Discover the music you've been missing in your audio system with the new SLA-70 vacuum tube 70 watt (35 watt per channel) Class A stereo amplifier from Cary.

The most exciting feature of the SLA-70, aside from how gorgeous it looks, is the delightful, sensual beauty of the music it recreates. The first thing that strikes you about your new SLA-70 is its incredible transparency and resolution of detail in the music. The SLA's sensual nature is best shown in the sense of life it reveals in female vocalists. This amp presents music with such presence and directness, you'll be drawn into the music hour after musically satisfying hour. The SLA-70 will draw you in even further when you realize how lucid and utterly uncolored neutrality reveals delicate nuances in the sound stage.

Need more power? The SLM-70 mono blocks offer 70 watts Class A power per channel on two gorgeous nickel chrome plated chassis.

To find out more about the full Cary line of exciting audio products, visit your nearest "High End" audio dealer or call 1-800-421-5456 or FAX 919-460-3828 for additional information.
CONTENTS

AS WE SEE IT.......................................................... 5
John Atkinson discusses his reactions after attending the Academy for the Advancement of High End Audio's first-ever awards dinner, with photographs by Rob Thomas.

LETTERS ............................................................... 17

INDUSTRY UPDATE ................................................ 51
High-end news from the US, UK, and France, including RIAA statistics on the size of the US CD, cassette, and LP markets, a report from Peter W. Mitchell on the future of digital broadcasting in the US, Corey Greenberg on the recent death of electric guitar pioneer Leo Fender, Robert Harley on developments at February's AES Convention in Paris, and a discussion by top recording engineers on the differences between professional digital and analog recorders.

SAM'S SPACE ........................................................ 93
Sam Tellig on vibration-damping discs from Japan and the foibles of audiophiles.

WORKING ON THE FRONT LINE .................................... 103
Mail-order ve the specialist retailer. Sound by Singer's Andrew Singer offers the dealer's point of view.

YOU CAN GO HOME AGAIN ......................................... 108
Vinyl junkie Guy Lemco returns to his home town—St. Louis—to look at records.

CLOCKED! .............................................................. 124
Doug Blackburn ventures into the world of alternative audiophilic reality.

TUBES, LOGIC, AND AUDIOPHILE SOUND ..................... 128
Vacuum-tube guru David Manley talks with Robert Harley.

THE GROUND FLOOR ................................................... 145
Peter W. Mitchell discusses the world of speaker builders.

EQUIPMENT REPORTS .............................................. 151
B&W Matrix 800 loudspeaker (LL)  ................................ 151
Audio Research DAC1 D/A converter (RH)  ..................... 163
Wilson Audio Watt 35 & Puppy loudspeaker system (JA) 171
AudioQuest AQ 7000 MC phono cartridge (RH)  ............... 182
Meridian 602 CD transport (JA)  ............................... 187
Wadia WT-3200 CD transport (RH)  ............................ 190
Adcom GFA-555 monoblock power amplifier (TJN)  .... 194
Sumo Andromeda II power amplifier (TJN)  ................ 194
AudioPrism 8500 FM antenna (BS) ............................ 205
Kenwood L1000-T FM tuner (DAS)  ............................. 207

FOLLOW-UPS .......................................................... 210
Audio Research SPB Mk.II preamplifier (GL)  ................... 210
Wadia Digimaster 2000 digital processor (RH)  .......... 212
Wadia X-32 digital processor (RH)  .......................... 212
Lindsay-Geyer magnetic interconnect (JA) .................. 215
VTI Reference D/A Converter (RH)  ........................... 219

BUILDING A LIBRARY ............................................. 221
Barbara John auditions recorded performances of Brahms's Piano Sonata in f (including that by Robert Silverman on Stereophile's Intermezzo album).

GIVE MY REGARDS TO BROADWAY ................................. 227
Remember me to Off-Broadway and the West End, too. Robert Deutsch reviews recent show-music releases.

RECORD REVIEWS .................................................. 235
New Brahms from Sawallich, Dowland from Emma Kirby, lots of Liszt, Rattle's Mahler 8, Sousa, Dueling Tenors, and more RCA Toscanini; Jazz from Mike Garson, Dave Holland, Shirley Horn, and Kenny Wheeler; and new albums from the Beach Boys, the Byrds, Joni Mitchell, and Yo La Tengo.

MANUFACTURERS' COMMENTS .................................... 279

WHERE TO BUY STEREOPHILE ........................................ 365

COMING ATTRACTIONS .............................................. 4

AUDIO MART .......................................................... 311

BACK ISSUES ........................................................ 149

SUBSCRIPTIONS ...................................................... 150

FOREIGN SUBSCRIPTIONS ......................................... 150

STEREOPHILE TEST CD .......................................... 83

STEREOPHILE POET LPS & CDs .................................. 86

STEREOPHILE INTERMEZZO LPS ................................ 99

STEREOPHILE INTERMEZZO CDs ................................ Insert

ADVERTISER INDEX ................................................. 321

THE FINAL WORD .................................................... 322
Stereophile's Publisher Larry Archibald discusses the magazine's recent acquisition of the Schwann Opus, Spectrum, and Artist issue record catalogs, and the launch of the Chinese edition of Stereophile.

JUNE 1991 VOL. 14 NO. 6

Stereophile, June 1991 3
COMING ATTRACTIONS

Predicting the detailed contents of the next issue of Stereophile is an exercise in frustration, due to the fact that at the time I have to commit these words to type, we have yet to start editorial work on that issue. My apologies, therefore, to those readers who have been patiently waiting for the concluding part of Bill Sommerwerck’s headphone survey. This will definitely appear in our July issue.

July’s “Building a Library” features Richard Strauss’s 2001 theme, Also Sprach Zarathustra; Richard Lehnhert delves into the new boxed set of unreleased Bob Dylan; Barry Willis offers a cautionary tale about the sad demise of a high-end retailer, while equipment reports provisionally scheduled for July include Corey Greenberg rediscovering analog with inexpensive turntables from Linn, Revolver, and Well-Tempered; the magazine’s Santa Fe staff rediscovering the art of the inexpensive two-way loudspeaker, with featured models from AR, B&W, Epos, Icon, JBL, MB Quart, Mordaunt-Short, PSB, and Wharfedale; and Robert Harley rediscovering the art of bass reproduction with an impressive Muse subwoofer.

Errata
In our April issue, a typographical error struck an 800 number a reader had listed for a mail-order source of cut-out LPs: RPM Sales, PO Box 441348, Somerville, MA 02144. RPM can be contacted at (800) 388-1386. Our apologies to Jeff Roberts of RPM Sales and those at the wrong 800 number listed. Also in April, my comment that the Arcici Superstructure was not recommended for use with turntables was based on a conversation I had with Arcici’s Ray Shab at the WCES in January. As you can see from his letter in this month’s “Manufacturers’ Comments,” it appears we were talking at cross purposes.
O ur Delta L-1011 emerged from the cloud split-seconds before its wheels touched the waterlogged ground. “How much lower does the cloud cover have to be before they divert us to another city?” I asked TJN. “About an inch,” came the phlegmatic reply. (Ex-F4 pilot Tom categorizes any landing you can walk away from as “good.”) But at least we had reached Atlanta, after a saga of air-traffic control problems, weather delays, and missed connections. (Does anyone remember taking a flight that wasn’t full, wasn’t late, and wasn’t sweaty and stressful? Wasn’t deregulation supposed to improve service by increasing the choices available to travelers?)

So, why were most of Stereophile’s full-time editorial staff fighting their way through rain, fog, and springtime sleet to the Athens of the South? The magnet drawing them toward the land of peanuts’n’pines was the first-ever Awards Dinner to be held by the Academy for the Advancement of High End Audio.

The what for the what?
The Academy for the Advancement of High End Audio, or AAHEA, is the first attempt in many years by specialist audio manufacturers to act as a group for the benefit of all.

Now I’m always suspicious of organizations that label themselves “Academies.” True, definition #3 in Webster’s Ninth New Collegiate Dictionary reads: “a society of learned persons organized to advance art, science, or literature,” which is a worthy enough philosophy. But definition #4 has it as “a body of established opinion widely accepted as authoritative in a particular field”—and if there is one group of people who react badly to both authority and “established opinion,” it is those creative iconoclasts, loners, and freethinkers who constitute audio’s High End. A cynic once divided the world into “leaders” and “joiners.” Why then should the former start to act like the latter?

Historically, The Absolute Sound’s Harry Pearson was the key figure in the founding of the Academy. In the fall of 1988, Harry celebrated his magazine’s 15th anniversary by inviting just about every face in the world of high-end audio to his Long Island home for Columbus Day cocktails. A formal dinner followed the next day to honor, in HP’s words, “The 15th anniversary of the high end in honor of the designers of the equipment, the authors of the recordings, and the movers and shakers who brought it into being.” At the dinner, a number of “Golden Ear Awards,” or “High End Design Achievement Awards,” were presented to those judged as having produced the seminal products since 1973, the year of TAS’s founding.

Forty members of the high-end audio community—writers, editors, and retailers—voted from a list of nominees chosen by Harry Pearson; the winners were Audio Research’s William Z. Johnson, Quad’s Peter Walker, Doug Sax and Lincoln Mayorga of Sheffield Lab, Koetsu designer Yoshiaki Sugano, MIT’s Bruce Brisson, Ivor Tiefenbrun of Linn Sondek fame, and SME’s Alastair Robertson-Aikman. Lifetime Achievement Awards were also presented to those who, it was felt, had a seminal influence on the high end. The five recipients were Stereophile’s J. Gordon Holt, Joe Grado, Stuart Hegeman, recording engineer Bill Porter, and Mercury’s Wilma Cozart Fine.

Though Harry had intended the dinner and awards to be a one-off event, such was the air of bonhomie generated that he asked Wendell Diller of Magnepan, Joyce Fleming of The Mod Squad and McCormack, Karen Sumner of Transparent Audio Marketing, and Kathy Gornik of Thiel to be members of a Steering Committee to put together some kind of trade organization for the High End. “I named the Committee and told them that Niagara was ahead,” Sallie Reynolds reported him as saying in TAS No. 67. These four put much thought into the concept, and, with the aid of audiophile attorney and Stereophile contributor Steve Watkinson, drew up a set of bylaws, appointed both a Board of Governors and an Executive Director (William Peugh II of Goldmund importer International Audio Technologies), changed their name to the Executive
DISCOVER A LONG-LOST TREASURE IN TRUE FIDELITY

Though audio technology continues to advance, much of what is being produced nowadays is rushed in quantity to the marketplace without sufficient consideration for quality. AIR-TIGHT tube amplifiers, on the other hand, feature only those breakthroughs that serve the necessary purpose of superior sound reproduction.
Committee, and set about bringing AAHEA into the world.
Not without pain.
The Board of Governors initially consisted of Mark Glazier (Madrigal), Marcia Martin (Reference Recordings), John Russell (Bryston Vermont), Gayle Sanders (Martin-Logan), Kevin Voecks (Snell Acoustics)—and Stereophile's Larry Archibald. "What's be doing on the board?" came the cry of some who feel that members of the press do not belong in a trade organization intended to further the business interests of manufacturers if they are to retain their professional disinterest, and from others who feel that writers whose function it is to criticize member's products should necessarily be excluded. Other controversies involved whether the existence of a trade organization is itself unethical, and, indeed, who should belong at all? If companies in general were allowed to join, wouldn't the AAHEA become controlled by the domestic branches of overseas manufacturers, as happened to the old Institute of High Fidelity (IHF) and the Electronic Industries Association (EIA)? And if you

1 The Academy for the Advancement of High End Audio can be conducted at PO Box 220866, Clamilly, VA 22022

A smiling Dan D'Agostino of Krell (right) accepts his award for Electronics from Magnepan's Wendell Diller (left)

Glen Grue of Classé accepts the award for Loudspeakers on behalf of Genesis Technologies’ Arnie Nudell

Martin-Logan's Gayle Sanders (right) was the well-deserved recipient of the Aesthetics award, seen here with The Absolute Sound's cover illustrator Robbi Wesson (left), the designer of the awards

The award for Cables and Accessories generated a tie. The winners were George Cardas (left) and Bruce Brisson, represented here by Transparent Audio Marketing's Karen Sumner.

