weren't so individual.

Aliberti remains an interesting enigma, with a Callas-type voice, a fine, if disconnected, upper extension, and some original ideas about phrasing and *portamento*, but without either the experience to follow through or the clout to make Paternostro give her some lead. The second-act finale is a horror of insensitive rushing which the soprano tries to stem, but to no avail. Her reading of the letter is too wild, but the aria is stunning, although the drastic variations in dynamics she uses are frequently more off-putting than effective. She's still worth hearing, though. Bruson is a bit worn here, but he *can* bully the conductor at times, therefore turning in a beautiful "Di Provenza" with the grace notes sounding properly like tears. I can't imagine what has happened to Peter Dvorsky; here he sings flat and bawls most of the time, notwithstanding a good high C at the close of his cabaletta. He's positively awful. The Gastone of Hiroshi Mochiki is unintentionally funny, and the rest of the cast sounds sincere.

OK, there's a certain surging inevitability to the leadership, but it doesn't make any point, it just surges—and very fast (look at the total timing and remember that both tenor and bar-

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itone cabalettas and some applause are left in). The party scene in Act II is remarkable for its precision: one marvels and is eventually iced out. And yes, the sound is spectacular. But I can't recommend this performance as anything other than an oddity and a stop on Alberti's presumed road to stardom (she's still in her early 20s). Booklet contains essay, German-Italian libretto, synopsis, and some photos of this live concert performance. Separate booklet with English libretto. Over to you.—**Robert Levine**

WAGNER: *Das Rheingold*

James Morris, Wotan; Marjana Lipovsek, Fricka; Heinz Zednick, Loge; Theo Adam, Alberich; Peter Haage, Mime; Andreas Schmidt, Donner; Peter Seiffert, Froh; Eva Johansson, Freia; Jadwiga Rappé, Erda; Hans Tschammer, Fasolt; Kurt Rydl, Fafner; Julie Kaufmann, Woglinde; Silvia Herman, Wellgunde; Susan Quittmeyer, Flosshilde; Bavarian Radio Symphony Orchestra, Bernard Haitink

EMI/Angel CDCB 49853 (2 CDs only). Martin Wöhr, eng.; Wolftram Graul, Peter Alward, prods. DDD. TT: 2:28:49

Wagner knew better than to linger over the action of *Das Rheingold*. More happens in these 2½ hours than in any of Wagner's 4-hour operas—it *moves*. The music is appropriately brisk, lean, even cold; it's almost everyone's least favorite quarter of the *Ring*. But that coldness, too, is appropriate—there's not a single human being in *Das Rheingold*. Gods, giants, dwarfs, nymphs, elementals, but no *people* to empathize with. Emotionally, it's hard to make this work "work."

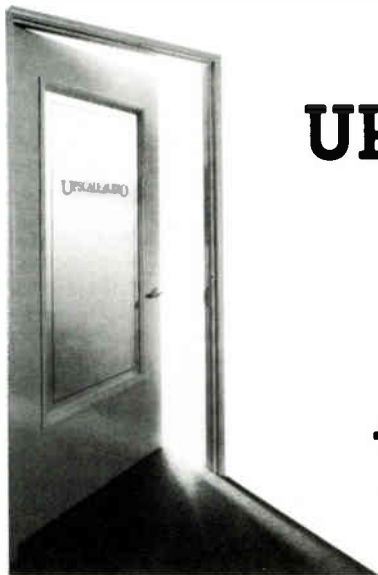
Different conductors approach this problem with various ploys. Both Knappertsbusch and Furtwängler veer between grinding solemnity and desperate bolting through the "good parts." Solti, Böhm, and Krauss press the pedal to the metal, rev it up, and blast through with sheer excitement. Karajan and Goodall take it slow, savoring what they can, endlessly lieder- and epic-like, respectively, while Boulez lights everything from below and behind, dissecting the traditional Wagnerian Wall of Sound, X-raying the music's sinew, cartilage, and bones, but removing much of its gorgeous flesh and skin.

Bernard Haitink manages a seemingly impossible blend of the approaches of Boulez, Solti, and Karajan in this second installment of his EMI *Ring* cycle, arriving at something uniquely his own. The endlessly floating *legato* of which I accused Levine in the DG *Walküre* last summer (Vol.12 No.7) is here appropriated by Haitink and made something else again. Yes, Karajan's endless *Lied* is here too, but, unlike Karajan's *Ring*, there's lots more as well. In both voices and orchestra, the colors are golden, autumnal, limpid (admittedly, the orchestra always glows but almost never sparks). What's

remarkable about this seemingly nostalgic patina is that Haitink also seems bent on revealing all of the seams of harmony and orchestration that Wagner so carefully hid with doubling, overlapping, and terracing. So much is revealed, but there is no sense of "dissection." One gets the feeling of the music rising like mist *through* the orchestra, not *from* it—the instruments become a scrim of dramatic transparency that is no less substantial for all that. A remarkable accomplishment, and very different from the sound the same orchestra, conductor, composer, and label got in their 1985 *Tannhäuser* (excellent in its own ways).

This *Rheingold*, though one of the slower readings on record, dramatically moves almost too fast. There's almost as much *Sprech* as *Gesang* here, the relatively close vocal miking—which approximates Bayreuth's singer-sympathetic balance of voices and orchestra—allowing all kinds of whispers and growls that might not have worked on any stage but *der grüne Hügel*'s. Haitink's singers remind us what a seamy, plotting bunch of ambitious scuzbags the *Rheingold* cast is—as even a cursory re-reading of the libretto will remind you, there's little nobility, honor, or love lost among these immortals; only Erda seems unselfish and honest. From Theo Adam's Dostoyevskianly desperate Alberich—how's *that* for vocal casting?—to James Morris's virile, grasping Wotan bitterly taunted by Marjana Lipovsek's lively, passionate Fricka, to the slippery-voiced Rhine-maidens to, best of all, Heinz Zednick's reprisal of the rottenly devious Loge he sang for Boulez/Chereau in Bayreuth's notorious centenary *Ring*, a Loge filled with more hate for the Gods than even Alberich spews—Haitink's *Rheingold* never lets one forget the dance of lies (Wotan's mercenary lie to the Giants, the Rhine-maidens' amorous lies to Alberich) that sets the entire great machinery in motion, and which can be redeemed only by an unwitting human and a defrocked demigoddess.

James Morris is simply amazing, reminiscent of George London at his very best—including, though, London's stiffness. "Halt, du Wilder!" is breathtaking—the sheer volume alone is remarkable, but Morris has such obvious intelligence that one never thinks of him as merely a set of muscle-bound vocal cords. His Wotan is one troubled Head God; the wheels whirring under that winged helmet are all too audible as he attempts to shore more fragments against the mounting ruin of his divine career, as he indulges in that seemingly unique German propensity to maudlin sentimentality and empty moral posturing while hiring others to do his dirty work. A troubled and troubling characterization.



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Marjana Lipovsek's Fricka is the only one I know of in which one can hear the rages of the betrayed *Walküre* wife bubbling just beneath the surface. This is not the matronly *Hausfrau* we've come to expect in the role, but a strong person in her own right who knows all too well that the best eons of her marriage are over. Good as Waltraud Meier was in Haitink's *Walküre*, I'd love to have heard Lipovsek there as well.

Heinz Zednick is one of the harder-working Wagnerian character tenors around; he stole the show in the '76 Chereau *Ring*, and here brings his precise vocal acting skills to bear; you can hear him just hugging himself with glee as he maneuvers the gods into ever-hotter water. This is as opposite as could be to Set Svanholm's philosophical, above-it-all, almost balletic fire god in the Solti recording. The voice is not in as great control as it was, though this is even more true of Theo Adam's troubling Alberich, all wobble and garble and gnashing teeth. I've always thought Alberich should enjoy his brief and greedy glory as Ringmeister, if only a little, but Adam's characterization is straight out of Freud: compulsive, manic, a desperately repressed id on hairy legs. Adam shouts and growls, pitches dropping right and left, leaving a trail of masticated scenery. In keeping with this style, Peter Haage's frenetic Mime is acting with a little singing thrown in. In fact, Haitink's reading of the score seems to entirely support—is this possible, purely in musical terms?—Shaw's socialist reading of the libretto as a cautionary symbolic tale of the horrors of materialism. Listening to Haitink's *Rheingold*, and for the first time in a lifetime of listening to this music, GBS's exegesis was foremost in my mind.

Of the all-too-human-scaled giants, Hans Tschammer is a noble Fasolt, albeit with occasionally flaky intonation, while Kurt Rydl is a more pompous, less crafty Fafner than he should be. Andreas Schmidt and Peter Seiffert are the usual straight men in the thankless roles of Donner and Froh, respectively, though Seiffert is more staunchly thoughtful than most singers can manage. Eva Johansson is an adequately voiced Freia in a role that only asks one to call for help convincingly, and Jadwiga Rappé's Erda warns Wotan with a younger, lighter voice than the usual heavily glottal contralto, though seems at times out of her vocal depth. Dramatically, Rappé does as well as any in a virtually impossible role.

All is not perfect: the dragon music is a dud, Donner's thunderstorm sounds like chamber music until the very convincing (real) thunder at the very end, the Rhinemaidens are miked way too close as the gods cross the rainbow bridge, and I kept wondering whether Theo

Adam just hasn't the strength to sing Alberich this late in his career, fully as he throws himself into it here. The BRSO seems fully equal to the task, though the brass are a tad watery and Frenchified, and the woodwinds are hardly the dark, reedy, VPO-type honkers I developed a taste for by listening to Solti over the last 30 years.

But the recording is gorgeous, transmitting a wonderful sense of the orchestra spread out in the Munich Residenz's Herkulesaal, with a minimum of spot miking. The sense is of a huge, high space, as if the opera really was taking place at the top of the world, as it should. The drama is acted out spatially as well as vocally, characters moving Culshaw-style across the soundstage. The orchestral sound is smooth, warm, lush, gracious, if with just a tad too much Nimbus-style bloom for my tastes.

And hats off to EMI, not only for packing these 2½ hours of music onto two CDs,² but also for an excellent libretto booklet which includes *all* of Wagner's lengthy original stage directions, musical examples of the motives labeled and keyed to the text, and a type size and style more readable than the page now in your hands.

Really, a fine job all around, though the Solti recording is still top of the heap by a wide margin. I'm still amazed that Haitink, conductor of all those oh-so-respectable but tedious recordings of the standard orchestral repertory, could be responsible for such gripping operatic work. Can't wait to hear *Siegfried* and *Götterdämmerung*. —Richard Lehnert

WAGNER: *Tristan und Isolde*

Birgit Nilsson, Isolde; Jon Vickers, Tristan; Ruth Hesse, Brangäne; Bengt Rungren, Marke; Walter Berry, Kurwenal; Stan Unruh, Melot; Horst Loubenthal, Sailor, Shepherd; New Philharmonia Chorus (Walter Hagen-Groll, dir.), Orchestre National de l'ORTF, Karl Böhm
Rodolphe RPC 32553.55 (3 CDs only). Recorded live, 7/17/73. ADD? TT: 3:27:12

This French *Tristan* will be of interest primarily to those who cherish the 1966 Bayreuth recording on DG 419 889-2, also with Böhm and Nilsson (but with an aging though still brilliant and clear-voiced Wolfgang Windgassen as Tristan). The notes claim this to be the only performance, recorded or not, shared by Nilsson and Vickers. Not true, though it is the first recording to be released. The notes also laud this recording's "rigorous respect for the score," but omit to note that, for this performance, Böhm made the standard Act II cut—pp.285–333 of that rigorously respected

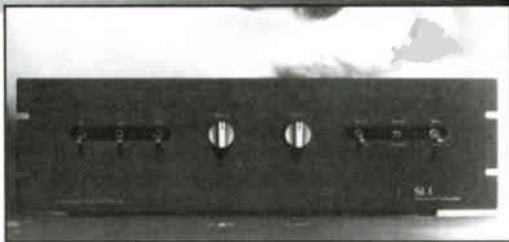
² Hear that, London/Decca? Your *Rheingold* is ten minutes shorter, on *three* CDs! What gives?