Stereophile, June 1991
NEW TRADITION...
The Krell KRC Remote Controlled Preamplifier

The Krell KRC preamplifier begins a new era in high-end audio. Remote control convenience is added to the Krell trademarks of sonic impact and build quality.

Sophisticated circuitry allows remote and manual control without signal degradation. Switching is done through relays adjacent to the connectors and associated circuits. This allows optimum circuit layout and avoids the use of FET switching. The Level potentiometer is motor-driven to allow extremely fine volume adjustments.

The KRC uses an elegant hand-held remote which will become the centerpiece of future Krell remote controlled products.

An external chassis houses supplies for the audio circuitry and digital control circuitry. Supply and gain stages are high-bias Class A and direct-coupled. Complimentary phase-combining and phase-splitting provide the greatest amount of balanced operation and the most accurate balanced signals.

Witness the sonic quality and effortless convenience of the KRC—the vanguard of a new tradition in high-end audio.
individuals who contribute services to AAHEA, such as Steve Watkinson, can become Contributing Members.

The general question as to who should be a member was resolved by allowing individuals, not companies, to join, with a proposed member having to be in business for three years to be eligible, needing five nominations from existing members to be considered, then 75% of the votes when his or her proposed membership is put to existing members. In this way, although no one can define High End, the membership itself, by its voting pattern, will result in an ipso facto definition. “We know who we are!” said Naim Audio’s Alexis Arnold in Atlanta.

As of the Atlanta weekend, 145 members had joined AAHEA, 50 of whom had made the Georgia trek and, once there, had conducted a spirited debate about the organization’s membership criteria and aims. The underlying question is: Why is there a need for such an organization?

Elsewhere in this issue, George Tice in effect accuses Stereophile of wanting to reach a wider readership. Yes, we do. We believe that the market for high-end audio components could be much wider than it now is. There are literally millions of music-lovers in the US who take their music seriously. It is these people who buy most of the records sold—$7.5 billion worth in 1990, according to this month’s “Industry Update”—and who, as mentioned in a reader’s letter this month, support the multiplicity of live music-making in the US. The tragedy is that these people spend $4 billion annually on hi-fi components that offer features, remote-control convenience, and aesthetically satisfying styling, but not necessarily a sound quality to match. And do not assume that these components are all cheap. A top-specification rack system from a leading Japanese company can cost considerably more than a true high-end–sounding, under-$1000 system that I recently heard at Phoenix dealer Sounds Like Music Real Hi-Fi Systems—Philips CD player, Rotel amplifier, Energy loudspeakers, and Sound Organisation stands.

It was this widespread ignorance that led Congress last Fall to propose a luxury tax on hi-fi components costing more than $1000. “Hey!” seemed to be the politicians’ attitude, “So what if the Japanese sell fewer expensive hi-fi products than they used to?” And as the one skill any politician has is to reflect the thinking of his or her constituents, what better evidence could you have that the High End has a profile so low as to be non-existent?

When I interviewed loudspeaker designer and erstwhile audio critic David Wilson last year about, among other things, his WATT/ Puppy speaker/woofer combination reviewed in this issue, he remarked that the high-end industry is the true American audio industry of the ’90s. David Wilson is correct. The names of Fisher, Marantz, H.H. Scott, and Sherwood may have become mere badges attached to Far Eastern sell-on-price-alone gear, but there is a healthy, viable alternative virtually unknown to the man in the street. The High End represents a newly mature renaissance of the American consumer electronics industry. Companies like Vandersteen, Thiel, Magrinal, Krell, Audio Research, Counterpoint, and Magnepan may not have existed 10, 15, or 20 years ago, but all of them are healthy businesses with both consistent rates of growth and sales heavily based on export in an age when the US regards itself as a purchaser of other countries’ products.

Healthy such companies may be, but they’re small—Far Eastern companies spend more each year on promoting than the High End grosses. Only if they get together can they generate enough light and heat to be noticed.

That this can actually happen is demonstrated by the events of last Fall. Of all the luxury taxes proposed, all but one went into effect. That exception was the tax on audio components. It was the efforts of Bill Peugh and the fledgling Academy that spearheaded a lobbying effort to educate 435 Congressmen and 100 Senators in the high-end facts of life—that 61% of components costing more than $1000 are manufactured ratchet in the US of A—that led to the tax being dropped from the final package. And the newfound strength in numbers has persuaded the organizers of the Consumer Electronics Show, the EIA, at last to offer suitable facilities to companies wanting to demonstrate sound quality at this month’s SCES; ie, at the Chicago Hilton rather than the execrable booths of the 1990 show.

While necessary, I consider helping its members in their dealings with the monopolistic CES organization and in more successfully lobbying Congress to their benefit to be subsidiary functions for AAHEA. For me, creating a necessarily higher public profile for the High End is the sin-

Stereophile, June 1991
Vanishing Act... Timeless as they are, with elegant sculptural lines and modular proportions as classic as the Froebelian cubes inspiring Frank Lloyd Wright, Nobis speakers virtually disappear when the music begins.

That is when the magic happens. You find yourself enveloped in a splendid, sound-stage experience, where each instrument is heard in the purity of its own clear voice, with the brilliance, subtlety and power every artist intends.

Magic is not easy. For Nobis, it takes the best of two worlds. Both are found in Milwaukee, where the Nobis is designed and built. It is a city of Old-world craftsmanship, where experience, skill and the artisan's pride in work well done prevail. It is also a leading New-world center for superb industrial design. Both traditions demand that great care is taken in every step of design and construction, to ensure the fine instrumental integrity of each Nobis speaker.

Premium hand-matched components make every pair of Nobis speakers an exquisitely compatible set of electronically-engineered twins. Precise engineering determines each exacting specification for a Nobis speaker, from its solid, hand-crafted cabinet and powerful components, to their dynamic union.

These are the realities that evoke magic.
gle most important goal, and one in which AAHEA's Awards play a major role. For the 1991 Awards, AAHEA requested 14 high-end writers to act as nominating judges. These judges—responsible, in the words of AAHEA's Executive Committee, "for nominating products, individuals, or companies who have made exceptional contributions to the international high-end community"—included Harry Pearson, Kent Bransford, Hi-Fi Heretic; Ralph Hodges, Stereo Review; Reinhard Wendemuth, Hi Fi Exclusiv (West Germany); Andrew Marshall, Audio Ideas Guide (Canada); Y.K. Chan, Audiophile (Hong Kong); J. Gordon Holt and myself from this magazine, Ken Kessler, HFN/RR; and Bebo Moroni, Audio Review (Italy).2 (The last two, of course, also regularly contribute to Stereophile.)

Compared with the effective manner in which recipients of the 1988 awards had been nominated and selected, the 1991 procedure definitely needs some fine-tuning before the 1993 event. The original number of categories was too large, the criteria for nomination too vague. Apparently no individual garnered enough votes to be nominated. A second round of nominations, with fewer categories and a suggestion that the judges consider the contributions of individuals during the last five years, gave a suitable result: once the judges had burned up the fax lines with their suggestions, they were tallied by an independent CPA who placed into nomination those names that garnered enough votes. Every Academy member was then sent the list of nominations and a ballot form; their votes were again tallied by the CPA to ensure an honest outcome. (The awards themselves are plaques designed by The Absolute Sound's long-serving cover artist Robbi Wesson.)

So who was nominated and who won? Following an appearance by violinist Arturo Delmoni, who had to compete with unfavorable acoustics and airconditioning noise to turn in superb performances of the Bach D-Minor Partita and Fritz Kreisler's Op 6 Recitativo and Scherzo, MC Ken Kessler (a poacher temporarily acting as gamekeeper) introduced the various governors and committee members of AAHEA to present the awards.

Analog Playback

The nominees were John Bicht (Versa Dynamics), A.J. Conti (Basis), Bill Firebaugh (Well-Tempered), Bob Graham, Pierre Lurné, and Touraj Moghadam (Roksan), with John Bicht getting the award. As John couldn't attend the dinner, his award was accepted by George Cardas.

Digital Playback

Nominated by the judges were Keith Johnson (Spectral), Mike Moffat (Theta Digital), Don Wadia Moses (Wadia), and Bob Stuart (Meridian), with Mike Moffat getting the most votes. In Mike's absence, the award was accepted by Theta's Ed Dietermeyer.

Recordings

The Chesky brothers, Dorian, Reference Recordings' Keith Johnson, Wilson Audio Specialties, and Sheffield Lab were all nominated; Norman and David Chesky received the award for their work with reissues.

Cables and Accessories

The nominees were Bruce Brisson (MIT), George Cardas, Bill Low (AudioQuest), Ray Kimber, David Saltz (Straight Wire), and The Mod Squad's Steve McCormack, the result being a tie between Bruce Brisson and George Cardas.

Electronics

Dan D'Agostino (Krell), Mark Levinson and Tom Colangelo (Cello), William Z. Johnson (Audio Research), David Manley (VTL), Nelson Pass (Threshold), David Reich and Glen Grue (Classé), Michael Sanders (Quicksilver), and Jeff Rowland were all nominated, but it was Dan D'Agostino who ended up with the award.

Speakers

There were a record nine nominees for the loudspeakers award: John Bau (Spica), Charles Hansen (Avalon), Gayle Sanders (Martin-Logan), Jim Winey (Magneplan), Jason Bloom and Leo Spiegel (Apogee), Jim Thiel, Richard Vandersteen, David Wilson, and Arnie Nudell (now Genesis Technologies, but until late 1989 one of the main men at Infinity). And it was Arnie Nudell who got the most votes and the award. As Arnie wasn't able to attend the dinner, Classé's Glen Grue accepted the award on his behalf.

2 I understand that, for various reasons, four other writers asked to take part in the final nomination process—J. Peter Moncrieff of International Audio Review; Ed Long of Audio, Anthony H. Cordesman of PAS and Audio, and Jeff Goggin of the defunct Sounds Like—declined or were unable to do so.

Stereophile, June 1991
TWO'S COMPLEMENT

Proceed digital components. Innovative expressions of technology dedicated to a singular goal: reconstruction of the musical information encoded in the digital medium with convincing fidelity.

The PCD compact disc player integrates original Proceed digital design concepts into a single chassis, offering unprecedented sonic performance and manufacturing quality in its class.

The PDP digital processor improves upon technology developed for the PCD and provides our finest performance level of digital to analog conversion for all existing digital sources.

The PDT digital transport combines our PCD transport mechanism with active circuitry which supplies a superior quality digital output to complement an external processor. An ideal component for those seeking the highest level of sonic performance from compact disc.

PROCEED™ products are manufactured and distributed worldwide by MADRIGAL AUDIO LABORATORIES
PO. Box 781, Middletown, CT 06457   FAX (203) 346-1540
Aesthetic Design

I felt this to be an important category, given that many people associate the words "high-end audio" with black, industrial-looking amplifiers you can cut your hands on and loudspeakers that make any room they’re placed in look worse. As Karen Sumner said, the High End has been responsible for “a few lulus in the aesthetic department.” The nominees were Gayle Sanders for the Martin-Logan speakers, Allen Boothroyd for the Meridian digital loudspeakers and components, the Magradig design team for their Proceed line, Michel Reverchon for the Goldmund loudspeakers, Dan D’Agostino for Krell amplifiers and digital components, Ed Meitner, and Tom Thiel (brother of Jim). The well-deserved award went to Gayle Sanders.

As with the 1988 Awards, it was felt appropriate to elect five people into the Hall of Fame for Lifetime Achievement. Those honored were Peter Walker (again), Paul Klipsch, Henry Kloss, Edgar Villchur, and Saul Marantz. (Someone remarked that the latter was particularly appropriate since 1991 sees the 40th anniversary of the introduction of the Marantz Model 1 preamplifier, a no-compromise product which pretty much defined the high-end path.)

All things considered, I feel those honored with awards by their peers were worthy. The worst thing that can happen with such awards schemes is for the list of winners not to correlate with their genuine status but instead to reflect the influence of various cliques and power groups. This has seemed to have happened with the Grammies, for example, where the selection of a Bette-Midler single as “Record of the Year” has perhaps as much to do with the influence of her record company as it does with the artistic merit of that record, or where Telarc’s and the Atlanta Symphony’s astonishing record of successes is probably not unconnected with the fact that many of that orchestra’s members also have a vote when it comes to selecting the best classical recording.

If these biannual AAHEA awards degenerate into a similar celebration of fraternal backscratching, then their consequent irrelevance, while not necessarily bringing high-end audio into disrepute, will help keep it parochial. But if they continue as they have started, with those honored being truly deserving, then the future is bright.

Which brings me to one thing that puzzled me greatly about the awards weekend in Atlanta. Given that the major long-term goal for the Academy is to more widely promote the idea of creating a better, more musically satisfying audio experience in the home, why was there no one from the general press present? In an interview in T+A's No.67, Larry Archibald had stated that “the awards ceremony will bring regular publicity and encourage attention to the High End.” And as might be expected, The Absolute Sound and Stereophile were well represented editorially (though Harry Pearson unfortunately didn’t attend). But where, for example, was anyone from Stereo Review’s (or even from Audio’s) editorial staff? (Audio only sent two of its advertising sales representatives.) Where were audio writers who are widely read outside of the specialty press, such as New York’s David Denby, Vanity Fair’s Ed Rothstein, Chicago’s Rich Warren, The New York Times’s Hans Fandel (who also writes for Rolling Stone), or even someone from that bastion of audio ignorance, Consumer Reports? MTV, Inc. and Penthouse magazines, USA Today, and The Wall Street Journal have also recently touched on the activities of the high end, the writers finding their own way, unguided, to our community. Was anyone from these high-profile media invited to Atlanta? If not, why not?

I picked up a feeling in Atlanta that the fledgling Academy’s successful 1990 lobbying of Congress on behalf of the American hi-fi industry was regarded as badge enough of the organization’s merit. But the question that every member should ask of the Academy is not “What did you do for me?” but “What have you done for me lately?” If the general public is to stop generally equating the word “Hi Fi” with “not made in the USA,” then it is essential for the Academy to generate greater general editorial mileage with such events as their awards ceremony. The alternative is convergence, not divergence, for its members to remain medium sized fish in a very small pond rather than expanding the size of that pond, to the benefit both of themselves and of American music lovers in general.

* Which was otherwise well-organized by Tina Pruitt and Recording References: Janice Mancuso.
* Given George Tice’s statements in his and his wife’s letter in this month’s “Manufacturers’ Comments,” the irony is that it was CD Stoplight—the infamous green-ink pen—that alerted these putative Pulitzer seekers to the High End’s existence.
What am I looking at?
A hubcap from the Stealth Bomber?
Buckminster Fuller's geodesic belt buckle?
No. What you see here is forty years of tradition pushing the last instant of technology. Introducing XPL: the first speaker to marry the 3-inch titanium mid-range pictured here to the high-frequency titanium driver that's not. The accuracy of the XPL extends to 27 kHz. Meanwhile, the ribbed dome and diamond surround combine to withstand forces over 1,000 G's. Transient details so often blurred in other diaphragms are routinely reproduced by this remarkable tandem.

The crossover network in the XPL costs more than some systems: Low-loss, high-current bypass capacitors. Low distortion inductors. Gold-plated connectors. The XPL's unique stepped baffle system aligns the low, mid and high-range signals. This enables the sound from each driver to arrive at the listener's ear at precisely the same time.

The enclosure? It's designed to produce no sound of its own. Thanks to a rounded back and non-parallel sides, it breaks out of the box—subtracts the internal standing waves associated with it. And the black lacquer finish does a perfect imitation of a concert grand. So, why not Audition XPL at your favorite stereophile store soon? Your turntable will thank you. Your CD collection will thank you. And most of all, your ears will thank you.
The Mark Levinson N°28 Preamplifier is at once a continuation of the Mark Levinson traditions of musicality and enduring quality, and an entirely new implementation of technology that will set the pace for innovation in high-performance audio in the 1990's.

Mark Levinson products have offered the advantages of balanced interconnection for many years. The N°28 introduces a new execution of balanced circuitry called a DIDO (Differential In - Differential Out) that provides fully balanced operation throughout (not converting to single-ended for internal processing) while still rejecting common-mode noise from source inputs or arising within the unit itself. All versions of the N°28 have 2 balanced (XLR) inputs as well as balanced output connections. Even single-ended signals benefit from the DIDO, since it rejects common-mode ground noise as it converts single-ended signals to differential at the input.

Your local Mark Levinson Dealer can provide complete details on these and many other refinements in the design of the N°28.

More important, you can hear for yourself how this preamplifier tips the balance in your favor.
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. Please note, however, that published letters are subject to editing, particularly if they address more than one topic.

One audiophile's opinion
Editor:
Most of the records in January's "Records to Die For" aren't even worth getting a job for, let alone dying for. I can't believe that a single Mystic Moods Orchestra record did not make your writers' recommended recordings list. Come on, these guys are the sonic gods, forget your moldy old Mercurys and RCAs. A Mobile Fidelity LP of cosmic force will blow just about any other record off this planet, at least in this audiophile's opinion. Moodmusic and easy listening are all too often overlooked by the audiophile journals.

Andrew Short
Brooklyn, NY

With good reason.

You can't trust divas
Editor:
You can't trust divas. Take, for example, Anna Moffo. According to Dick Olsher (in his review of the Threshold FET tené, Vol.14 No 3, p.133), in a recording of La Bohème, Moffo, apparently not content with singing just "Mi chiamano Mimi," has taken to singing Rodolfo's "Che gelida manina" as well. Presumably, arias like Colline's "Becchia zimarra" are none too safe from her rapacious clutches, and I wouldn't put it past her to want to overdub "O soave fanciulla," doing both Mimi and Rodolfo.

Robert Deutsch
Thornhill, Ontario, Canada

You can trust a woman's views
Editor:
Being a woman, I suspect I belong to a rather small female minority who regularly read Stereophile. My twin brother and I own and enjoy a wonderful sound system which we have acquired (and improved) over the years, and I believe my views about music and sound can be trusted. Hence, I want to add my opinion to the ongoing debate as to whether amplifiers sound different. I would prefer to think that this argument would be settled by now, but when Larry Archibald in his December '90 "Final Word" column again must assert that there is a difference between amplifiers, then I am forced to realize that high-end enthusiasts still sound like high-end apologists.

When I told my brother I was going to write this letter, he cautioned, "Establish your credentials or they won't take you seriously. Tell them about your phonogenic memory. Mention your perfect pitch." Well, boasting does not become me, but I will describe two situations which, according to my brother, illustrate what he calls my "golden ear" credentials.

Although now in my late 20s, it seems I have not yet destroyed my hearing; the upper frequencies all remain clear and enjoyable. As for my perfect pitch: well, a lot of musicians have perfect pitch, and for some years I had taken mine for granted. I only realized that perhaps mine is unusually accurate when we discovered that I could always tell the difference between when our Well-Tempered Turntable was operating at 120V or at about 116V. We subsequently purchased a voltage stabilizer and now the turntable always operates at 120V.

As for "phonogenic" memory (a term I think my brother invented), yes, it is true that after I have heard a piece of music—even a lengthy orchestral piece—I can thereafter remember it, note for note, all the way through. The most telling example happened two years ago when I listened to Heifetz's recording of Bach's Six Sonatas and Partitas for Unaccompanied Violin. I had never before heard the Heifetz version of these works, although I had heard several other versions. I was duly impressed by the Heifetz rendition; it was the best I had ever heard. But one thing was wrong. In one of the pieces, Heifetz had put in a note which I had never before heard. At the end of the listening, I pointed this out, and as luck would have it, our friend who had brought the records over had the complete score with him. We listened with the score before us, and sure enough, there it was. Heifetz the perfectionist had indulged himself with the added coloratura of a single sixteenth note.

Stereophile, June 1991
One of the most significant developments in CD player technology.
— Hi-Fi News & Record Review

October 1980

Meridian's first CD player, the MCD, single-handedly opened the door to higher CD sound quality. Each and every Meridian CD player that followed—the PRO-MCD, the 207 and then the 206—set progressively higher standards for sound quality, winning the highest praise from audiophiles and critics alike.

This time, Meridian has refined a new type of digital signal processing to create the Dual Differential PDM BITSTREAM D-A Conversion System. Available first in the 208 CD Player, this breakthrough Meridian technology results in CD reproduction with unequalled clarity, resolution and accuracy. Now, the Meridian 208 CD Player/Preamplifier, the new 206B CD Player, the 203 and 606 Outboard D-A Converters, the 603 Control Unit, and the amazing D600 and D6000 Digital Loudspeakers all use the Dual Differential PDM BITSTREAM Conversion System.

Never satisfied with "good enough," Meridian always can be counted on to make the best sounding digital technology sound better.

For the technically-minded, this new Meridian conversion system employs two parallel, 256X oversampling BITSTREAM processors in each channel. Exclusive digital circuitry makes an inverted copy of each channel's signal and then sends this normal/inverted pair of differential digital signals to the converters. After conversion, a differential passive analog filter eliminates extraneous ultrasonic noise, then a differential amplifier combines the two audio signals into one ultra-low-noise, ultra-low-distortion signal.

This system offers a phenomenal linearity of ±0.5dB, from 0 to -120dB, a range as wide as that of human hearing and greater than that of existing live recording systems.

Meridian America Inc., 14120-K Bull Run Field Circle Chantilly, Virginia 22021 (703) 898-3028 Fax (703) 820-7605

603/602 Meridian's best yet—best I have yet reviewed... representing fine value in the audiophile contest. — Hi-Fi News & Record Review

October 1990

... sets a new standard of performance in under-$1k digital converters, offering a level of musicality previously unavailable at anywhere near the price.

For the technically-minded, this new Meridian conversion system employs two parallel, 256X oversampling BITSTREAM processors in each channel. Exclusive digital circuitry makes an inverted copy of each channel's signal and then sends this normal/inverted pair of differential digital signals to the converters. After conversion, a differential passive analog filter eliminates extraneous ultrasonic noise, then a differential amplifier combines the two audio signals into one ultra-low-noise, ultra-low-distortion signal.

This system offers a phenomenal linearity of ±0.5dB, from 0 to -120dB, a range as wide as that of human hearing and greater than that of existing live recording systems.

Meridian America Inc., 14120-K Bull Run Field Circle Chantilly, Virginia 22021 (703) 898-3028 Fax (703) 820-7605
But to the issue: Do supposedly better amplifiers actually sound better? I have heard the debates, and even have that January '87 Stereo Review article claiming that the listeners could not tell any difference. This article would have been more accurate had it only stated that those listeners being tested could not tell any difference. I suggest that there are likely two very good reasons for this. First of all, those listeners were in a carefully engineered listening room with all aural conditions optimal. An amplifier does not have to work very hard in that kind of environment. The average (even the "home-engineered") listening room is not so well controlled. Differences in structure, room dimension, speaker placement, and such are crucial variables with which every listener must contend.