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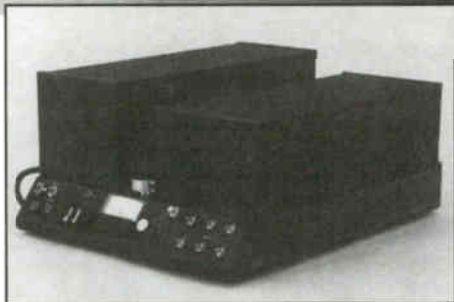
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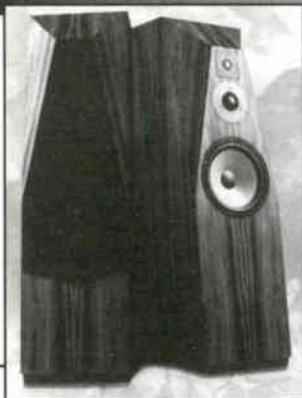
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score—from Tristan's "Dem Tage! Dem Tage!" through his ". . . war es zu sehen taue," almost ten minutes of music.³

That's not the only problem. This is not only a live recording, but an *outdoor* live recording, and the mikes were not wind-shielded on what was a very blustery evening. Most of the bottle-dropping audience was in a raucously festive mood (as were the crickets), those who listened making almost as much noise shushing those who didn't. And there are planes overhead, out-of-tune brass and tympani, and, during the thunderstorm in Act I, doubly watery French French horns. (Actually, as Act I unfolds ship-board, all the wind, rain, and thunder almost work.)

But after Nilsson's shaky start—lunging at the notes, inaccurate intonation, vocal over-acting—you'll hear some galaxy-class singing. Nilsson is less a great singer than a force of nature, as usual—again and again, I kept wondering, "How does she *do* that?" When she sings "für seinen Herrn gewann" in Act I—who else could hit that G on "Herrn" so fully, so exactly, so strongly, so lightly? But throughout there's a harsh edge to her already-steely voice that, exacerbated by the harsh CDification of these archive tapes, makes for an ear-aching evening.

Jon Vickers has taken his share of lumps over the years for his unique vocal cragginess, that brassy, froggy voice that's always made him sound older than his years. But, Good Lord, there's a *lot* of it! He may not have Windgassen's quality or singerly intelligence, but he matches Nilsson effortlessly (something Windgassen, even at his peak, could never quite do), to great effect in the multiple vocal orgasm immediately following Tristan's Act II entrance. The duet that follows ("O sink hernieder") is thrilling, and by Isolde's return in Act III Vickers had convinced me almost entirely.

Walter Berry is a rowdy Kurwenal, Ruth Hesse an excellent Brangäne who keeps the vocal hand-wringing in, er, hand, Bengt Rungren's King Marke is less lugubrious than most, and all are in excellent voice. Those who thought Karl Böhm's DG *Tristan* a bit brisker than it had to be should be warned that, even taking into consideration the Act II cut, this one is even faster, and the polar opposite of Bernstein's almost static five-CD meditation on Philips 410 447-2. But it works—Böhm's headlong rush merely underlines the deadly desperation of the lovers' doomed hearts.

This performance can not and should not

³ Sir Thomas Beecham made the same cut in his brisk, muscular, otherwise complete 1937 Covent Garden *Tristan* with Flagstad, Melchior, Schöffler, and Klose, recently reissued on Melodram and well worth a listen.

replace the 1966 Bayreuth recording in anyone's collection. *That* recording will stand for decades more as a testament to the taste, talent, and streamlined passion of all concerned. But the Rodolphe, even with its cut and the endless (no exaggeration) wind noise, is fascinating listening and well worth release.

—Richard Lehnert

WALTON; Symphony I; Variations on a Theme by Hindemith

Vernon Handley, Bournemouth Symphony
EMI CDC 7 49671 2 (CD only), Mike Clements, eng.;
Andrew Keener, prod. DDD. TT: 66:17

Just when you thought it was safe to go out and buy the Previn/LSO Walton 1 on RCA and be done with it, EMI has to annoy us with their first recording in more than 20 years of a little-known Walton work which turns out to be one of his best pieces, and couple it with yet another recording of Symphony I, after we've already concluded that the 1966 Previn couldn't be beat. Previn couldn't beat it in his own Telarc/RPO remake. Leonard Slatkin achieved a kind of parity with the LPO, only to be undone by Virgin engineers. And Handley is no virgin when it comes to this piece: his first attempt in 1978 with the Royal Liverpool Philharmonic appeared variously on Enigma, ASV, and in the US was licensed to Nonesuch, which is how I listened to it—once.

But in all fairness, Handley has acquired an excellent reputation. Peruse a sampling of his work, and it runs the gamut from professionally acceptable (Prokofiev 5/EMI) to stunningly definitive (Vaughan Williams *Sea Symphony*/EMI). One is inclined toward reserved optimism.

The Previn/RCA does not lose its landmark status. One quality which has set it apart from other recordings could be described as a kind of manic intensity of the type that Munch or even Toscanini might have brought to the work. Manic works well for Walton 1, but this generation of performers is too civilized and cautious for manic.

That said, my ears tell me that Handley has succeeded where all others but Slatkin have failed, and Handley's new recording, unlike Slatkin's, may be listened to without pain. Manic isn't in anymore, but Handley drives the work on its inner voices, bass lines, and accompaniment figures; pulse is always happening. Mr. Handley has what jazz musicians call "great time." Moments of repose in the bustling 1st movement are given plenty of space to breathe, his solo woodwinds are permitted (no doubt encouraged) to play with complete security and personal authority. These qualities are of particular importance to the third movement, which receives as moving an account as I've



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ever heard. But pride of place goes to the scherzo, which, in the revelation of all its constructional details, beats 'em all.

If you have any recording of Walton I other than Previn/RCA, too bad. If you have the Previn/RCA, you may duplicate it with this one as a more than worthy alternative, and receive Variations on a Theme by Hindemith.

The subject of the Variations is the opening theme from the second movement of Hindemith's Cello Concerto. This theme concludes with a highly recognizable phrase from Hindemith's *Matthis der Maler*, so in a sense we have Walton varying two themes in one. In working out the variations, it's fascinating to study the manner in which Walton asserts his own style upon Hindemith's material, only to "become" Hindemith at certain key points in the composition. There can be no doubt that the work is a genuine personal as well as professional tribute.

Composed in 1963, this largely neglected masterpiece was recorded by the Cleveland Orchestra under George Szell, coupled with the same performers' rendition of Walton's Symphony 2, but has been unavailable for a decade. Deserving of reissue as it is, the Szell/CO will have to await the effect of Günther Breest and Sony Classics for a more rational approach to reissuing the vintage Columbia catalog.

Handley's recording locale, Wessex Hall, Poole Arts Centre, Dorset, sounds a bit modern and generic, but the team of Keener and Clements, two thirds of the team who gave us the demonstration-grade Handley/VW *Sea Symphony*, have given us a clear, full-bodied, and honest presentation of each work, but I believe they had a far better space to work with in Liverpool. In any event, it is apparent, among other qualities possessed by Vernon Handley, that he seats his strings in the "old style," with antiphonal first and second violins. It is also apparent that this recording gives further evidence for the growing stature of an ever more important conductor in the prime of his career.

—Richard Schneider

Classical Collections

EDMUND BATTERSBY: *The Early Romantic Piano*

Chopin: Ballades 1 & 4; Nocturne, Op.48 No.1; Waltzes, Op.64 Nos.1 & 2; Schumann: Kreisleriana, Op.16
Edmund Battersby, Regier copy of 6½-octave Graf fortepiano

Musical Heritage Society MHS 512249Z (CD only). David B. Hancock, eng. & prod. DDD. TT: 63:06

As early-music interest and period performances keep stretching the barriers of time for-

ward, more and more recordings feature the use either of originals or, as here, reproductions of 19th-century instruments. What one hears on this most interesting disc is a copy of an 1820s, essentially all-wood fortepiano by the Viennese builder Conrad Graf. Beethoven had one. So did Clara Schumann, and both Chopin and Liszt were quite familiar with the builder's work. The reproduction by Rodney Regier, a first-rate 20th-century craftsman from Freeport, Maine, as well as the playing of Edmund Battersby, will fascinate a considerable number of listeners but may also puzzle some whose orientation is toward the brilliance of the modern piano. Most attractive here, without question, is the subdued quality of the instrument and the poetic nature of the interpretations. Battersby, who is on the faculty of Montclair State College and who originally studied modern piano with, among others, Sascha Godonitzky, sounds remarkably at home in all respects on an instrument that is not only difficult, even treacherous to play because of its light action, but which can easily sound glassily shallow in the treble and constricted throughout in its dynamics. It is vastly to the builder's and player's credit that the piano sound, as has sometimes been the case, does not in the least resemble that of an out-of-tune, dried-out, bar-room antique.

Still, there is no denying that these performances are far more notable for their dreamy, even introspective atmosphere than for their brilliance and sparkle, which, as in the perorations of the two Chopin Ballades and the more exuberant, Florestan-like sections of the *Kreisleriana*, emerge almost as introverted. Possibly this may be caused by the recording itself, the qualities of this particular instrument, or, in this case, simply to the effects of a less flamboyant, less dramatic interpretation (perhaps it is due, as well, to the softening effect of the moderator stop, which puts a strip of wool between the hammer and strings and which, I suspect, Battersby uses at times to avoid an overly clattery treble).

In any case, the pianist must be praised on a great number of counts: superb technical control and understanding of his instrument, interpretive refinement, and the loveliest poetic sensibility, making the Schumann, in particular, such an ear-opening experience. Also delightful and refreshing to the jaded palate is the Minute Waltz, as well as Op.64 No.2, and the C-Minor Nocturne is almost hypnotic in its color. The clear, albeit somewhat midrange sonics, in addition to the comments already noted about the generally subdued climaxes, are not particularly helped by a good many disturbing low-end ambient noises (rumbling of trucks?)