There are other variables too. For example, a friend who is a physicist and audiophile once showed me, mathematically, that a sound system has to work approximately five times as hard in a room with a temperature of 85° and a humidity of 50%. My point is that the carefully engineered listening (or testing) room is not always a suitable environment in which to test how amplifiers perform in the real world, i.e., in our homes' listening rooms, which place more demands on amplifiers than do listening rooms in the ideal world. To draw an analogy: Ten different engines, ranging from a small six-cylinder car engine to a huge 12-cylinder diesel, might work equally well pulling an 18-wheeler along a level highway. But what will happen when that 40-ton load comes to the next hill? This is where the cheap engine is going to reveal its limitations. Similarly, in the ideally engineered listening room, it is quite possible that a variety of amplifiers will never have to show their mettle. Instead, because they just coast along, listeners might not so easily distinguish the workhorses from the wimps.

A second consideration also applies to the aforementioned listening tests, and this is one which no scientifically minded person appears to want to consider. Namely, a listener hears music much more accurately when relaxed than when nervous. This means that anyone put into a double-blind test where his or her assertions about amplifiers are on the line is not going to hear very accurately. Listening to good music is rather like enjoying sex; it is when we are completely undistracted, and most at ease, that we can fully enjoy a sexual experience—and thus accurately and pleasurably assess how fully replete the experience is with our sexual expectations or aesthetic preconceptions. Such relaxed sexual enjoyment is impossible in, for example, one of Masters & Johnson's sex labs; similarly, I contend that relaxed (and accurate) music enjoyment is impossible in a carefully monitored listening test. Any supposedly scientific attempt at evaluating hi-fi equipment through double-blind testing injects anxiety into the experiment. This anxiety becomes a terribly contaminating, ie, unscientific, variable which renders the results of all such listening experiments invalid.

For me, the most accurate test I have ever devised as to whether amplifiers sound different happened when I was unaware that the test was taking place. It occurred with our own system. Realize that I am the fanatic about music and recordings; it is my twin brother who is the fanatic about equipment. At least once a year he takes our two monoblocks in to the shop to have them retubed and "gone over." This means we are deprived of our sound system for one week to a month, depending on the whim and mood of the repairman. About every two years, the preamplifier goes in too. This time it was the two monoblocks only. But because a friend of ours was in the process of moving, and would have his sound system in storage for about three months, he lent us his two monoblocks while ours were being worked on. My brother had set the two monoblocks up while I was away on a trip, and when I came back he showed the setup to me. My brother had not yet really given the system a good listen; he had only adjusted the preamplifier to the monoblocks' output to make sure that the sound levels were okay. We looked the borrowed amplifiers over. Curiously, they had the very same tubes as ours did, even though the monoblocks were a different brand. When I remarked on this, my brother stated that the borrowed amps cost only a little bit less than ours, although ours are supposed to be a much better brand. (You figure that out.)

I did not listen that evening, but the next day when I arrived home from work, tired and stressed, I turned on the sound system to let it warm up. Just as I was putting an album on the turntable, the phone rang. It was a brief con-

---

1 There is a third possibility, of course: that, perhaps inadvertently, the man organizing the test did so in such a manner as to render detection impossible.

—JA
The Stealth was so named to convey its design sophistication and ability to surreptitiously deliver formidable performance. Never before has such an array of technology and function been united in a digital product.

The Stealth harnesses the latest developments in conversion technology. The digital bit stream is processed with a hybrid one-bit ladder digital-to-analog converter. This 18 bit DAC combines the superb accuracy of one-bit technology at low signal levels with the resolution of ladder DAC systems at high levels.

A comprehensive digital input output switching and connector system allows maximum flexibility in building a system. Four inputs are accessed through the front panel Input switch: balanced digital, fibre optic, and two coaxial. A fifth is available on the Source/Monitor switch.

All digital formats can be accommodated. Single-ended and balanced analog outputs are provided through pure Class A, high-bias analog gain stages.

Stealth—the audio equivalent to a winged phenomenon.

THE FUTURE IS CLEAR...
conversation, probably no more than five minutes long, but when I am in a "listening mood" the phone is a damnable distraction. At the end of the conversation, I went over to the turntable, put the arm on, and sat down to listen.

But... something was amiss. The deep bass was very, very weak. The midbass was there, but it lagged—"muddy," my brother would say. The midrange was fine, but the treble was glassy at the very top and it seemed to break up during multiple-voice harmonies. The sound was not awful, but it was not right either. I heaved a sigh and thought to myself that, well, it is about time my brother is getting this system in to the shop again. And then I realized... our system was already in the shop. I was hearing two borrowed amplifiers, but had forgotten about this when the phone had temporarily detracted me from my listening.

So there you have it. I contend that I certainly can tell the difference between the sound of two amplifiers (even two high-end amplifiers, as happened in this case), since I detected this difference precisely when I was not expecting—had entirely forgotten to expect—any difference. This is all very subjective, I know, but I believe the results of this one unanticipated test (however difficult it may be to reproduce) are more reliable than are the results of double-blind tests contaminated by the "aural anxiety" caused when one's listening is being scrutinized.

As it turned out, the friend from whom we had borrowed the two monoblocks asked us to take them in to be "gone over" when we picked ours up. It turned out that nothing, absolutely nothing, was wrong with those two monoblocks; they did not even need to be retubed. So the difference could scarcely be explained away by stating that something was wrong with the borrowed set. On the contrary, the difference was inherent in the two different amplifier designs. A few weeks later I talked to the repairman myself, remarking on the difference, and asked him how two amplifiers with the same power tubes could sound so different in quality. He had a ready explanation, which I confess I did not understand, but it had something to do with what goes on inside the amplifiers before the signal gets to the tubes. And he stated that, in this respect, our monoblocks are a much better design.

Vanessa Vyvyanne du Pré
St. Louis, MO

A premier humor magazine?
Editor:
Thanks again for producing another great issue (Mar. '91). Gravitational energy patterns... frozen CDs... terrific stuff. I've always considered Stereophile a premier humor magazine, but this George Tice! Forget Dice Clay, this guy tips 'em all! I can imagine you guys getting together to plan an issue and laughing 'til milk comes out your nose. Keep up the good work!

Joseph Hayes
White Plains, NY

Stereos, silliness, & the Tice Clock
Editor:
I have been a stereophile for as long as there have been such things as "stereos" and "philosophers" thereof. I have no gripe with manufacturers or promoters of high-end equipment which might or might not be worth their extra cost to any given individual. Presuming their claims are not misleading or inaccurate, they certainly have the right to put their products on the market and get a shot o' the die at the public at large.

Nor do I contend with two of Anthony Fredrici's major premises (in "Letters," March '91, p.11). To wit:
• Machines can be devised which will detect things which the human ear is incapable of detecting.
• The human ear might be capable of hearing differences which no machine yet devised is capable of detecting.

Improvements come along about once in every cycle of the moon. Many of them have an allure which seems about as genuine as a carnival barker's smile. I mean, so maybe the mysterious Frog Boy from exotic Tasmania is really just some poor cripple with strange feet, but it only costs a buck to go in and waste a few minutes' time. Very few will demand their money back because it isn't worth the trouble.

That seems to be the philosophy of some companies who hawk improvements as cheap as they are dubious. For that reason, I would feel about as silly trying some things as I would going into the Frog Boy's tent.

Things which fall into that category are rubber CD rings and cryogenically frozen CDs. One of the criticisms hurled at "those high-enders" is that since no one can disprove the claim that some device or other makes a marginal improvement in an ill-defined operating
B&W's legendary 800 Series continues. The MATRIX 801 and 802 have profoundly redefined the upper limits of dynamic loudspeaker performance. Now the MATRIX 803 delivers the same uncompromising sound. Kevlar midrange, time aligned 'tweeter on top,' sixth-order bass alignment and B&W's unique MATRIX honeycomb enclosure technology combine, once again, to achieve the ultimate in flawless music reproduction. MATRIX 803's sleek appearance, economy of space, and lower cost continue the legend that is B&W 800 Series, beautifully.

B&W LOUDSPEAKERS OF AMERICA
PO Box 653 Buffalo New York 14240 Tel. (416) 751-4520
CANADA
104 Carnforth Road Toronto Ontario M4A 2K7

LISTEN AND YOU'LL SEE
parameter of the musical system, such as the “forwardness” or the “openness” of the sound, it’s up to you to make your judgment, and yours is as good as anybody’s.

Yer pays yer money and yer takes yer chances.

It’s probably not in the interest of such producers of goods (bads?), but I will suggest a method by which these things could be investigated. A double-blind test conducted by an unimpeachable, disinterested third party, on sufficiently large groups of people with demonstrably repeatable results, would go far in convincing me of the truth of a proponent’s claims.

A group such as the Consumers’ Union would be my idea of an unimpeachable and disinterested third party. Although I don’t mean to suggest that they necessarily be the ones to do it.

My experiences with stereo (and other) listening have led me to believe strongly in a few observable truths:

1) Listener fatigue sets in very early. This is no reflection on the equipment. It happens even at live music with acoustical instruments. By listener fatigue I mean that successive repetitions of the same set of sounds or notes will render a different reaction on the part of the listener. This fact has been known to many musicians and composers who’ve used it for effect in their music; I need not belabor the point further. But it points out a major deficiency in all A/B testing of competing systems, hookups, what-have-you. That is, I cannot listen to the second with exactly the “same ear” that I listened to the first.

2) The degree of improvement in sound noticed by a listener which is attributed to the action of the particular product under test tends to be proportional to that person’s financial (measurable) and emotional (unmeasurable) involvement and interest in the product.

May I digress? Sure, it’s my letter. I once compared my $59 guitar with a friend’s Fender Jazzmaster. All parties present (music store owner, music teachers, etc.) agreed, to their amazement, that my guitar beat the JM in both the bass and treble ranges. Did I say all parties? Well, with one exception: my friend, who owned the thing. Don’t you wonder what brand mine was? I admit, though, his looked better. Digression over.

This fact makes any test by a user or owner of equipment suspect from any scientific point of view.

3) All other factors being equal, louder will sound better. This fact makes some comparisons very difficult to achieve on a “flat playing field.”

4) Your favorite music on a mediocre system sounds better than something you hate on a much better system, but the better system will make some things sound good which you might otherwise not even consider worth your while.

5) If you always, or even usually, listen to the system rather than to the music, you’ve missed the point.

6) Much of the enjoyment of music takes place at an unconscious level which renders anyone’s opinion of it very subjective.

7) If you collect records as artifacts and never play them, as I’ve known some to do, you’re not interested in music or hi-fi, just collecting.

To come to the point—that is, what about frozen CDs? Ask me about digital. I know from digital. The data stored on the disc at recording time are the best rendition of the music that the producer of the recording was able to get on the disc. By its nature it is incomplete. One cannot include all the information of an analog phenomenon, such as sound, in a digitized medium. Something is left out between the digital quanta of information. Typically, of course, it is very small; the other improvements gained by the medium are worth the tradeoff. Nevertheless, let us assume that the data on the disc are “correct.” Changing the temperature of the disc can have one of only two possible results. It either changes the data on the disc, or it doesn’t. If you have a list of the data, such as a duplicate disc, you can determine whether changing the temperature had any effect. If it didn’t, case closed. Don’t tell me that the disc is going to cause any difference in the electronics of the machine. If you think so, you are practicing the science of voodoo. If the data are changed, then one of two things is possible:

1) It was improved; that is, it is now more like the original performance, and some of the information which was lost in digitizing the sound has been retrieved. This sounds suspiciously like some more voodoo science. Anyone care to explain where that lost information came from? Perhaps it floats in the ether from the time of its deletion from the recording and gravitates toward all copies of the disc which happen to be slowed down by the temperature decrease.