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—Igor Kipnis

ARTURO TOSCANINI AND THE PHILHARMONIC-SYMPHONY ORCHESTRA OF NEW YORK: *The Great Recordings, 1926-1936*

Beethoven: Symphonies 5 & 7; **Brahms:** Variations on a Theme by Haydn; **Gluck:** *Orfeo and Euridice*; Dance of the Blessed Spirits; Haydn: Symphony 101; **Mendelssohn:** *Midsummer Night's Dream* Incidental Music, Scherzo (two versions), Nocturne; **Mozart:** Symphony 35; **Rossini:** *Barber of Seville, L'Italiana in Algeri, Semiramide* overtures; **Verdi:** *La traviata*; Preludes to Acts I & II; **Wagner:** *Götterdämmerung*: Prologue, Dawn, and Siegfried's Rhine Journey (arr. Toscanini); *Lobengrin*: Preludes to Acts I & III; *Siegfried Idyll*

Arturo Toscanini, New York Philharmonic
Pearl CDS 9373 (3 mono CDs only). AAD. TT: 3:40:47

BRAHMS: Symphony 4, *Tragic Overture*

Arturo Toscanini, BBC Symphony
EMI 69783 (mono CD only). ADD. TT: 51:51

WAGNER

Lobengrin: Prelude to Act III; *Siegfried Idyll*; *Götterdämmerung*: Siegfried's Death and Funeral Music; *Tristan und Isolde*: Prelude and Liebestod; *Tannhäuser*: Overture and Bacchanale

Arturo Toscanini, NBC Symphony
Music and Arts ATRA-601 (mono CD only). AAD. TT: 74:59

These three releases are invaluable to anyone interested in Toscanini. The EMI CD is especially revealing, offering a 1935 live performance of the Brahms Fourth unlike any of the conductor led at NBC—one that is rhythmically freer, more broadly paced, and considerably more old-fashioned in its abundance of portamento. And in the finale, the rhythmic freedom Toscanini permits comes close to undermining the music's continuity. But at other times, particularly in the suggestion of haunting longing in the first movement, the performance should prove deeply moving. Certainly it differs markedly from Toscanini's more chiseled, leaner, and considerably less inflected familiar NBC recording superbly transferred to CD by RCA about two years ago. The 1937 studio recording of the *Tragic Overture* sounds better here—thanks to Keith Hardwick's excellent restoration—than in any previous extended-play edition.

The Pearl package comprises virtually all of Toscanini's New York Philharmonic recordings, including the extraordinary 1933 Beethoven Fifth that the conductor did not approve for release. (The only item missing among his studio efforts with this orchestra is another rejected Beethoven Fifth from 1931.) Put simply, the 1933 effort is the finest Toscanini account of the work I have ever heard—broader, freer, and (in the finale) more majestic than either of the two recordings he did approve. And in Marc Obert-Thorn's transfer the sound is exceptionally fine for its vintage. Indeed,

every one of his transfers in this set captures better than has any previous LP edition not only the extraordinary dynamic range and impact of many of these 78s, but also the weight and tonal allure of Toscanini's Philharmonic. The Haydn and Mozart symphonies, recorded in 1929, are, to be sure, a bit dim by today's standards, yet even they sound far better here than in earlier (inaccurately pitched) RCA LP reissues. And in all of the remaining works one encounters a virtuosity, drama, controlled intensity, and tenderness that prove spellbinding. Those who know Toscanini only from his later NBC years should find this set an ear-opener.

The Music and Arts Wagner disc is made up of live performances from 1952 and '53, all drawn from NBC broadcasts. Only the *Tannhäuser* Overture and Bacchanale fail to represent Toscanini at or close to his best. Conversely, the *Siegfried Idyll* proves more expressive than the version the conductor produced in the studio during the same period. Indeed, the performance is in some ways more aptly lyrical than the 1936 *Idyll* included in the Pearl set, despite the NBC Symphony being tonally far coarser and less opulent than the Philharmonic. The sound throughout this disc (FM airchecks, I suspect) is very bright, a trifle harsh in fact, with tape hiss always apparent. Still, the overall quality is equal to that of better studio efforts of the period. Surely as a document of the marvels the 85-year-old Toscanini could produce before an audience, this CD is fascinating.

—Mortimer H. Frank

VARIOUS: *Musick For Severall Friends*

The Newberry Consort: Mary Springfels, bass viola da gamba, director; Drew Minter, countertenor; David Douglass, early violin, bass gamba; Kevin Mason, theorbo, lute

Harmonia Mundi HMU 7013 (LP), HMU 90713 (CD). Peter McGrath, eng.; Robina Young, prod. AAA/AA. TT: 61:04

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Performance: 10, Sound Quality: 10

— *CD Review*

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ranging from the spread of foreign (especially Italian) influences to the stimulating political climate. My own opinion, agreeing with Victor Hugo, is that it was the last rays of the Gothic sunset.

The present disc serves the listener as an introduction to three relatively unknown English composers: John Wilson (1595–1674), whose settings of Shakespeare are his only compositions you are likely to have heard; Christopher Simpson (ca 1605–1669), perhaps familiar only to students of viol writing; and Henry Butler (?–1669), of whom I had never heard. You *will* probably have heard of Matthew Locke, represented here by a beautiful suite of dances. I suspect that if you are at all sympathetic to the late Renaissance/early Baroque style, this disc will leave you hungry for more.

This is the first recorded appearance by the Newberry Consort, a truly worthy discovery of Robina Young's. How wonderful it is to hear an American consort playing as well as any of the celebrated Europeans—not wonderful in some absurd patriotic sense, but simply because talent anywhere ought to be recognized and used. Drew Minter is, of course, a rising young star, and he sings perhaps more beautifully here than I have heard him, but his Newberry cohorts are superb musicians as well. Mary Springfels is a fine gambist, with a strong rhythmic sense and excellent bowing, as well as giving spirited direction to her group; Kevin Mason has rather little to do on this particular recording, but sounds fine; David Douglass is one of the few active performers on the pre-Baroque violin,⁴ which he plays splendidly, and the whole of the Consort is very much more than the sum of its parts. The Newberrys take their name from their association with the Newberry Library in Chicago, and draw much of their material from the collections there. It is good to see institutions make such use of their cultural resources.

The selections on this record are nicely divided between vocal and instrumental works: many of both call for considerable virtuosity, and the Newberry Consort is more than equal to the task. I especially enjoyed the Locke suite mentioned before, and Minter's splendid articulation of the vocal line in several of the Willson selections. The literature which accompanied this disc contained a copy of the review by a perceptive chap⁵ from *The New Yorker*,

⁴ I'm not so sure of the use of the term "early violin" to differentiate this fiddle from the Baroque instrument. The technique of playing, however, is considerably different.

⁵ Andrew Porter was the fellow's name, and he writes a fine review—has done for some time.

who opined that no one elucidates the English language better than Drew Minter. What can I do besides agree?

Is there a condition known as "bleary-eyed"? If not, there ought to be. *Bleary-eyed*, adj., colloq.: the condition which obtains as the result of too much comparative listening to CD and LP versions of equal excellence. I tried to come up with a winner here, but I ended up awarding points to both formats. If required to choose, I would probably go for the digital. Sixty minutes is an awful long LP, and requires cutting at fairly low levels; the resultant S/N is a bit low for my tastes. Positive aspects of the LP were greater sweetness in the violin sound, and a touch more air. The CD boasts better low frequencies, and more of the low-level detail that helps to give a feeling of live performance. The format question aside, this is another success for Robina Young and Peter McGrath. If you've heard any of their recordings, I need say no more.

One last note: this recording makes it clear that LP is now the poor relation to the CD. The LP liner notes were a sadly truncated version of the CD booklet, some of the photographs in the latter were omitted from the former, etc. I was going to suggest buying the LP simply to support that dying medium, but you probably won't be able to get it.

—Les Berkley

Show Music

HELEN SCHNEIDER: *A Walk on the Weill Side*
Helen Scheider; Bruce Coyle, piano, arrangements; Larry Fast, electronic orchestration, synthesizer programming
CBS MK 45703 (CD only). Paul Higgins, eng.; Helen Schneider, prod. TT: 53:42

Ho hum, thought I. Another singer/actress getting on the Weill bandwagon. Probably can't sing very well and hopes to make up for it by "acting" the songs. There's no way she can match Teresa Stratas or Ute Lemper in this repertoire. Corny title for the album.

Well, it just goes to show how wrong one's preconceptions can be. Helen Schneider is a great singer *and* actress, a match for any performer—yes, even the divine Stratas—in her interpretations of the music of Kurt Weill. Vocally, she's something of a chameleon, moving from the breathless Marilyn Monroe sound of "I'm a Stranger Here Myself" to the cabaret-singer's belt of "September Song" to the ingénue-like purity of "My Ship." And she is an actress, too, creating character and situation with each song. Apart from the occasional bit of German, used for atmosphere, the songs are all performed in English; in fact, most of them come from Weill's American works (*Lady in the*



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Dark, Johnny Johnson, Street Scene, Knickerbocker Holiday, etc.). In "Mack the Knife" and "Pirate Jenny," Schneider, born in New York, affects a Cockney accent; it gives a rather contrived impression—which, come to think of it, is not incompatible with the Brechtian performance style. Everywhere else, Schneider's performances have a straight-from-the-soul honesty that allows the listener to share the emotions that the performer is quite obviously experiencing. This sense of involvement is perhaps best illustrated by "What Good Would the Moon Be," from *Street Scene*. As sung by Anne Jeffreys in the original cast, the number comes across as pleasant but rather bland, perhaps even clichéd. Listen to Schneider sing it, especially the long-held note on the last word of the line "As long as he loves just me," and you're in major goosebumps territory.

The accompaniments are a little strange. Schneider first recorded the numbers accompanied by Bruce Coyle on the piano, then, for some of the numbers, the piano track was "electronically orchestrated" using an array of synthesizers and effects boxes. The liner notes refer to this process as "technology to the rescue," but I'm not convinced that anything that needed rescuing. Although synth-lovers may feel differently, the most effective accompaniments seem to be the ones with piano only. (Actually, I'd like to hear the entire recording in the original, un-rescued form.)

Technically, the recording is just fine, with realistic voice and piano timbres, and synthesizers that sound just like, well, synthesizers. Helen Schneider is a major talent; I hope the people at CBS recognize this and sign her to a multi-record contract. My suggestion for the next release? An album of songs by Stephen Sondheim. But they'd better not call it *Everybody Loves Somebody Sondheim*.

—Robert Deutsch

Jazz

HARRY CONNICK, JR.: *When Harry Met Sally*. . . Harry Connick, Jr., piano, vocals; Benjamin Jonah Wolfe, bass; Jeff "Tain" Watts, drums; Frank Wess, tenor sax; Jay Berliner, guitar; Marc Shaiman, big-band arrangements, piano

CBS SC 45319 (LP), CK 45319 (CD). Tim Geelan, eng.; Connick, Shaiman, prods. DDD, TT: 38:28

THELONIOUS MONK: *Straight, No Chaser*

Thelonious Monk, piano; John Coltrane, Charlie Rouse, Johnny Griffin, tenor sax; Phil Woods, alto sax; Ray Copeland, trumpet; Jimmy Cleveland, trombone; Wilbur Ware, Larry Gales, bass; Shadow Wilson, Ben Riley, drums

CBS SC 45358 (LP), CK 45358 (CD*). Danny Kopelson, eng.; Orrin Keepnews, prod. ADA/ADD, TTs: 48:02, 53:40*