Stereophile, June 1991
There can be no standard of quality without a Reference.

This is especially true in the audio field where everyone, from studio engineers to manufacturers and reviewers, needs a solid benchmark for accurate sound.

For twenty years, the KEF Reference Series has been a standard by which all other loudspeakers have been judged. The latest benchmark for loudspeakers is the KEF Reference Series Model 105/3.

The 105/3's draw upon KEF's ground-breaking research into the interaction of speakers and room acoustics: coupled-cavity bass loading for deep bass from the smallest possible enclosures; conjugate load matching, which uses amplifier power to its full advantage and KUBE, KEF's proprietary bass equalizer, which produces the bass of cabinets eight times as large. The four-way 105/3's are the first Reference Series speakers to use Uni-Q technology.

Uni-Q: the first coincident-source drivers.

KEF Uni-Q is an engineering breakthrough: the first truly coincident-source driver.

Many audiophiles know that an ideal speaker would be a point source; unfortunately, multiple-driver systems often fall far short of this ideal. With Neodymium-Iron-Boron, the most powerful of all magnetic materials, KEF has created a tweeter so small that it can be placed inside the woofer's voice coil. In effect, every Uni-Q driver is a point source.

Moreover, the woofer cone acts as a wave guide for the tweeter and controls its dispersion. The entire frequency range arrives at the listener's ears at exactly the same time, producing seamless sound no matter where the listener sits. Unwanted reflections within the room are actually reduced, and the music you hear is less colored.

If you appreciate music, audition the Reference 105/3's. For any audiophile system, they are "standard" equipment.

KEF Electronics of America, Inc., 14120 K Sullyfield Circle, Chantilly, VA 22021

The Speaker Engineers.
2) It was deteriorated. That is, it is now less like the original in some way. Probably bits have been changed in some random fashion. If that happened, one of three things is possible:

a) You, the listener, never notice it. In that case you wouldn’t say there was any improvement.

b) You don’t like the change, because it has obviously been ruined in your opinion, having had its fidelity destroyed.

c) For some reason you like it better. This has nothing to do with high fidelity, only with taste.

Next topic: Clocks. For years I’ve had a digital clock on the top of my stereo system. Not because I think it makes the sound better, but because I want to tell the time. I have noticed that it does make a difference. If I place it too close to the tuner section of the receiver, it causes interference with some radio stations. Admittedly, with some that is an improvement. Nevertheless, I don’t hold out much hope for this technology. I’ve also noticed, while typing this letter and simultaneously listening to a tape on my personal tape player, that the RF radiating from the monitor has a great effect on the sound of the player. I suspect that it is doing something to the tape biasing. It certainly makes the high frequencies, including hiss, come out more crisply. A digital clock puts out similar RF interference which could possibly give you this same effect. (One clock I had interfered so badly with TV Channel 2, no matter where it was in the room, that I had to remove it. Strangely, this effect was confined to times between 10 and 19 minutes after any hour.)

James Kalmadge
Utica, NY

**Tice & enthusiasm**

**Editor:**

I am writing to share my enthusiasm for the products of George Tice. I own a Power Block and TPT Clock, and find that the two dramatically improve the sound of my system. All who have listened to my stereo, regardless of their audiophile pretensions, hear the improvement of both devices immediately and unequivocally.

I have also had the privilege of interviewing George and his wife Francine in my capacity as a reporter for *Business Week* magazine. In my ten years as a journalist, I have met no one more firmly devoted to his craft, or so committed to advancing the state of the art.

I find it necessary to include the above paragraph in hopes of offsetting the feverish remarks of Jack Roberts in the March 1991 magazine. Whatever Mr. Roberts thinks about Tice products, it is truly regrettable that he chose to reduce his criticism to drive with his snide, mean-spirited attack.

David Zigas
Forest Hills, NY

**Tice & hearing differently**

**Editor:**

Although I realize that individuals hear differently, I was surprised to read of the vast differences between TJN’s and JA’s findings and mine re the Tice TPT Clock. In my system—Counterpoint SA-5000, Lectron 50, Adcom ’555 II, Celestion 7000—the clock certainly tightens the bass but, more importantly, does wonders for depth and focus. At the same time, the sound is more authoritative, less forced but forceful, more exciting, more like the concert hall—the kind of improvements for which we are all continually seeking. I listened carefully and comparatively before deciding to buy. I don’t know why the Tice TPT Clock works but I don’t much care. I do know that I look forward to listening with more anticipation followed by more satisfaction.

The TPT Clock is well worth the cost; I urge anyone looking for the next sonic improvement to take advantage of the Tice return guarantee.

Alan W. McCracken
Lakewood, NJ

**Tice & presumption**

**Editor:**

I have been using the Tice TPT Clock for about six months. When I first auditioned the unit, the improvements garnered from having the
Write or call for a brochure and the name of your nearest dealer.

"The Vandersteens made the Beethoven sound more like Beethoven. The 2Ci's make music and they make sense."
2Ci Hi-Fi Answers, April 1990
Alvin Gold

"The 2Ci is one heck of a fine speaker at its price... Always musical... Enthusiastically recommended as an affordable loudspeaker for Everyman."
2Ci Stereophile, May 1989
John Atkinson

"You'll surely rediscover your record collection."
2W Ultra High Fidelity Magazine
Odette L. Roy

"Soundstaging, tonal integrity and dynamics make this speaker so much fun to listen to that I kind of hate to put them away to make room for others."
18 Sound, May 1989
Martin G. DeWolf

"The Vandersteens make for very good listening. This is no small accomplishment!"
18 Son Hi-Fi Video
Laurent Racicot and Claude Gervais
Clock plugged into the wall were readily apparent. These were, namely, greater depth, width, and focus. There was also less strain and grudge in the upper midrange, with the bass becoming slightly tighter. These improvements were easily detected by audiophiles and non-audiophiles alike. There was not one person who could not hear the improvements.

Tice dealers offer a money-back guarantee. I suggest that Stereophile's readers certainly try TPT in their systems, deciding for themselves whether or not they can hear the improvements. The Stereophile review suggests that it would be a waste of their time. A bit presumptuous, don't you think? I caution readers not to let their lack of understanding regarding the TPT process to cloud their judgment.

Bill McNeill
Nesconset, NY

Tice & the soundstage

Editor:
Tice says within 15–20 minutes you'll hear a difference. I heard a difference almost immediately after plugging the clock in. (My golden-eared wife, Lee, also heard it.) The sound got better as time passed, for about one-half hour. I heard a definite increase in soundstage depth and three-dimensionality. The bass also seems a bit more precise, and overall clarity is improved. When I disconnect the clock to compare, I hear the soundstage just slowly begin to decrease, until the whole soundstage sort of collapses from its dimensions with the clock in. I also noticed (as Tice mentions) an increase in hall ambience as well as more space between instruments (something that also improved when I purchased a new tube from Audio Research for my LSI preamp; wow, what a $20 improvement that was!).

So, I guess I can say (also, my wife) that we can hear pretty much all that Tice claims for the clock. It really is quite audible to us when we unplug the clock and hear the whole soundstage shrink and become more two-dimensional. I might add, these improvements do not sound at all unnatural or artificial to us. (We highly recommend trying one!)

Sam Dipietro
Haverton, PA

Tice & musical involvement

Editor:
Last week I tried the TPT clock; I was startled by the difference it made; I decided to buy it. In repeated experiments with and without the clock in the system, I felt substantially more involved with the music with the clock plugged in than when it was not. My first experiment used an LP of the Beaux Arts Trio playing a Haydn piano trio. With the clock in the system, I felt the rhythmic drive of the music more than ever, and revealed in the clarity of the sound and in the palpable presence of instruments; when I removed the clock and played the selections again, I felt somewhat bored by the music. The second LP used was with a record of Leontyne Price singing operatic arias. Here the beauty of the voice came through substantially more clearly with the clock than without it. Removing the clock made the voice sound, by comparison, as if it were coming through a tunnel: rather distant, somewhat muffled, somewhat unclear. Pulling the plug of the clock was an extraordinary experience.

The Tice literature suggests that the listener will hear the soundstage "collapsing" after doing so. I had trouble understanding what this meant, until I heard it happening. It sounded as if the musicians were rapidly and silently pulling their chairs closer together, while at the same time the precision of their articulation deteriorated. That was an extraordinary demonstration of the difference made by the clock (or, more accurately, of the TPT technology embodied in the clock).

While I was running these tests, my wife had been sitting in the room reading and half-listening while I went through the various changes. After the last trial, she looked up and said, "the last play didn't sound right. Was the clock plugged in or not?" The clock had not been plugged in. That was clearly a blind test, with a strong result: a person listening only casually detected the differences. Minor differences are not likely to have been noticed under such circumstances. I consider this corroboration of my conclusion that the differences are significant, and not minor.

James K. Kindahl
Pelham, MA

Tice & retail

Editor:
I am in the retail business, selling entry-level audiophile equipment, and yes, we are currently a Tice dealer. Even though we are not in a position to sell many of the Tice products, as a dealer we are required to allow the customer...
The new Acoustat electrostatic hybrid speaker.
Focused on performance; dressed by design. We eagerly await your listening evaluation of this new 'reference standard'.

For more information call 1-602-967-3565.
a home evaluation. It has been our experience that, once loaned out, people have a hard time parting with the sonic benefits offered by all of Mr. Tice’s inventions.

With regard to Mr. Tice’s inability or reluctance to release information on the TPT process at this time, shouldn’t we allow the customer to make his own value judgment regarding the performance and merit of the product? Why should there be a “need to know”?  

Joseph A. Corona  
Simply Stereo, Orland Park, IL

Tice & electron alignment  
Editor:  
I truthfully hear a distinct musical enhancement with the Tice TPT clock beginning with the first note. The overall musical sound seems to blossom. The soundstage expands and opens up. The music becomes more delicate and detailed. The musical instruments are more focused and separate. The highs are sweeter and smoother. The overall sound is more relaxed and refined.

From a holistic perspective, any change in a subsystem, whether for good or bad, affects the system as a whole as well as influences all the other subsystems (ie, everything is interconnected). At the risk of sounding overly simplistic, the Tice TPT clock’s effect on electron alignment could be compared to a magnet’s effect on a bar of iron. Left within the magnet’s field, the iron bar’s electrons become polarized and organize themselves into a north/south alignment. The iron bar then becomes a magnet too. The Tice Clock (after being treated with TPT technology) organizes the random electrons within the music sound system’s electronic field. Since science still has not explained what electricity or magnetism is (only what their effects are), how the Tice TPT clock does its thing is a mystery too. But its effects on the overall musical enhancement of a sound system can be experienced and described.

Forrest Flashman  
Monroe, WA

Nearly all the letters we received enthusiastically report that George Tice’s TPT Clock improves a system’s sound. Yet with the exception of Dick Olsber, not one of Stereophile’s listeners felt it to have much effect. I guess we will have to agree to disagree on the audibility of the TPT effect. And Mr. McCracken has the right attitude when he says, “I don’t know why the Tice TPT Clock works but I don’t much care.” As Mr. Corona implies, you don’t need to know how something works to bear whether it does or not.

One thing is certain, however. That whether the TPT process produces audible effects or not, the Tice tales of “electron alignment,” as repeated by Mr. Flashman, are utter bullshit. Mr. Tice accuses me of prejudice in this respect. But in a telephone conversation following the appearance of the Stereophile review in print, Mr. Tice admitted to me that he did not know why the TPT treatment would produce any audible effect. It felt it necessary to offer some explanation, hence all this talk of “trained” electrons organizing the household electrons to the benefit of the music by eliminating the new “electron noise” that Mr. Tice claims to have discovered but which is so far unmeasurable with our primitive Earth science.