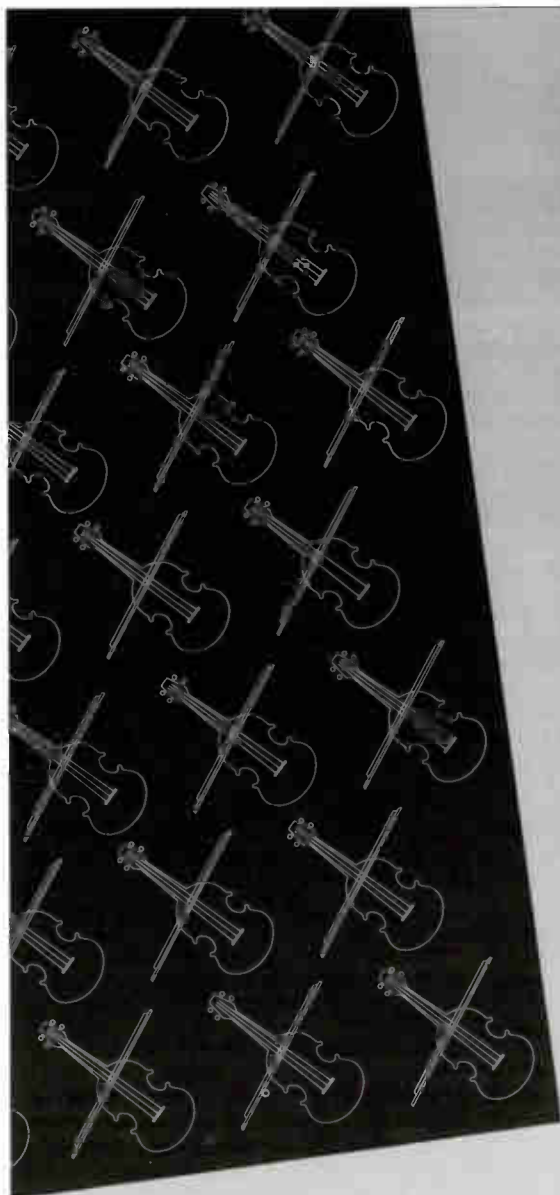
These two CBS-issued soundtracks are studies in contrast. Harry Connick, Jr., the obviously talented but young pianist/vocalist from New Orleans, brings us, with a great deal of musical assistance from various corners, the *When Harry Met Sally*. . . film companion. Meanwhile, formidable veteran producer Orrin Keepnews, at the request of CBS exec Dr. George Butler, has assembled what amounts to a musical and biographical sketch of pianist Thelonious Monk, who in hindsight can only be called a genius, albeit one in anguish.

Connick's delivery of several well-known standards and favorites that pre-date his birth—for instance, music from the Gershwins ("Love Is Here To Stay," "But Not For Me," "It Had To Be You")—while conjuring nostalgic and sentimental feelings, border on raw and bombastic interpretation much of the time. Furthermore, orchestrator Marc Shaiman's mostly heavy-handed work on the several big-band arrangements ("Don't Get Around Much Anymore," "I Could Write a Book," others) often detracts from Connick's potential, or clouds, rather than enhances, his playing.

Monk, on the other hand, has always been a man of understatement, which should not be confused with simplicity. While sound quality on *Straight, No Chaser* varies, execution does not. I think I'd rather hear a hissy version of Monk's solo version of "Pannonica," recorded in someone's home in 1956, than virtually anything Connick lays out.

Not to be too harsh on the 22-year-old Connick. While I have no problem labeling his vocal phrasing as sometimes forced—a lesser Sinatra (which is how he's being pushed by the corporate powers that be)—he does display a certain flare. "Winter Wonderland," a solo effort, is mindful of Fats Domino and Professor Longhair; "Stompin' At the Savoy," where Connick is joined by bassist Benjamin Johan Wolfe and drummer Jeff Watts (who, along with guitarist Jay Berliner, represent the album's best musicians), smacks of legitimate Ellingtonia; and, ironically, a second solo exposition, his rendition of "Autumn in New York," the date's best piano, owns a Monkish feeling. Connick is good, but not yet mature; let's see where he goes in the next decade.

As for Monk, not only is Charlette Zwerin's documentary film compelling and captivating, so also is this collection of music, which offers narration and commentary, solo work ("Lulu's Back In Town," "Don't Blame Me," "Sweetheart of All My Dreams"), quartet pieces from 1957 with John Coltrane ("Trinkle, Tinkle") and a decade later with Charlie Rouse (title track, "Ugly/Beauty," and a live version of "Round Midnight" recorded at the Village Vanguard),



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and some octet ensemble playing that included Rouse and Johnny Griffin on tenors and a baby Phil Woods on alto.

Unlike the Connick release, the Monk collection benefits from CD issuance in two ways: sound quality improves audibly, and Keepnews exploited the configuration, adding a dynamite octet version of yet another of the pianist's classic compositions, "Epistrophy."

—Jon W. Poses

EARL KLUGH: *Solo*

Earl Klugh, guitar

Warner Bros. 9-26108-1 (LP), -2 (CD). David Palmer, recording, mixing; Earl Klugh, prod. AAD. TT: 39:44

I've never been an Earl Klugh fan; his stuff never seems to have guts or tension. Throughout the years, his work has lacked punch, been *too* polite, *so* docile. Such characteristics, coupled with his becoming caught in the Lite-FM/New Age binge, cause disinterest. Admittedly, however, a lot of musical taste and preference has to do not with skills, but rather *context*, and *Solo*, Klugh's self-produced, solo, acoustic, 14-selection (on both CD and LP) recording, is *contextually* correct.

Solo is a series of brief examinations—no tune is longer than 3:50. Klugh explores Harold Arden, Ira and George Gershwin, Jerome Kern, and Johnnies Mercer and Mandel, among others. "I'm Confessin' (That I Love You)" most assuredly is one of the set's highpoints, replete with its appropriately slow-moving ragtime-and-waltz/blues-like feel. Juxtaposed to the playful "If I Only Had A Brain," it becomes apparent the guitarist possesses a dry sense of humor.

There is a romantic feel to this date, what with the inclusion of both "Emily," Mandel's slow ballad, and a relaxed rendition of "Somebody My Prince Will Come," and the optimistically couched "Love Is Here To Stay."

Technically the session cannot be questioned. From a pure artistic standpoint, Klugh has always been dexterous, inventive, and intricate in his phrasing and sense of rhythms. And the album, *à la* Stanley Jordan, contains no overdubs.

If *Solo* has weak spots, they arrive during two *very* poppish selections: the Bacharach/David "Any Old Time Of The Day," sounding at points like a weaker Beatle composition; and Sergio Mendes's "So Many Stars."

All in all, with *Solo*, Klugh delivers a highly enjoyable performance that sincerely examines a variety of moods, uncovering them neatly and unassumingly, all at the same time.

—Jon W. Poses

Rock, Etc.

ERIC CLAPTON: *Journeyman*

Reprise 9 26074-1 (LP), -2 (CD). Dave Wittman, Dave O'Donnell, Steve "Barry" Chase, Joseph Pugh, engs.; Russ Titelman, prod. ADA/ADD. TT: 54:35

In the '60s, Eric Clapton was the king of the British blues invasion. His work with John Mayall's Bluesbreakers still stands as some of his best. He was also responsible for helping America rediscover some of its own blues heroes—BB, Freddy, and Albert King, Buddy Guy, Muddy Waters, etc.

The current blues revival, spearheaded by Robert Cray and Stevie Ray Vaughan, gave hope that the long-rumored Eric Clapton Blues Album would be forthcoming. The bad news is that *Journeyman* is not it. Having just teamed with a new producer, Clapton felt that he owed Reprise one more commercial album before embarking on his pet project. Thus, half of this release is made up of the overblown arena rock and soporific ballads that have made Clapton's work since *Layla* so lackluster: the kind of unexciting efforts that can make the term "journeyman" less than a compliment.

The good news is that *Journeyman* offers a sneak preview of what the blues album could be. "Old Love," a writing and performing collaboration between EC and Robert Cray, is a high point for both. A minor blues in the tradition of Otis Rush, it sounds as modern as next week. A cover of Ray Charles's "Hard Times" captures the feel of the original, but with a recorded sound that is palatable to '90s ears.

Blues purists will probably find the warmth of the exceptional-sounding LP preferable, but the CD does offer enhanced highs and high mids, and a tighter low end. LP or CD, *Journeyman* shows that it is possible to capture the blues feeling with modern technology. It would be ironic indeed if Clapton's delayed all-blues album turned out to be his most commercial.

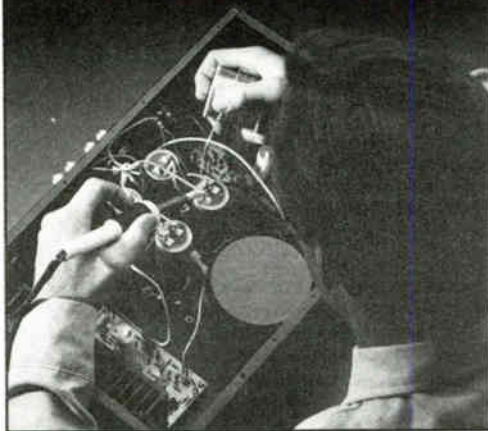
—Michael Ross

RICKIE LEE JONES: *Flying Cowboys*

Geffen 24246-1 (LP), -2 (CD). Many engineers; Walter Becker, prod. DDA/DDD. TT: 55:56

One of the great things about this job is the chance I have of paying public tribute to the musicians—some quite obscure—who have given me so much joy throughout my life. Rickie Lee Jones, though hardly obscure, has been one of these; though the world may have waited almost five billion years for her first album, somehow the five years since her last album, 1984's *The Magazine*, have seemed longer.

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Well, the wait wasn't worth it, and here I am in the awkward position of reviewing the first DOA album of Jones's career. *Flying Cowboys*, one nightmare blues and ten tired tunes of reserve and retreat, is too little spread too thin. Jones sounds weary, worn out, as if recovering from a nervous breakdown, and the terminally tasteful production chops of Steely Dan's Walter Becker don't help. Had this been her first album, few would have given it a second listen. As it was, I sat there fidgeting in my chair, muttering to myself, song after song, "maybe on the *next* one she'll pick it up." And she did, but not fully till the last song, the poorly punctuated "Atlas' Marker."

What we've got here are spare but limp arrangements of some not very good songs, sometimes-interesting fragments that never gel. The melodies just stumble along after the chord changes, the rhythms are all flaccid medium tempos, the choruses nonexistent. Jones herself sounds frustrated, confused, and exhausted, as if trying desperately to wake up after having been slipped a mickey.⁶ "Ghost Train" is a twisted dream from beyond the grave, characters like "Jupiter Ray" boarding the bus (*sic*) on its way to hell or someplace worse, but it's frightening because Jones actually sounds as if she *is* one of the lost and dying black people she sings about; no mere empathy here, and little room for the listener either. Her brand of Method Hip has always edged on self-parody and loss of center; she's over the edge in "Ghost Train." A remarkable experience nonetheless. "Atlas' Marker" *does* have a chorus worthy of the name, and it's a good one: an arcing melody, streamlined vocals bent back on themselves like the rear deck of a '69 Chrysler Imperial. The chorus and arrangement of "Rodeo Girl" would have fit right in—I think—on Van Morrison's *St. Dominic's Preview*. But these are just notes—I didn't *feel* anything.

Jones's lyrics are as richly vague as usual, the reigning metaphor of *Flying Cowboys* being the ghetto—one song is called "Ghetto of my Mind" (ouch), and the word pops up in several others. This is no inner-city tenement: she does mean her own psyche, and it sounds like a lurching, scary place. I sympathize, but where are those gorgeous forced harmonies that filled her three (four if you count the *Girl At Her Volcano* EP) previous albums? Where are the neo-jitterbugging likes of "Juke Box Fury" and

⁶ This may sound sexist—God help me, that's *not* my intention—but when I first heard this album, my first thought was, "Ifuh. Sounds like she's had a baby!" There was that shift in priorities, that sign in the voice of having given a great deal that has not yet been returned, of a gap in "the egg of luminous fibers" that Castaneda's Don Juan Matus describes mothers as having. A week ago, I finally read that she *has* had a child since *The Magazine*. Go figure.