The imaginatively written literature put out by Tice implies that the TPT process “programs” the Clock by subjecting it to some kind of pulsed magnetic field (perhaps from something like a magnetic resonance imaging machine). It is well-established, of course, that electrons in both conductors and insulators respond in a number of ways to the presence of magnetic fields, as summarized in the references mentioned by TJN in footnote 2 to his March review. But also well-established is the fact that any such electron-level effect immediately ceases when the magnetic field is removed. Whatever it is, an electron does not behave like a bar of iron, Mr. Flashman.

You will see from George and Francine Tice’s letter in this month’s “Manufacturers’ Comments” section that they take exception to our expressing our opinions on either the audible effect of the Clock or the official explanations of how it is supposed to work. (Despite their protestations, their “you’ll bear a difference if you’ll only listen to my explanation, buy my worldview” attitude is eerily reminiscent of Peter Belt’s utterings.) Here, then, is a challenge for you, Mr. Tice: I’ll retract my use of the word “bullshit” as applied to your explanation of TPT when you tell the world (without

2 Surely he isn’t talking about plain old thermal noise; ie, the background noise due to the random motion of the molecules in a conductor or semiconductor, which increases with increasing temperature and drops to zero at Absolute Zero (-273.16°C, -525.7°F)? Nah!
"Gold dome tweeter technology and advanced metal-cone woofers act as one to produce stunning realism. Cabinets are of the finest matched real woods or hand-rubbed black lacquer.

"The Monitor Audio Studio 10 joins that select group of minimonitors with which I could happily spend the next 10 years listening to music. . . . If you have a smallish room and want superbly musical sound from a stunning looking minimonitor, then check out the Studio 10. It may be all the speaker you'll ever need."

John Atkinson, Stereophile
Vol. 13 No. 11 (Nov '90)

"(The Studio 15) is good enough to meet and beat the best on offer, and in view of its exceptional build quality and standard of finish, it deserves and receives our unequivocal recommendation."

Hi-Fi Review (Jan '91)
inventing your own meanings for words) a) how the electrons in your Clock "remember" that they've been "programmed"; b) if they do "remember" their "programming," how they then pass on that memory to the electrons in the house wiring and hi-fi components; and c) why the effect should stop at the owner's AC circuit breakers rather than leaking out to benefit the rest of the neighborhood, or at least those hooked up to the same windings on the pole transformer.

In the meantime, I will assume that a more rational explanation of the Clock's effect exists, one that doesn't depend on the invention of semantically void, pseudoscientific bullshit terms such as "electron noise." For example, Mr. Kalmadge mentions in his letter the interference problems caused by digital clocks. Robert Harley tells me that the clock used by Tice has a BCD-7-segment decoder (BCD = Binary-Coded Decimal) which is particularly dirty in terms of RF emission. Given the existence of Murphy's Law, it seems hard to believe that introducing a source of RF noise into a system would not have any effect. And Casey McKee, of Brooklyn's Innovative Audio store, remembers an instance where he was setting up a customer's system only to be plagued by what sounded like cartridge mistracking. Except that the cartridge was tracking just fine. It turned out that the resonant transducer in a digital alarm clock in the listening room was singing along with the music; removing the clock from the room rendered the system's treble performance musical. —JA

More McKee musings
Editor: By my mental flash (that it was the buzzet/bleep/noisemaker in the clock that was making an effect on system performance) the other day, I didn't mean to imply a negation of JA's comments in the March issue. I believe those factors might play a part as well. Certainly the negative effects of LEDs have been noted by designers (although very few—JA mentioned Morecroft; Exposure's John Farlowe also eschews the use of LEDs to indicate operational status on his VII, XI, and XIV preamps, and his V electronic crossover network), and that is one possibility. Also, it has been my experience (actually at the same dealer, I believe, where I experienced the "cartridge mistracking" caused by the electronic alarm clock) that appliances of many sorts (including lamps) can affect the performance of a hi-fi when plugged in to the same mains circuit as the hi-fi components. This phenomenon is more noticeable the more capable and complex the system—in this instance, a floor lamp plugged into the same circuit as the electronics of a Linn/Naim active Isobarik system degraded the system performance noticeably.

So, perhaps a combination of effects is at work here, although speaker interaction was what struck me as most plausible (and probably most significant). As I would imagine you've experienced, even practiced listeners vary in their abilities to discern changes in the system performance of the sort caused by speakers in the room, mains quality differences, etc. Personally, I've always found that changes in the more traditionally discussed performance parameters (soundstage, tonal balance, transient envelope, transparency, etc.) are always accompanied by changes in the perceived pitch and rhythmic relationships of the music being reproduced. However, although I'm pretty good at pointing out these musical effects to listeners of varying levels of expertise, I would admit, of course, that I've noticed inconsistencies in many listeners' abilities to discern such changes. So I'm not surprised that there would be controversy on the audible effects of this product, consisting of views from wholehearted endorsements to cries of "fraud!"

What interests me is that, considering the nature of the device, I'm not surprised that some people are hearing an effect, but I am intrigued that the effect may be caused by something entirely outside the realm of the manufacturer's explanation/justification. I'm further intrigued by the 17-fold increase in price.

On the other hand, is it possible that George is right? That the Tice clock is actually a drill sergeant relaying firm (and obeyed!) instructions to the electrons concerning where and how they should go? Casey McKee Austin, TX

Enid & Tice
Editor: I notice at least three of Stereophile's listeners heard a forwardness with the Tice clock plugged in. That is what one hears when the clock is plugged in backward (reversed polarity). Because of several reasons, I suspect your wall outlets are wired backward, not the clock(s).
There are those people who say that to choose a hi-fi you have to understand the jargon, and know all about power ratings and performance figures. In our opinion, these people are talking nonsense. Because specifications don't tell you what a hi-fi actually sounds like. The only way to find out is to listen. Go to your Linn dealer, and you can compare our hi-fi with a selection of other good equipment. You don't have to be an expert. You'll find it very easy to hear the difference. To be honest, the best system will stick out like a banana in a hi-fi ad.

It's as relevant to hi-fi as technical specifications.

For additional information on Linn Hi-Fi, and the name of your nearest Linn dealer, contact:

Audiophile Systems, Ltd., 8709 Castle Park Drive, Indianapolis, IN 46256, (317) 849-7103

Aldburn Electronics, Ltd., A-1455 Crown St., N. Vancouver, BC Canada V7J 1GH, (604) 986-5357
With correct clock polarity, you should hear it as more laid-back than using no clock. You should also hear other effects quite easily—with wrong polarity it's not surprising you heard little or no change in the sound except the forwardness! There is none that I hear either.

Also, on p.161 of the March issue, you mention the experience, reported by Sounds Like...’s Myles Astor, concerning the changes in the sound from a plugged-in piece of “treated” speaker cable. I don’t feel it runs counter to the experience reported by TJN’s friend. I’ve heard drastic changes to the sound using plugged-in pieces of untreated speaker cable; the change in the sound can easily be from 1) its acting as a capacitor, or 2) the power-line voltages sitting on the plugged-in cable and radiating out into the listening room, and into the equipment.

You asked your readers for any ideas about how the clock works. In a tiny nutsheil, I think it’s a refined version of Peter Belt’s polarizing treatment. One of his products is a “polarizing unit”—the small battery-operated units I have were on the market for many years. Now he has a more powerful one.

You are right about the LED lights in the clock, as they do add noise unless the line is so bad one can’t hear it being added. LEDs do that.

Enid Lumley
Los Angeles, CA

Gullibility & Tice
Editor:
You guys could not have been more fair and objective in your evaluation of Tice Pulse Technology. (It looks like a clock to me!) So objective, in fact, that you failed to realize that you’d been had. Either that, or you were early for April Fool's Day.

This reminds me of an article that I believe appeared in Audio about 30 years ago, concerning advances in technology behind the Iron Curtain. A description was given of a powerful radio transmitter the size of a car barn which could deliver propaganda into homes through the filaments of electric toasters.

I hate to admit that I was ever that gullible. Have I outgrown it, or have you done it to me again?

Richard Simonton
Orlando, FL

Stochastic noise & Tice
Editor:
The controversy surrounding the Tice TPT clock (as well as the Coherence Industries product) focuses my thinking regarding purely subjective “improvements.” I certainly agree that what matters is whether or not you can hear an improvement. However, where the improvement is purely subjective (no known applicable measurement), a scientific explanation of why it works certainly increases the strength of one’s conviction that the audible improvement is “real” and not merely the result of the reviewer’s wishful thinking.

The February 23, 1991 issue of Science News contained an article, “The Signal Value of Noise,” about stochastic resonance. This was my first exposure to this concept, and my understanding is limited. Suffice it to say, the thrust was that, under some circumstances, an increase in noise in a system can improve over-
LOOKS LIKE NO OTHER...
SOUNDS LIKE NO OTHER...
SOUNDS LIKE NOTHING AT ALL.
THE BEST IN THE WORLD.

Interconnects and Speaker Cables.
Made in USA

XLO Electric Company, Inc.
9164 Hidden Farm Road
Rancho Cucamonga
California, 91730
Phone (714) 466-0382
Fax (714) 466-0482
all performance. Further, this has been experimentally demonstrated in a number of electronic circuits. Science News concluded by noting that stochastic resonance may have an impact on the signal processing needed to transmit a signal from the eardrum to the brain.

JA suggested the Tice TPT clock may actually introduce some electromagnetic interference into an audio system. Perhaps an examination of stochastic resonance relative to this product might provide a better understanding of what occurs when it is plugged in.

Bob Ludwig's conclusions, as reported by Peter Mitchell in March, raise an interesting point. Is the "better" sound of analog nothing more than the sound of a technology with which analog mavens have become accustomed, or could the LP noise improve the sound because of stochastic resonance? Lee Estes
Milford, MI

Capitalism & Tice
Editor:
With the review of the Tice TPT Clock, you abandon factual errors in favor of metaphysical errors. Norton claims to not be a raving loony, merely to have an open mind. This statement conveys no information, as he would say it in either case. But to give serious consideration to whether plugging in a digital clock improves the sound is to have a mind so open your brains have fallen out.

From the Tice response, p.217, "There is much in science which is still unknown," and "TPT is a major scientific breakthrough"! These statements undermine the very concept of science. Science is the known, the repeatable and objectively verifiable. A "breakthrough" which isn't discernible by a careful observer is mere hype. Mr. Tice is a believer in capitalism (p.31); so am I, but I would remind everyone that the first rule of capitalism is "Buyer beware!" Denzil G. Danner
Pierce City, MO

Dealers, losers, & Tice
Editor:
George Tice, and all the dealers who wrote in canceling their magazine orders, are all losers. As Mr. Tice said himself, this is America, where people can price products as they wish, and try to recoup their investments. People can also make bad investments, go out of business, and be killed by mail-order competition. Capitalism works both ways. If very few people are making money in high-end, so what? Few school teachers or social workers make big money either. The manner in which Mr. Tice denigrated both critical consumers and the very farriminded reviewers of Stereophile was abominable. Stephen Nadler
Plaistow, NH

Dealers & choices
Editor:
How ironic that as Stereophile makes a point of reiterating its support of the high-end audio retailer ("The Final Word," March '91), several such retailers choose to withdraw their support (and sales) of Stereophile. It seems these retailers would prefer your magazine to limit its reviews—and, more specifically, recommendations—to only those products they themselves carry, oblivious as to how this would compromise Stereophile and do a disservice to the greater audio community.

Most audiophiles occasionally find themselves called upon to recommend equipment to friends, and I am no exception. In response to their particular needs, I have directed friends to certain local retailers, mail-order specialists such as Audio Advisor, and direct-sales manufacturers like Henry Kloss's Cambridge SoundWorks or Dave Foko's Icon Acoustics. My obligation (as well as the retailers' and Stereophile's) is to offer fellow audiophiles the widest possible range of quality choices; the buyer's obligation is to his ears and his pocketbook.

I find the self-serving whinings of Vern's Electronics, Primus Audio Pleasure, and Audio Mart small-minded and ultimately (thank goodness!) self-defeating; I, for one, am not interested in doing business with this sort of retailer. What other information might they wish kept from me?

Please continue to review equipment from the widest possible variety of sources, with a mind to what the equipment has to offer, rather than bow it is marketed.
Brent Higinbotham
Chelmsford, MA

A salesperson's point of view
Editor,
I find Larry Archibald's comments about audio retailers in his March "Final Word" column nearly on target. As an audio salesperson, I have spent countless hours explaining how a CD
TESLA WILL IMPROVE YOUR IMAGE
player operates, how to set up speaker XYZ so that it sounds the best, why amplifier ‘A’ cannot be used with speaker ‘Z,’ why speaker cable upgrades are important, and several other zillion topics which have nothing to do with the immediate sale, only then to see my customers take this knowledge and walk over to “Barney’s Audio Blowouts” to buy the component for less. I have even had some customers return to thank me for my knowledge and skills and apologize for buying the item elsewhere at a lower price. So while I agree that a retailer has a commitment to his customers to be honest, fair, and helpful, the customer has a similar commitment to the retailer: to be honest, fair, and to reward the sales associate’s skills and advice with the sale.

That said, I find the current state of retail to be more a result of the retailers’ lack of foresight than of disloyal customers. Let’s face it—the market for manufacturers of high-end gear has been shrinking, while the number of manufacturers seems to be growing. Who is buying all of this new equipment? Certainly not the guy who just spent $6000 last year on the “amp of the ’90s.” No, the real problem in highend audio is that the retailer has done little to broaden his customer base. The fact is that very few people are discovering high-end audio for the first time, and those already entrenched in the high end see no need to continually update their systems.

A comment was made several months ago by Sam Tellig that patrons of live symphonies and orchestras, people who spent considerable amounts of money to appreciate fine music, had probably never realized that affordable equipment was available to recreate that experience at home. How many high-end shops are pursuing that market? College students spend considerable amounts on tapes and CDs, but do retailers attempt to place ads in college newspapers or contact music organizations on campus? The result is that a large number of potential customers never make it past mid-fi equipment. These people’ll pay $2000 for a rack system from a chain-store retailer, an amount that would easily buy a musical-sounding budget system.

Further complicating the problem are sales people who are extremely knowledgeable about product, but can’t take that knowledge and relate it to the average customer who has little technical information. I remember when I began to read Stereophile, skipping the technical section and going straight to the conclusion. The technical knowledge took years to learn, and only after asking several questions and researching on my own did I begin to understand how the equipment functioned. I suspect that a majority of audiophiles are more interested in the equipment than in the music, which is fine. The problem is that most audiophiles have little patience for those who are merely interested in the music, and who don’t particularly care if the gear is transistors or tubes, digital or analog. The end result is that the high end appears reserved only for those who possess the skills and knowledge or are interested in something other than the music.

It’s up to the retailers (and, to a lesser extent, magazines such as Stereophile) to broaden their customer base and reach a new clientele. This requires rethinking sales and advertising methods, and really getting creative. Let’s face it, companies like Apple didn’t grow by simply selling computers to professionals; they expanded their market to ordinary people who had never experienced a computer before. The result? Computers became more than a product, they became a hobby. The most successful retailers were those who could take the technical aspects of a computer and translate them into terms that people could understand and relate to. If this led to the customer developing an interest in the technical aspects, great!

In this time of budget cuts, recessions, etc., it’s easy to point the finger somewhere else. But if the high-end retailer is to survive and prosper, he needs to expand his market and rethink the way in which he does business. Examples of specialty retailers that have done this are numerous (in fact, specialty retailers are weathering the current recession better than most retailers). So while we may chide the customer for wasting our time, and blame the recession for slow business, we must also exercise a little foresight and creativity.

Dave Green
Fullerton, CA

A consumer’s point of view
Editor:
I enjoyed the exchange of salvos between John Atkinson and the “Whining Retailers Against Mail Order.” Here’s the point of view of one consumer.

What is it that makes a specialty retailer special? Price tags? Product mix? Location? Thick
There's More to Monster Cable® Than Meets the Eye.

Interlink® 400

A lot of cables look alike on the outside, but it's what's on the inside that counts.

After all, that's what you hear, and that's what gives Monster Cable® a reputation for producing the highest quality cables made today.

For example, in our Interlink® 400 alone there are five Monster Cable® innovations that have been awarded three U.S. patents — like Bandwidth Balanced® conductors, MicroFiber® dielectrics, Time Correct™ windings, and the beautiful Turbine™ RCA connector.

And it's one of our least expensive cable designs.

It takes a lot of technology to bring you great music.

But the effort is well worth it.
carpets, chrome fixtures, and walnut paneling? No, the thing that makes a specialty retailer special is his commitment to customer service, his expertise about the products he sells (and doesn’t sell), and the ability to share that expertise with his customers. And by that definition, a great many audio/video retailers with storefront locations and fancy merchandise are in no way special.

And again, by that definition there are some mail-order firms that are truly special retailers. For example, many mail-order firms offer their customers a 30-day, no-questions-asked, money-and-shipping-costs-back guarantee. How many so-called specialty retailers will give you a 30-day free home trial of any hardware in their store?

Unfortunately for consumers, all too many retailers (of many products, not just audio) are just plain lazy when it comes to providing the extra service that could make them special. And because so many are not special, the mail-order firms, mass merchandisers, and discounters flourish in the vacuum.

If you are fortunate enough to live in or near a community that has a special audio retailer who practices what Gary Hjerpe preaches in his letter, it is probably worth paying higher prices to obtain the special service he advocates. However, if your community does not have a special retailer, what do you do? Give up on quality audio?

For the millions of us who don’t live in or near a big city, a catalog and a phone call to a mail-order house may be our only practical means of access to many high-end audio products. And thank goodness we can read the reviews and locate the mail-order firms that sell those products in special publications like Stereophile.

The bottom line is that special retailers have nothing to fear from mail-order firms because, as Mr. Hjerpe so eloquently argues, a voice on the phone, or the description in a catalog, simply cannot compete with the kind of face-to-face personal service provided by a competent, hard-working, special retailer with a storefront operation.

If the mail-order business is so easy, so lucrative, so advantageous, why don’t the whiners get off their duffs, publish their own mail-order catalogs, and get in on all that easy money? Or would it require too much effort?

John Arrington
Arcata, CA

Founding Member of Consumers Against Retailers Against Mail Orders, or CARAMO, pronounced CRAM-OH!

Icon Acoustics & comparisons

Editor:
While I support Stereophile’s policy regarding reviews of mail-order products such as Icon’s Parsec loudspeaker, I would like to add a couple of observations about mail-order services generally, and Icon Acoustics specifically. Even here in Los Angeles, where one can audition nearly every high-end product in existence with little more than a half-hour drive, it does occasionally become necessary to turn to the mail-order companies for specific products and services. In my case, I needed custom lengths and terminations of MIT interconnects and speaker cables. None of the local MIT dealers were of any assistance; they all wanted to sell what they had on the shelf, regardless of my needs. However, one call to Stereophile advertiser Michael Percy delivered the cables I wanted in the lengths I needed, all with terminations and connectors which were quite superior to those provided on MIT factory-terminated cables. Thank you, Mr. Percy!

Following JA’s review of the Icon Parsec in Vol.13 No.12, I wrote a letter to Dave Fokos at Icon. Within a few days I received a personal letter from Mr. Fokos, as well as Icon’s latest brochure. Very impressive. Yet there’s something that bothers me about Icon’s advertising tactics. In both Mr. Fokos’s letter to me and also in his manufacturer’s comments, he states that the Parsec would sell in retail stores for $3000 and that the Lumen would sell for $1300. Really?? In my letter to Icon, I asked Mr. Fokos to compare the Lumen with the Spica TC-50, the Snell J/III, and the British Fidelity MC-2, all retailing between $550 and $700. My point is that it’s all too easy for a “mail-order—only” manufacturer to proclaim to the potential buyer that the middleman and his profit have been eliminated. Is the Lumen really a $1300 speaker, or is it really only competitive with similarly priced speakers such as those I mention above? Is the Parsec really able to slug it out with the likes of the Magnepan MG3.3/R, Martin-Logan Sequel II, or even something less expensive like the Apogee Stage? Maybe, but even with Icon’s 30-day trial period, I ain’t goin’ for it!

Paul A. Cervantes
West Hills, CA
Icon Acoustics & mail order

Editor:

In response to the letters regarding Icon Acoustics in your March issue, as I am only a manufacturer, and not a mail-order retailer, I can only respond to the concerns regarding manufacturers. As a manufacturer, I sell only my own brand of loudspeakers. We are not a discount outlet for any other products. Our speakers are only available directly from us, and therefore do not undercut any potential dealer sales of our speakers.

When I began Icon Acoustics, one of my goals in selling directly from the factory was to be able to offer audiophiles, living many hundreds of miles from their nearest high-end retailer, the opportunity to conveniently audition our speakers. What I found was that not only were isolated audiophiles ordering our speakers, but also those living near retailers. Some of these retailers may feel that their livelihood is being threatened by manufacturers who sell direct, and other mail-order companies. To them I would say that if they are offering their customers high-quality products that represent a good value, and services that their customers want, then they have nothing to fear from competitors.

An audio retailer purchases equipment from a manufacturer for a price which represents the cost and value of the product. When he resells the product to a customer he adds a markup which represents the value of the services he includes with the transaction. These services include such things as having demonstration rooms available, providing demonstrations, consultation, system setup, and installation. If he did not provide these services, then the markup would amount to nothing more than some sort of bizarre consumer electronic tax levied upon the customer. A customer, given the choice of purchasing these services, decides whether the services offered are worth the price asked. If the answer is yes, then he will purchase his product from the retailer offering those services. However, if the answer is no, then he will make his purchase elsewhere—from the retailer down the street, or perhaps through mail order. This is the basis of our free-market economy. One of the most basic principles of business leads us to conclude that if a retailer is losing his customers to other sources, perhaps he should reevaluate what he is offering his customers. When he offers them something of value, they will gladly pay him for it.

It is not my intention to criticize audio retailers. I would like to make it very clear that there are many high-end retailers who have my deepest admiration for their honesty, integrity, and dedication to service. Gary Hjerpe of Scottsdale's Esoteric Audio, whom I have known for many years, is one of them. I would gladly recommend his shop to any audiophile. Some others that fall into the same category include Norvelle Wathen of Musical Images of Kentucky in Lexington, KY; Mark Rush of North Country Audio in Redwood, NY; Scott Davis of Sound Hounds in Denver, CO; Neil McPhee of Sight & Sound in Morristown, NJ; and Ralph Tarofsky of Professional Audio Consultants in Milburn, NJ.

I know that most of Mr. Hjerpe's letter was directed toward mail-order retailers, but I would like to address his concerns just the same. While some mail-order companies may provide only "no frills" service, at Icon we have worked hard to provide our customers with many of the same services that should be available from retailers, and perhaps even improve upon some of them. We are definitely not here, as Mr. Hjerpe states, to "merely close the customer, take his order."

We understand that the consultation process, whether from a retailer or from one of our consultants, is an important part of helping audiophiles assemble a synergistic high-end system. Just like a retailer, we spend time talking with each of our customers to understand their needs. We learn about their musical tastes and listening habits, about their listening rooms and equipment. We never pressure our customers to purchase our speakers, and in some cases have even recommended competing products when we felt they would better serve the customer's needs. Though we sell only our own products (with the exception of AudioQuest speaker cable and Chicago Speaker Stands, which we do as a service to our customers who have purchased our speakers), we gladly offer our opinions, and information passed back to us by our customers, with regard to other products. We are happy to offer this consultation to anyone who calls our toll-free number, regardless of their purchasing intentions.