"Runaround," heartbreak anthems like "We Belong Together," melodramas like "Coolsville" and "Last Chance Texaco," vulnerable waif-wisps like "After Hours" and "Deep Space," not to mention the sheer joy of "Chuck E.'s In Love" and "Danny's All-Star Joint"? Where are the *tunes*?

Even her singing is tired. What I've always loved about Rickie Lee is her Laura Nyro-like unpredictability in vocal style and song structure. Her voice can swoop from a whisper to a scream in a second, from child to sensual woman in a single syllable. Not much of that here. And you *know* something's wrong when you can understand every word of a Rickie Lee Jones album without resorting to the lyric sheet.

The sound, identical as makes no difference on LP and CD, is remote, laid-back to the point of enervation; I kept turning up the volume, but nothing satisfied. Becker's production has all the calculation of a Steely Dan record, with none of their meticulous inspiration.

Flying Cowboys has been flying off the Santa Fe shelves, but I can't think why; nor do I understand the glowing press it's gotten everywhere else. Thinking I'd missed something important, I listened again. And again. Nope. What a disappointment. Fans beware. *Every-one* beware. —Richard Lehnert

CLAIR MARLO: *Let It Go*

Sheffield Lab TLP-29 (LP), CD-29 (CD). Lincoln Mayorga, Doug Sax, prods.; Bill Schnee, eng. A?A/A?D. TT: 42:59

Sheffield Lab has released many recordings still treasured by music lovers and audiophiles. This latest release will most certainly gain them new advocates. The usual Sheffield Lab trademarks are here: flat, thick vinyl; absolutely silent surfaces; subterranean bass which can be felt as well as heard; pristine, extended highs which shimmer in the air around them; seamless spectral balance; believable soundstaging; and presentation of low-level detail without any masking by electronic or other noise.

It's obvious Doug Sax loves the sound of tube electronics. When I substituted a pair of vintage Dyna Mk. III's for my solid-state amp, the music bloomed and took on a glow much like my Dynas' KT88s. The soundstage improved, with a keener sense of three-dimensionality both in LP and CD. In fact, when comparing the two formats, I was awakened to the harsh fact that my cartridge was aging. I heard spitty sibilants on the LP which no amount of adjustment would correct. I heard no such aberration on the CD. The CD also enabled me to hear an interesting phenomenon which escaped me on LP. On the tune "Till They Take



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My Heart Away," at approximately 2:10 into the song, Clair sings two lines with minimal accompaniment. On the CD, at the end of the first phrase and the beginning of the second, her voice echoes. This effect was totally absent on LP. I can't explain why, but I suspect my cartridge is to blame for this anomaly.

The notes say the session was recorded live to two-track. Excellent! But why does engineer Bill Schnee need 56 inputs? Is he afraid someone won't be heard? Does Jeff Porcaro's drumming deserve the same attention as Marlo's vocals? Do Randy Kerber's keyboards? I think not. Whatever happened to instrumental *balance* in musical performances? Is it necessary for each instrument to be spotlighted? The resulting sameness to the songs, instrumentation, and volume made me restless, crave a little more variety. If a performance is to transcend the level of background music, it must blend the diverse elements of its arrangement into a musical experience which commands attention. I own hundreds of records which involve me, force me to focus on the music and listen. They utilize the dynamic range and colors inherent in music to communicate an idea or feeling.

Compared with this paradigm, Clair Marlo's debut release is one-dimensional. Why this should be is a mystery to me: She has good command of an exquisite voice. But her compositional expertise and arranging abilities leave me unmoved. Ms. Marlo seems to have succumbed to the homogeneity, monotony, and over-production endemic to popular music. Nevertheless, this release contains many bright moments. I'd buy the album just for her version of Richard Thompson's "It's Just The Motion." Steve Katz's production is delightful, and the personal angst described in the lyrics is conveyed in an arrangement of taste and subtlety.

Six of the tunes deal with love, mostly unrequited. The songs are pleasant, Clair's style vacillating among those of Amanda McBroom, Patti Cathcart, Joni Mitchell, and Jennifer Warnes—I'd like to hear more Clair Marlo. The two instrumentals will make good demos but leave me cold, musically. "A Major Technicality" reminds me of early Mannheim Steamroller *Fresh Aire* records. "Where You Are" is similar (sounds like a dub track), with the obligatory "wailing" soprano sax thrown in. Abraham Laboriel's bass solo on this cut, however, is exceptional. The title tune advocates non-conformity and unconventionality in rather simplistic terms. *Not* simplistic, though, is the excellent sound. Especially pleasing is the way in which the background vocalists appear to be situated behind Clair to the left and right.

The fact that they were recorded while performing in the reception lobby of Bill Schnee's studio convinced me of his Grammy-award-winning abilities. Nice job!

We've come to expect great sound from Sheffield Lab recordings. This release, exceptional in many ways, does not disappoint. Listen, for instance, to how the softly struck triangle is captured on several cuts. It has just the right amount of ring and seems suspended on its own cushion of air. The vocals sound fine, particularly Clair's duets with Craig Fuller on "It's Just The Motion" and "Do You Love Me?" I've heard recordings with more sense of space, more depth, and sharper instrumental focus. Given the forces at work on this production, though, all involved have done an excellent job. This recording makes many popular releases sound as if recorded in a closet with K-Mart rack-system electronics. Next time, Doug and Lincoln, cut back on the production extremes and let Clair be heard in the context of a smaller ensemble. I suspect the results would be stunning.

Incidentally, this release will serve to introduce Sheffield Lab's cassette tapes. They will be available in two configurations: a standard cassette and a super-audiophile version duped in real-time, one-to-one on TDK MA tape. Those well-heeled listeners with Nakamichi Dragons will soon have something special to play! (My thanks to The Candyman in Santa Fe for the generous loan of the new Madrigal Procecd CD player.)

—Guy Lemcoe

JANE SIBERRY: *bound by the beauty*

Reprise 25942-1 (LP), -2 (CD). Dave Ferri, eng.; Jane Siberry, John Switzer, prods. AAA/AAD. TT: 42:52

Anyone wanting an over-long and rather incoherent introduction *cum* review to Jane Siberry should check out my Vol. II No. 8 piece on her 1988 masterpiece *The Walking*. Enjoyable as it is, *bound by the beauty* is a much lighter piece of work, an album of whimsy; I half expected to find pressed violets between the CD booklet's pages. There are far more up-tempo rock tunes here than on *The Walking*—according to a recent interview, during the sessions Siberry threw out everything that sounded too "Siberry"—though even these are kept afloat by her remarkably light touch. The overall sound of the album, too, is lighter: more highs (*too* many), more arrangements redolent of handfuls of tiny twigs thrown against crystal lattices. And "The Valley," like her last album's title track, could be *Pet Sounds* 20 years on, Siberry's ultimate Wasp voice floating and drifting away like birdcalls on a windy day. (This homemade album was recorded in a shack in

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the middle of an apple orchard; LP and CD are as close as makes no difference.)

I mentioned Jack Bruce in last year's review, and that influence pedals on here: "Half Angel Half Eagle" is as brightly ominous as Cream's "Those Were the Days" and "Deserted Cities of the Heart," warning to "have a good time but don't relax," irony ephemeral if there at all.

"Something About Trains," partly based on "My Creole Belle," is sort of a boogie-woogie heavy metal country tune with a piano solo at right angles to the harmonic thrust. Joni Mitchell's influence is heard on "Hockey," a collection of elegiac, haiku-like childhood impressions. And what can one say about "Everything Reminds Me of My Dog," which is a list of just about everything. "I stand there and read the headlines, he reads the wind."

"La Jalouse" is an out-and-out art song, no less, with a chamber arrangement, about an empty, desolate, nowhere affair, and "Miss Punta Blanca" is an airy nothing, Siberry singing like a whispering Rickie Lee Jones.

But what's most impressive about Jane Siberry—always—are her amazing lyrics, always skirting preciosity and always grounded with a laugh. From "The Life is the Red Wagon": "the life is the red wagon rolling along / the life is the red wagon simple and strong / the life is the red . . . is the red . . . oh, it's no big deal."

The album ends with a samba, dreamlike after a furious intro, our heroine vaguely aware, like a debutante tipsy on her first Cuvée Dom Perignon, that she's falling in love, being seduced, drunk, or all three—"such is the mystery of love."

If *The Walking* is a memoir, bound by the beauty is a trunk of girlish memories, a Hope Chest in reverse, trapping the elusive moments of a life, those seen only in peripheral vision, in cages of song so flimsy they threaten to collapse into glittering shards with the first beat of nostalgic wings—and never do. Recommended, but if you're new to Jane Siberry's waifish incantations, listen first to *The Walking*.
—Richard Lehnert

FRANK ZAPPA: *You Can't Do That On Stage Anymore, Vol. 3*

Rykodisc RCD 10085/6 (2 CDs only). Bob Stone, eng.; Frank Zappa, prod. AAD/ADD/DDD. TT: 2:15:09

Maybe I'm finally growing up. Maybe, at the age of 39, adolescence is finally over. Or maybe I've just listened to—and written about—far too much Frank Zappa music in the last two years.

Whatever. Lord knows, this stuff is hard to play: you'll hear every kind of electronic blues-based rock, and FZ & Co. tear through it masterfully, but I didn't much enjoy this third installment in Zappa's 12-CD *You Can't Do That On*

Stage Anymore series. The great majority of this 2¼ hours of all-live crunch-rock is taken from the 1984 tour, and most of the 25 tunes (five previously unrecorded) are not among Zappa's best. High points: a far more convincing version of "Drowning Witch" than the 1982 studio version; Ike Willis's and Ray White's virtuoso singing on the mid-'50s doowop "Carol, You Fool" (previously unreleased); Terry Bozzio's "Hands With a Hammer," one of the more intelligent rock drum solos you'll ever hear; the original 1975, pastoral version of "Zoot Allures" with a superior FZ guitar solo from 1982 spliced in; "Chana In De Bushwop," a reworking of "Workin' In A Coal Mine" that quickly changes to a scatty N'Orleans-style second-line boogie; the cruelly on-target "Nig Biz," about musical blaxploitation; and, best of all, a 25-minute extravaganza on "King Kong," edited back and forth between 1971 and 1982 versions. This last is almost worth the price of admission: free-wheeling, entirely instrumental improvisation, with Ian Underwood's wah-wah electric sax solo, Tommy Mars's breakneck jazz piano choruses, and Aynsley Dunbar's always interesting drumming. (Seconds after the final chords of the '71 performance, a jealous fan leaped onto the stage and pushed Zappa off; FZ, who was in a wheelchair for the next year, says "the tape ran out before my crash-landing, otherwise I would have included it here.") Other tunes are from the riot at Palermo, Sicily—you can hear tear-gas canisters going off.)

But much of the rest of the music consists of unnecessary rehashes of tunes that were pretty offensive and musically impoverished when they first appeared: "I'm a Beautiful Guy," "Beauty Knows No Pain," "Charlie's Enormous Mouth," "Bobby Brown Goes Down" (is it gay-bashing or well-meant ironic agit-prop? The former masquerading as the latter, I fear), "Keep It Greasey" (*sic*), "In France," and inferior versions of "Advance Romance" and "Sharleena," the last including 15-year-old Dweezil Zappa's not very impressive mondo guitaro debut with Dad's band. Of the previously unreleased tunes, all but "Carol" and "Chana" would probably never have been missed. ("Ride My Face to Chicago"? Enough already.) The mostly DDD sound is dry and metallic, but Zappa has consistently shown that this is exactly what he wants. Sounds chalkily astringent to me.

If you're not, like me, a compulsive completist, don't let this be your introduction to the *YCOTOSA* series: Vols. 1 and 2 are far superior. And Zappa: please be a little more discriminating in what you release in Vols. 4, 5, and 6.

—Richard Lehnert

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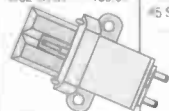
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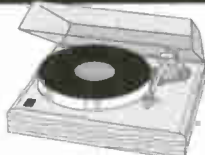
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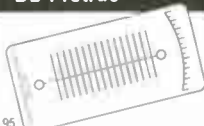
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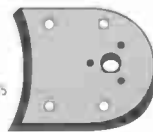
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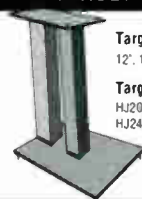
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Editor:

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Alexis A. Arnold

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Editor:

DO's ten-year anniversary of reviewing coincides with Music Reference's tenth anniversary and the ninth year of RM-5 production. We are proud to offer a preamp that has seen nine years of successful sales, where most other nine-year-old designs are now "dinosaurs" extinct from production, and of little value. We have continued producing the RM-5 Mk.II because, in its class, when looking for a simple, straightforward, reliable unit, there is nothing left to say. The RM-5 Mk.II, and all MR products, are finished designs when they are released; not a "work-in-progress" to be followed by endless mods. Any vintage RM-5 can be brought into Mk.II status with the simple

addition of the jack reinforcing bracket and a few capacitors, the holes for which are present on all units. These capacitors were in the earliest units, later removed, and now reinstated. They bypass the cathode resistors and raise gain 6dB. Incidentally, all units have the identical PC board (revision E, the fifth revision); all other revisions were kept in-house, being part of the design-engineering process.

DO noted the sonic changes due to line-stage gain/feedback. His preferred setting of 18dB is ours also, and we ship all units set for this gain. In this circuit, the amount of feedback is precisely the full gain of a 6DJ8 (our minimum is 28dB) minus the chosen gain (eg, 18dB), resulting in 10dB of feedback, approximately 3x.¹ This means that distortion and output impedance also go down 3x in this setting. Obviously, lower distortion is better, except when achieved by large amounts or poor application of feedback. More importantly, lower output impedance can drive cable capacitance better. The no-feedback setting is included for those who want an *absolutely* straight-through path. It should only be used with the lowest-capacitance (<30pF/ft.) cables, and those should be as short as possible (<3'). Further, the amplifier must have low input capacitance. I know these numbers are hard to obtain from manufacturers, but I implore you to persist and obtain these values. Long, high-capacitance cables cause incredible high-frequency rolloff. Our preamp, and others like it, using a non-feedback 6DJ8 circuit, have approximately 3k ohm output impedance. A 20' length of 100pF/ft. cable plus 500pF amplifier input capacitance is a total of 2500pF, and when driven by 3000 ohms, the response is 3dB down at 21kHz (and we *don't* want that!). However, the 18dB setting has 3x lower output impedance, which moves the 3dB down point out 3x to 63kHz, and that is *much* better. The output impedance of the RM-5 could have been lowered by using a cathode follower, which would raise the cost and produce a sound that some find unpleasant. I opted for the non-follower/light-feedback approach,

¹ Here I must warn the wary consumer that we have seen and rejected large numbers of 6DJ8s of seemingly good quality, but with low (25dB or lower) gain. This is why we use our own 100% computer-tested RAM Tubes.

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intending most users to choose 18dB or lower gain.

Here I must interject my volume-control thesis: "Higher is Better." Many years ago, the "low-end" industry fooled the public by making their equipment play very loud on setting #1 on a 1-10 scale, and found that the trick worked because the unknowledgeable public thought, "Well, if it plays this loud on setting 1, it will really scream on 10." And indeed it does—with 100% distortion. From a design point of view, one more transistor or the choice of resistor values around an IC can set "loud" anywhere on the gain pot. One must realize that the circuit in front of the volume control (*i.e.*, the phono preamp) must then put out lots of signal (at the cost of higher distortion and loss of overload margin) to allow for a drastic loss through a volume control which plays loud at setting 1. Further, the consumer will be forever aggravated by the difficulty of low volume setability and poor tracking (channel balance) of the pot at such settings. The best range of the pot is "after noon."

So I ask, "Why create a lot of signal, only to throw it away in a turned-down volume control?" In its finest form, a volume control should be *full up* for loudest listening, then work down from the top. Hence, many gain settings in the RM-5, so that the end user can achieve the optimal performance with *any* power-amp/speaker combination. The high-level sources go directly to the volume control, so we are only "throwing away" their excess signal level, which hopefully was obtained in their design with little distortion. For convenience in matching high-level sources with phono level, in-line attenuators are available from Music Reference.

Before I leave the technical arena, I wish to comment on RH's measurements. He found the RIAA equalization to be very accurate. I would like to add that not only is the RIAA EQ accurate by design, but it is absolutely stable with the tube gain changes due to aging, or tube-to-tube variation. Preamps using active RIAA EQ suffer from frequency-response deviations of several dB due to the interaction of the active EQ circuit with tube gain (see my "Tube Sound" article, published in *Stereophile* Vol.10 No.8 (November 1987). The other characteristic of a passive EQ circuit with no-feedback gain stages is that the overload is soft, meaning THD does not instantaneously jump

at overload, as typical active-feedback designs do. This makes the overload point a bit hard to find. I measure it at 600mV, a very high figure. As RH noticed, THD is directly proportional to level in this design so that at the nominal 5mV cartridge output, the THD would be $5/30 \times 1\% = 0.17\%$. When compared to the cartridge's 1% THD, this is not significant. The true headroom is $20x (\log 600mV/5mV) = 42dB$, so don't worry about running out of headroom. I must disagree over the one point of phono cartridge selection. I find that, when mated with a high-gain (400mV sensitivity RM-9) power amp, my 0.5mV cartridge has both sufficient gain and low noise to provide ample volume. Here I use low-capacitance 3' cables, and full gain. For those whose power amp is too insensitive, we make the RM-4 headamp, which can provide up to 30dB additional gain, along with a 3dB improvement in signal/noise ratio. I did not want to complicate the RM-5 by including the extra gain for these rare occurrences.

A feature not mentioned is the separate selector for the tape output jacks, which allows them to be switched off when not in use, thus preventing loading distortion. This also allows recording something while listening to something else. Further, this system provides for simple tape-to-tape dubbing, and has a safety mute to prevent the destructive oscillation one can experience when a tape recorder tries to record itself. I believe the RM-5 was the first preamp on the market with this now-popular recording system, and the only one with a safety mute. Furthermore, the tape output jacks are muted during warmup to prevent transients from damaging sensitive input transistors in the tape recorder.

As with all Music Reference products, the RM-5 has proven high reliability over its life. Less than 2% have shown up for any repairs. We recently had an eight-year-old unit come in for installation of a jack-reinforcing bracket which we have added to current production to withstand the heavy burden of modern "music firehoses." This unit had its original tubes, which were still performing to specifications.

In closing, I am happy to see that the summary of the review reads like my own design criterion set out over ten years ago.

Roger A. Modjeski

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Clearaudio Veritas & Gamma cartridges

Editor:

Thank you for the time and effort Mr. Thomas J. Norton took in reviewing his *system* using our Clearaudio bottom-line Gamma and Veritas-S moving-coil cartridges, in combination with the SME V arm mounted on a SOTA Cosmos turntable (and VPI TNT), Klyne SK-5a preamp (set to an 80 ohm load impedance), Mark Levinson No.23 (why not No.46?) amplifier, B&W 801 Matrix Series 2 loudspeakers, and AudioQuest Lapis interconnects. You are right: we both are in the subjective business. . .

I am very sorry that you could not try the Gamma and Veritas-S with the Nestorovic Labs moving-coil Cartridge Network or our Clearaudio cartridge interface. This makes a big sound improvement. (I sent a Fax to Mile Nestorovic to make one of his MC Cartridge Networks immediately available to you.) I agree with your description of the overall sonic results using your above-described system. However, there could also be some other significant improvements. I personally, as an audiophile, recommend you try some other interconnects like MIT, Mogami, OCOS, Clearaudio Silver Line, etc., also some tube/hybrid amplifiers and other loudspeakers.

I agree that frequency-response errors within the range of human hearing are (known to be) audible. The question in your test is: Why is the high frequency rising? We think it is your test record. Thank you for the precise description of the lack of quality of your STR-100 record (to obtain better results, I strongly recommend you should use the JVC TRS-1007 test record). During the past ten years Clearaudio has used over 400 JVC TRS-1007 test records. Before using it for testing, we test the individual quality of these records in the following way: for consistency in comparison, the brand-new JVC TRS-1007 is tested using the identical Absolute Reference Clearaudio MC-cartridge (from our safe); we store each individual frequency-response curve for later comparison. There are TRS Mk.I and Mk.II. The Mk.II test records are perfectly flat from 20Hz to 10kHz (± 0.5 dB). But we have found that there are significant differences in channel separation from record to record (± 7 dB). There is a rise in output level above 10kHz inherent in the record (+9dB/-0dB), this also deviating from record to record. We have observed over time

that this rise at 20kHz is partly caused by the resonance of the cutting device/system during the cutting process, partly caused by the cartridge/record interface. Hence, all good high-end cartridges *must* show these same characteristics. All cartridges with additional inside damping/built-in stabilizer are not able to show all these problems, and they damage the phase response at high frequencies.

Sorry, we have a different opinion. You mentioned three problems; there is only one. I wonder why you could not use our Clearaudio gold plug on the cartridge on both sides (even Mr. Alastair Robertson-Aikman at SME uses them with our Accurate). The stylus guard is a good design, our audiophiles like it, there is no need for a redesign. I agree with your interesting comments on VTA. To set up the optimum VTA for Clearaudio cartridges, we have added a white line at the side of the black plastic part. The final height of the arm must be set up in the following way: This white line must be exactly 90° to the LP surface. Then the VTA is optimal (simple, isn't it?). By the way, there are some international rules for high-end manufacturers and reviewers: Always stay consistent, and never try to describe something you personally have not experienced (re. INSIDER).

Semantics: In our brochure we use the following words: Resonance Free Technology (RFT). The total weight of the Veritas-S was reduced to 11.6 grams.

Peter Suchy
President, Clearaudio International

Harman/Kardon HD7500 CD player

Editor:

I thank you for this opportunity to respond to your review of the Harman/Kardon HD7500 "Bit Stream" Compact Disc Player. While I am certainly aware that different reviewers will listen to various electronics, hear different things, and subsequently respond accordingly, I am nonetheless surprised, as well as disappointed, in RH's reaction to the HD7500.

In all fairness to both your readers and the player discussed, I am pleased to report that yours is the first negative reaction we've experienced with the HD7500. The Harman/Kardon "Bit Stream" models—the HD7500 and HD7600—have won accolades and garnered exceptional critical acclaim from audi-

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ophiles globally, and I am grateful for the space you are allowing me to justly present those credentials to your readers.

First, from this country, Daniel Kumin of *CD Review* reported in his review (February 1990) of the HD7600, the HD7500's sister model: "The Harman/Kardon's sound was irrefragable, with the silent background, dramatic transient abilities, and brilliant fine details that we expect from a really first-class CD player today. If the HD7600 displayed one signal sonic characteristic, it might have been transparency, an ability to hear 'through' excellently recorded discs to the finest musical details. In sum, a rather delicious-sounding design." He additionally expressed his opinion that "it [the employment of entirely discrete components in the unit's analog section] bespeaks of H/K's awareness of current audiophile notions of excellent analog circuit design."

In Germany, *Hi-Fi Vision's* September 1989 edition reported in its review of the HD7500: "Without question the HD7500 is playing good music, as it is on level with any modern first-rate player: neutral tonal balance and very lively. The sound is consistent through the audible spectrum." "The HD7500 has firmly placed itself in the distinguished top class."

Japan's *Audio Accessory*, in their 1989 Winter issue, comments in their review of the HD7600: "Plain, simple, natural expression with feeling of transparency and accurate vocal figure. So to speak, 'almighty player.'"

In comparing the HD7600 with the Kenwood DP-X9010/Arcam Black Box player/converter, England's *Hi-Fi Answers* (December 1989) reviewer Keith Howard's opinion was that "the H/K sounded the cleaner, the more precise in its dissection and control of the musical strands."

In any event, while we at Harman/Kardon respect both your publication and your personal opinion, we hope it will not dissuade your readers from auditioning the merits of our "Bit Stream" compact disc players for themselves, in order that they, too, may draw their own personal conclusions. It is, additionally, our hope that future generations of these models will allow you to form another, more favorable, opinion.

Again, I would like to express my thanks for this opportunity to reply to your opinion.

Robert Goodman
President, Harman/Kardon

Tice Titan & Power Block

Editor:

We would like to thank Robert Harley and *Stereophile* for a most accurate and thorough evaluation of our products and some of the technical aspects related to power-line conditioning.

We would like to clarify a common misconception related to AC power. The idea that some areas of the country have good power and some have bad power is not altogether correct. A more accurate way of stating this idea is, all areas of the country have poor-quality power and in some areas it's worse! Yes, heavy industry does contribute to power-line contamination. However, the main cause of power-line contamination is the delivery system used by your local power company to get the power to your home. When power companies design a power-delivery system, two factors are considered above all else: cost, and reliability in all types of weather and environmental conditions. Power companies use as little copper as possible (due to its high cost); most power lines are made of aluminum, some even use steel. If you have ever listened to a power-line cord made with either aluminum or steel wire, it would be evident why our AC power sounds so bad! That is why Mr. Harley found significant improvements with the Power Block and Titan, even though he lives in a rural part of the country.

To sum up our feelings regarding the review, all we can say is. . . Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You, Thank You!

George and Francine Tice
Tice Audio Products

Aura turntable

Editor:

Our sincere thanks to Dick Olsher and *Stereophile* magazine for the review of the Space & Time Aura turntable.

The designer, Dave Whittaker, has spent a considerable part of his lifetime in the development of this fine product, and I know it gives him great pleasure to see the Aura fully appreciated in the pages of *Stereophile*.

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duction available from either analog or digital sources; we believe it will do so for the foreseeable future. In addition, the Space & Time Aura turntable can afford the user the opportunity to compare two or three tonearms at once, to optimize the suspension easily, and to change and set up various tonearms literally within minutes.

Such a turntable, we believe, is the best and most useful turntable ever. As Dick Olsher was able to determine, the SME V tonearm was superior to the Souther tonearm in terms of bass definition and control. The comparison between these tonearms is valid since it is made on the same "reference" turntable. Other tonearms may yet prove superior to the SME V, and indeed, we have good results with some very affordable tonearms too. . . .

The turntable itself is the most important component in the turntable, tonearm, and cartridge combination because it is the foundation upon which the tonearm and cartridge depend. In our experience, the better the turntable, the better the sound.

A few points which were not mentioned in the review are that:

1) the Space & Time Aura turntable will be expertly set up in the customer's home, upon purchase, either by an authorized Space & Time dealer, or by TARA Labs.

2) Additional arm pillars and tonearm boards are always available at a modest price for all types of tonearms.

3) Additional damping of the spring suspension may be applied with foam pieces currently supplied with the turntable, and the suspension may be tuned easily with more or less springs, placed and moved to optimize the suspension regardless of how many tonearms are set up.

4) The Space & Time Aura turntable carries a limited 5-year warranty to the original purchaser.

As Dick mentioned, a good turntable stand is essential. (The Arcici Lead Balloon stand at *Stereophile* has been improved to one in which the stand may be filled with about 80 lbs. of lead shot.)

A high degree of mass and stability in a stand are important factors in allowing the turntable to perform at its best.

A very solid table or cabinet is a good alternative. Moving to a larger planet with a higher gravity will work very well also but this should

only be done as a last resort.

Matthew Bond
TARA Labs

Dahlquist DQ-12 loudspeaker

Editor:

I want to thank Robert Harley and *Stereophile* for the comprehensive review of the Dahlquist DQ-12 loudspeaker. What makes the DQ-12 such an exciting product is stated in the review: "In some areas it offers performance exceptional for its price: an open, airy soundstage, excellent spatial presentation with a feeling of envelopment, satisfying bass extension, and a relatively uncolored midrange."

The DQ-12 was developed for use in normal, rectangular living and show rooms, without the use of sophisticated sound treatments such as active bass traps and sloped ceilings. I know from my own experience at various consumer electronics and high-fidelity shows throughout the years, that I use bass traps (only passive so far) very sparingly, to attenuate only the major bass modes. Overdoing low-frequency absorption can indeed upset the designed-in balance of the speaker, resulting in a bright sound.

I look forward to John Atkinson's offer of a DQ-12 follow-up review performed in a different environment. The concluding remark states: "Overall, I recommend that the DQ-12 be auditioned, with the potential purchaser deciding if the speaker's considerable strengths overcome its flaws." I can live with that.

Carl J. Marchisotto
President, Dahlquist, Inc.

Irving M. Fried & IMF

Editor:

My name, my trademarks, and a bit of history appear in the recent review of the TDL Studio 1 loudspeaker (Vol.13 No.2, February 1990, p.143). I wish to clarify John Atkinson's statements.

"IMF" is a registered trademark which I affixed to various products starting in the early 1960s, and which were marketed in the US. Some of you may recall the "IMF-LONDON" Mark IV cartridges of the middle '60s. I met John Wright in 1966 through his association with "Audio & Design," which manufactured tonearms and the Jordan titanium loudspeakers. We formed a joint venture along the way, called "IMF-GB." By 1968 we had progressed to "IMF-GOLDRING"—and the first

of the "IMF" Monitors resulting from that association was shown at the New York Hi Fi Show of 1968, with the "IMF-GOLDRING" cartridges being introduced at that time.

When "IMF Electronics," an English limited company, was formed some time later, I became a shareholder. When we divested my interests under a legal settlement in 1976, I granted the English company a license to use my trademark so long as they remained in the business of manufacturing loudspeakers. That license lapsed in 1984, when the English company ceased doing business.

As to the statement, "one John Wright, who designed the classic series of IMF loudspeakers": The "IMF" Monitor of 1968 was a combination of the Radford enclosure designs, which we modified, with the KEF Concerto drive systems. A short time later, the Celestion tweeter and supertweeter of those days were incorporated—and that became the "IMF Monitor III," whose fame continues to this day!

Who "designed" that loudspeaker? I would say—the both of us. Who conceived it and directed the design, and others until 1975? I lay claim to that honor. John was at all times actively involved. Indeed, until we parted, "IMF" was advertised as an "Anglo-American cooperation."

Interestingly, there was an "IMF TLS" (transmission-line loudspeaker) shown by me at the New York Hi Fi Show of 1965, done by Stan Kelly (an authentic genius) and myself. Some pairs were sold commercially, though the purpose of the loudspeaker was to introduce the "IMF-LONDON" Mark IV cartridge to best advantage!

Again, I am delighted that transmission lines are being discussed in the pages of *Stereophile*.

Irving M. Fried
Fried Products Company

Eminent Technology ET-2 tonearm

Editor:

We would like to thank *Stereophile* and Martin Colloms for looking at our tonearm once again [in Vol. 10 No. 3]. I always enjoy Martin's combination of technical excellence and subjective acuity.

Martin suggests the Model II Tonearm requires a stable platform to be user-friendly and to work at its best (primarily due to the arm's high horizontal mass), and we agree. To im-

prove this we have developed a Fluid Damping Trough which makes the tonearm much more stable on suspended turntables. This can be retrofitted to any Model II on any turntable. Based on continued good sales and discussions I have day to day with customers about analog, we also believe it will continue to be enjoyed for years to come.

F. Bruce Thigpen
President, Eminent Technology Inc.

Precision Audio & POOGE

Editor:

This note is in response to a letter to the editor in the Jan. 1990 issue of *Stereophile*. Mr. Corey Greenberg apparently perceives the world through "Soloist Audio" glasses. If Mr. Greenberg finds the Barclay Bordeaux CD player to be an excellent product conceived of original ideas, that is fine. But for him to smear the rest of the upgrade industry is unfair. As JA correctly points out, Philips upgrades have been with us in many different forms. Only a small percentage of these upgrades resemble the "POOGE" approach.

CAL Audio's original flagship machines utilized tubes for current-to-voltage conversion and filtering. No "POOGE" there. Sonographe uses a discrete class-A FET design. Kinergetics' version of Philips technology found in the KCD30 has all discrete components in its filter design. The Precision Audio series uses all discrete circuit design, DC servos, and two-pole filtering, about as "un-POOGE" as one can get. AVA has a hybrid design. Perfectionist Audio and M.S. Brasfield represent independent thought (and good sound, too).

This is not to say that the POOGE upgrade is a bad design (just a silly name). It is not. The POOGE topology and parts replacement represent one legitimate way to improve a stock Magnavox CD player.

It's worth noting that the Panasonic capacitors mentioned in Mr. Greenberg's letter provide excellent performance for the buck despite not being more pricey than street drugs.

As for "top secret" firms, I don't see any here, with the possible exception of PAC (Perfectionist Audio Company), and they've been around for more than a decade. Thanks to *Stereophile* staff for taking the time to review and consider products not made by mega-dollar companies.

Jon Schleisner
President, Precision Audio

Cables . . .

Editor:

The following is a letter signed by a number of cable manufacturers that was sent to Eugene Pitts III, Editor of *Audio* magazine, in response to cable articles published in the August and September 1989 issue of *Audio*.

There were initial indications that *Audio* would be willing to publish a response to the articles, and along those lines the following letter was drafted, the feeling being that a single letter signed by a number of different manufacturers would stand a better chance of getting published than a barrage of letters from every cable manufacturer. The issue now appears to be moot because it is apparent that *Audio* has no intention of publishing *any* response to the articles.

John Atkinson had mentioned that *Stereophile* would be willing to publish our response if *Audio* chose not to. If so, we would welcome our side getting coverage in *Stereophile*.

Joe Harley
AudioQuest

To *Audio* Magazine

Editor:

Not surprisingly, audio cable manufacturers are upset by R. A. Greiner's article about speaker cable in the August 1989 issue of *Audio* magazine. We are responding in a common letter because, despite our diverse points of view, we share a common desire for all audio components to be treated fairly.

We have two major complaints:

1) We disagree with the underlying assumption that technical understanding is more important than what people hear.

2) We believe the article itself is extremely limited in perspective.

Addressing the first issue: Mr. Greiner does not appear to have listened to any cables. The article seems to be based on the assumption that what is not understood must not exist. There is something perverse about an enthusiast publication printing an article which places technical understanding (or lack thereof) above the listening experience. We could understand the motivation for an article that sought to discover the quantifiable explanations for the differences people do hear between different cables. Dozens of magazines all over the world have published such articles. We cannot understand why an article would

be published that tries to tell the vast number of people who do hear differences—from virtually the entire audio manufacturing community, to audio retailers and consumers—that they are deluded.

We don't find any harm in the fact that there are people who do not care about or perceive differences in audio equipment. In the world of automobiles there are many people who believe that as long as it has four wheels and doesn't break down, all cars are the same. This is a harmless attitude which prevents those people from being concerned about something that is not important to them. However it would be very unusual for one of these people to waste time trying to prove there are no meaningful differences. Such an article would not appear in an automobile enthusiast magazine.

At one time or another, most of the components in a music system have been accused of all sounding the same. CD players, turntables, amplifiers, and passive components (capacitors, resistors, circuit boards, wire) have all suffered this accusation. Everyone has the right to such an opinion.

We do not, however, understand why an audio enthusiasts' magazine would emphasize such an opinion, and try to prove to their readers that they can't hear what they are hearing. The methodology used in trying to prove this point is so limited in perspective, it is like counting the number of fingers and toes on thousands of people, trying to prove that men and women are really all the same, but why?

Addressing the second issue: The limitations in perspective in the particular article published.

At the time this article was written (1980!), the audio cable industry was still quite young. It was only a few years after the introduction of the first specialty cables on the US market. In 1976 Polk Audio introduced a Japanese cable under the name Cobra Cable. This early cable and several that followed shortly after, including Monitor Audio cable, Discwasher Smoglifters, and a specific Mogami cable distributed by Jonas Miller Sound, were all based on the premise that a cable with very low characteristic impedance was desirable. Specific cables are not mentioned in the article, but references to "braided cable" and "coaxial dual cylindrical" imply that this article was originally written with these specific cable designs in mind. None

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of these cables are available today. There was some merit to focusing on these cables and the theories behind them in a discussion of cables in 1980, however in 1989 the point of the article is simply 9 years out of date.

There is some agreement among cable designers with part of what Mr. Greiner writes; that while we hear large differences between cables, we agree that these differences are not fundamentally due to the variables Mr. Greiner limits himself to in his discussion.

Among us we have many different ways of interpreting and dealing with the problem of how magnetic fields behave at audio frequencies and all the anomalies they are subject to (many good articles on these subjects have been published in the British press). What we do absolutely have in common with the vast majority of the audio community is a love of music and a love of audio equipment as a means to a worthwhile end. We share the desire to pursue the manufacturing and use of ever-improving audio components.

This is not a case where a few cultists have banded together to pull something over on the reasonable majority. This is a situation where the vast majority hear differences, differences

that affect the performance and value of an entire audio system. American high-end cable manufacturers have become among the world leaders in the cable industry, but it did not start here. Big Japanese companies, the ones whose products often get the US reviews that say "everything sounds more-or-less the same so you should judge by features and price," these same companies are the ones who pioneered the cable industry 15 years ago. Sony, JVC, Denon, Hitachi, Pioneer, Kenwood, Onkyo, and Nakamichi are just a few of the better known companies who have made and sold specialty cables. Today there are many brand name component manufacturers who sell specialty cable and/or are very careful about the cable inside their products. Audio Research, Madrigal, Krell, Apogee, and Threshold are just a few of the world-class US manufacturers who supply their own lines of specialty cables, in large part because they are concerned about the proper presentation of their primary products. Consumers, reviewers, and manufacturers all know what Mr. Greiner doesn't know; audio is a science of listening—listen first, think second.

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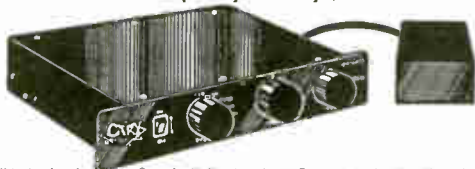
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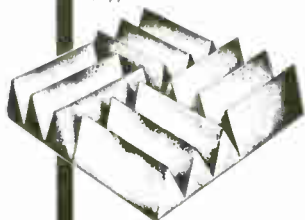
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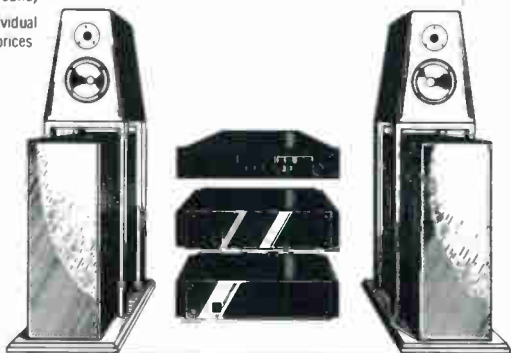
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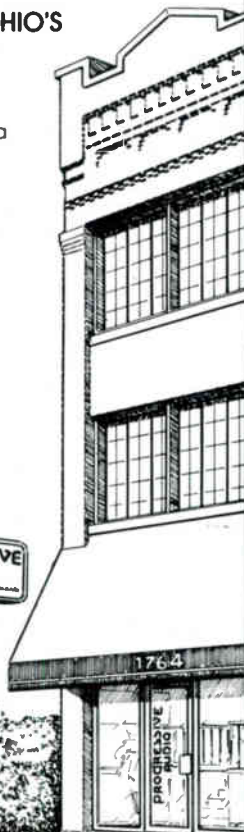
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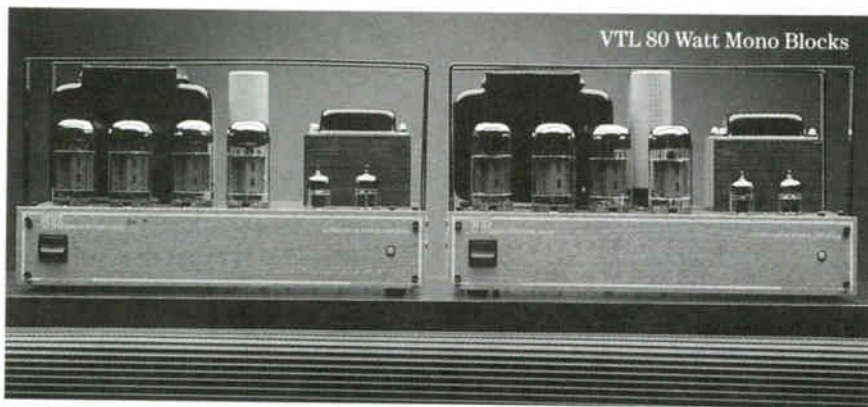
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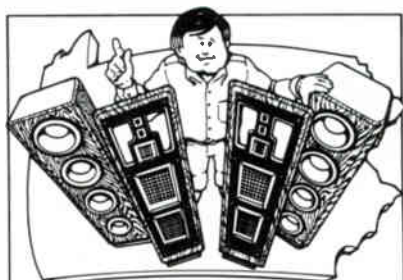
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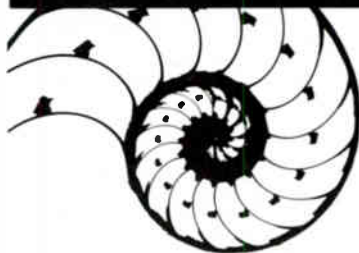
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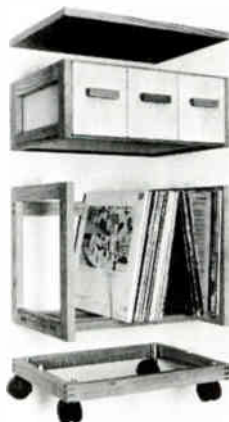
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THE FINAL WORD

The change in *Stereophile's* presentation of cables in "Recommended Components" gives you a hint: the state of cable recommendations is in most muddled waters. Were this just *Stereophile's* problem, I would gladly (well, not so gladly) recommend you seek counsel from other magazines. Unfortunately, cables are an area where manufacturers, retailers, and magazines have conspired to the high-end consumer's disadvantage.

Each manufacturer, of course, will believe most strongly in their own product, and each dealer will recommend only selections from the lines he or she sells. Reviewers, too, take strong sides. Some are exclusively pro-MIT, some rabidly anti-. Some favor the technically linear cables from Straight Wire; some favor the unfailingly musical from AudioQuest. This state of affairs, of course, obtains for every component, with the following exception: with cables, *no one wants to talk about anything but the most expensive*. Actually, reading through "Recommended Components," I find that we managed to grudgingly acknowledge cables for under \$7/foot from Jerrold, Radio Shack, AudioQuest, Mogami, Kimber, and Tara Labs. Still, what of the many other cables offered by these companies?

It seems like a conspiracy to separate consumers from the greatest amount of money. Once it became gospel that cables make a difference, everyone in the marketing end of the equation realized that, because evaluating cables in a foreign environment is more impossible than evaluating even amplifiers, successful marketing would make the only difference in selling cables—convince the people you're what they have to have, and they'll walk out of the store with a bundle of cables, sound unheard, and live happily ever after. Lives there a retailer who will tell a customer that he *shouldn't* buy \$2500 of high-markup merchandise?

Frankly, it's not the manufacturers and retailers who are most at fault. I've even had manufacturers complain to me about the excessive markups from manufacturing cost built into their most expensive products. (If manufacturing parts, labor, and overhead normally equal 35–40% of retail—two-thirds of whole-

sale—with expensive cables the percentage is typically 15–25!) But, they moan, pricing their products at a lower level means they won't be taken as seriously by retailers or consumers; they *have* to charge this much.

No, manufacturers and retailers can be expected to run their businesses to generate close to the maximum in profit, just as other businesses do. The real culprits are you, the consumer, and us, the magazines. Our culpability is primarily passive. Consumers fail to guard their hard-earned dollars with adequate skepticism—don't just believe what your dealers or friends say, insist on hearing the difference for yourself. Compare the best cables from one company to cheaper ones from another company. Maybe one philosophy, successfully elaborated at a lower level, sounds better than another, or just as good for a lot less money. If you don't hear a musically convincing difference in your system, *don't buy*.

The guilt of reviewers, though, is greater. We simply pretend there's nothing but the best to review. Inevitably, the best from any company is the most expensive, and we never bother with the rest. Since 1986, *Stereophile* has reviewed 60 pairs of speakers costing under \$1000, and many such amplifiers, but only a couple of cheap interconnects. In our defense, I can only plead that you listen ever more carefully to our in-house Anarchist (*néé*, after all, The Audio Cheapskate); even if you don't want to go to the trouble of making Mogami Cheapskate cables (see p.135), at least the frequency with which ST changes his mind about cables will serve as a caution.

A number of cable manufacturers have pleaded with me for reviews of their less expensive cables. They know that the market for \$2000–\$5000 cable systems is inherently limited, and good reviews of less expensive cables will expand their business. In fact, people are buying these cables in significant quantities, especially at mid-fi-oriented stores. Yet these cables, primarily from companies who best have their marketing act together (like Monster, MIT, and Esoteric), have gone completely unexamined in the press. It's time we got our cable-reviewing house in order!

—Larry Archibald

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