We are all aware how important it is to evaluate a new component in the listening room and system in which it will be used. It is our policy
The finest preamplifier in Japan...

IS MADE IN AMERICA!

Selected by Japan's prestigious Stereo Sound magazine as the "Component Of The Year" for 1990, Counterpoint's SA-5000 may well be the best preamp/control center in the world.

Why? It might be the "New Generation" environmentally-isolated hybrid circuitry that melds vacuum tubes, field-effect and bipolar transistors together with a fully-regulated tube power supply. Or its advanced materials and plating technology that assures incredible dimensionality and musical performance.

Or perhaps it's due to features like separate MM and MC inputs, selectable phase inversion and a choice between direct tube or hybrid buffered outputs. Or it just might be a reflection of Counterpoint's quality control. After all, even the chassis and transformers are built to exacting tolerances right at the Counterpoint factory.

Decide for yourself. Audition an SA-5000. What you hear will be American ingenuity at its best.

Call 1-800-275-2743
2610 Commerce Drive, Vista, CA 92083
Since 1974 no alternative audio marque has displayed such creative circuit design, superior craftsmanship and finish, greater dynamic capability, or presented a more deeply satisfying music involvement.

To receive detailed information on all Threshold audio components write:
Threshold Corporation
7325 Roseville Road,
Sacramento, CA 95842;
or call 1 (800) 888 6055.

more than audio excellence
Threshold
to allow our customers to try our speakers for 30 days in their home. Aware of how anxious audiophiles are to receive their new speakers, we decided to ship our speakers by Federal Express, arriving anywhere in the country within one or two days. We pay all freight charges (both ways, should the customer decide not to keep the speakers). Round-trip shipping costs on a pair of our $1795/pair Parsec speakers is $500, a cost we are willing to pay to give our customers a chance to audition our speakers in their home.

All Icon speakers come with a lifetime warranty. Should one of our speakers require servicing, we immediately take care of the problem, again shipping by Federal Express. We once had a customer in New Jersey who thought there might be a problem with the crossover in one of his speakers. The problem, as it turned out, was only a blown tweeter, and in this case the customer decided to install the new tweeter himself (we supplied instructions and a new tweeter free of charge). However, thinking the problem to be more serious, I had already made plane and car reservations so that I could fix the speaker in the customer’s home, and save him the trouble of packing up his speaker. I think it’s clear that we are more than just a loudspeaker warehouse.

I chose a career in high-end audio because of my love for music and the equipment used to reproduce it, not to get rich quick. In the two years since I started Icon, I have taken home less pay than I would have earned as an electrical engineer working for a large corporation. But I still do it because I get a thrill every time I talk with a customer who tells me how much more he enjoys listening to music since he got his Icon speakers.

I hope that in the future those retailers calling for protectionist measures against honest competitors will instead focus their efforts on the real issue—providing audiophiles with products and service that represent quality and value. David R. Fokos
President, Icon Acoustics, Inc.

Audio Concepts & mail order

Editor:
Mr. Hjerpe says in the March issue of Stereophile that he is “tired of being ridiculed and demeaned in print,” and then he goes on to do exactly that to all mail-order audio companies as a group. Why all the anger? I prefer to believe that both retailers and direct marketers share a common goal of properly meeting the needs of audio enthusiasts. Mr. Hjerpe misses the obvious: there are poor, mediocre, and excellent retailers just as there are manufacturers selling factory-direct. From his description of his company, I would guess that he does an excellent job. Many of our customers do not have access to an excellent specialty retailer. Over the years, my staff and I have spoken to thousands of audiophiles who were totally turned off by the retailers they encountered. Does that make all specialty retailers bad? Definitely not, but it does have a lot of music lovers needing an alternative.

I agree with Mr. Hjerpe’s comments about taking the time to educate customers about good sound. But . . . it is not just “retailers, reviewers, and magazines.” He says “Mail-order houses and discounters can’t provide these services; they cost too much in time and money.’’ My staff and I spend thousands of hours per year providing exactly these services! I can assure you we do tweaking, adjusting, and educating. We also give our customers an in-home trial to give them time to compare and to hear the music in their rooms in their systems.

Mr. Hjerpe then asks, “how much assistance is the mail-order retailer going to provide when the equipment breaks down?” I can’t speak for others, but Audio Concepts, Inc. designs, tests, and builds all our systems so chances of failure are slim to begin with (unlike some very costly equipment often sold by specialty retailers that seems designed to fail!). But in the unlikely event of a breakdown, the following are implemented: a) If the speaker system fails due to a manufacturing defect within warranty (5 years), we replace the part at no charge; b) If a driver is blown or physically damaged by the customer, we sell them a replacement at a discounted price through our retailers.

Throughout his letter Mr. Hjerpe “assumes” that the mail-order retailer will not take the time to serve the customer, that all we are interested in is the quick sale and getting rich. Nothing could be further from the truth! Our company philosophy reads, “Audio Concepts, Inc. has been satisfying demanding ears since 1977. Our goal has and always will be to provide exceptional product and service to music lovers around the world.” The fact that we were one of the very first audio companies to offer a
“For once, an add-on subwoofer actually delivers true subwoofer bass with high quality and high quantity at the same time.”

Larry Greenhill

Velodyne is one of the hottest names in today's audio/video industry. Why? Because whether you're upgrading a current system or building a new one, there is no other single component that can boost a system's overall performance like a Velodyne subwoofer.

"... the integration was seamless and changed the overall character of the system in a synergistic, beneficial direction."

Larry Greenhill
Stereophile, Vol. 12. No. 10

What makes the difference? Velodyne's patented High Gain Servo (HGS) technology, which represents a major breakthrough in loudspeaker design.

"I determined that a high performance accelerometer based feedback system would be the only way to truly correct the problems that plague low frequency reproduction. Such a system had never been successfully built before. But through a systems approach of redesigning the driver and electronics from the ground up, I have developed a system that delivers high output levels with unprecedented low levels of distortion."

David Hall, President/Founder
Velodyne Acoustics, Inc.

All Velodyne subwoofers are complete systems. Just plug one in to experience the full audio spectrum: Cleaner mids and highs with low frequency response that you never thought possible. It's a dynamic overhaul for your system.

"Other subwoofers had not moved much air and certainly hadn't coupled with the room... Not so with the Velodyne—I was there!"

Larry Greenhill
Stereophile, Vol. 12. No. 10

Experience All The Music:
Experience Velodyne.

Velodyne Acoustics, Inc.
1070 Commercial St., Suite 101
San Jose, CA 95112
408/436-0688 800/VELODYNE
money-back guarantee, the fact that more than 75% of our sales come via customer referral or repeat business, and the piles of letters and warranty cards from very satisfied customers, prove that we are meeting the needs of our customers just as well or better than the audio specialist retailers.

Mr. Hjerpe, I think there is room for both good dealers and manufacturers serving their customers in a variety of ways.

Mike Dzurko
President, Audio Concepts, Inc.

Cables & mail order
Editor:
I am writing to respond to the exchange of letters on mail-order and manufacturer-direct retailing which appeared in Vol.14 No.3. I was particularly interested in the letter from frustrated boutique retailer Gary Hjerpe, which was immediately followed by letters concerning the Legacy and Sequerra speaker lines, both of which are sold by the manufacturers directly to consumers.

First, with regard to Mr. Hjerpe's letter, I could debate each one of his complaints. He contends that only storefront retailers can offer value-added services. We have no storefront, but we just don't fit his negative profile.

At The Cable Company we spend most of our day consulting with our customers on cable matches for their existing systems using a database on practical cable matching compiled from customer feedback that only an operation with our geographic scope could have developed. We assist our clientele in developing a shortlist of cable products to try at home in their own systems where their empirical listening experience will reflect all of the interactions occurring in and among their components. Could a salon retailer accomplish this better (in bis store on bis equipment) than the consumer can in his own home on his own equipment? Could a salon retailer offer the complete range of possible options to the consumer that an operation such as ours can, exactly because of our broader customer base?

It is because the answer to these questions is “No” that we have been able to develop cooperative, mutually beneficial relationships with some of the best high-performance (and forward-thinking) audio salons in the country. We help each other to help our mutual customers achieve that breakthrough system that

Mr. Hjerpe also seeks. There is no inherent antagonism between a focused and committed outfit like ours and a focused and committed storefront so long as we both have the customer's interest and the genuine pursuit of the hobby at heart.

Mr. Hjerpe also contends that only a storefront retailer can provide customer service and support. As my mother would say, bogwash! Close relationships with manufacturers and a willingness to go to the mat for the customer are what get problems solved.

Provision of “loaners”? I'm sure that no retailer makes a larger percentage of inventory available as loaners than we do.

Let's face it: The market will decide the shape and form of high-end retailing over the long haul. The retailer that is sensitive to the market will expand the market and thrive in the process. His customers will be loyal and he'll be loyal to his customers, even if that means enlisting a specialist retailer's support and assistance over an 800 number.

On the subject of manufacturer-direct sales (à la Sequerra and Legacy), products like these will succeed because they are high-performance designs at attractive prices and consumers want them. I agree with Mr. Hjerpe, however, that the consumer's interest would be even better served if a higher priority could be placed on system-matching these components. We all agree that to achieve the "breakthrough system" in audio the whole must be greater than the sum of the parts, and that too often the opposite is true. So what can one do with manufacturer-direct products like Sequerra and Legacy?

What I did was call Dick Sequerra and Bill Dudleston (Legacy). Know what? They agree about system matching, too. And we're all going to do something about it. I'll start a new company and call it Audio Direct. Using their speaker systems as anchor products, I'll identify the optimal amplification available. (You can bet the cables will be right!) We'll take these optimally matched high-end systems and market them through the homes of committed hobbyists around the country. In this way we'll let the broader audiophile community, the hobbyists themselves, be the front line in the critical task of growing the high-end market. (They'll also do it because they'll get paid.)

Most of the traditional storefront retailers will scream foul at this too. But a few won't because

Stereophile, June 1991
Real power has always been in the hands of the few.

Adcom stereo components have earned a reputation among audiophiles, engineers and musicians for extraordinary performance at affordable prices. Now Adcom introduces its newest amplifier, the no compromise GFA-565, for those in pursuit of absolute power and sonic perfection, but who prefer not paying a king's ransom.

The Evolution of Adcom's GFA-565
Adcom's new mono GFA-565 evolves from the design of the critically acclaimed GFA-555, greatly extending its capabilities. Representing brute strength, it delivers 300 watts at 8 ohms, 450 watts at 4 ohms and an awesome 850 watts at 2 ohms.* Most significantly, it will accurately drive even esoteric loudspeakers which present loads as low as 1 ohm.

Why Use Two Mono Amplifiers?
The ability to deliver very high power into complex loads is a prerequisite for superior sound reproduction. Power supplies capable of delivering the energy necessary for high power, high-current amplifiers are massive. But there are practical limits to the size and weight of stereo amplifiers designed for home use, as well as heat dissipation and reliability constraints. Consequently, the use of two Adcom GFA-565 mono amplifiers offers optimum sound definition, detail and dynamics, satisfying even the most demanding perfectionist.

More Sound, Less Money
Like the GFA-555, the new Adcom GFA-565 sounds superior to amplifiers costing two and three times as much. It is so powerful and pure that it may be the last amplifier you ever buy, even if you upgrade your loudspeakers several times over the years. And that makes the GFA-565 an extraordinary bargain considering its exceptional performance.

*Continuous power output, 20 Hz-20 kHz; <0.02% THD, measured in accordance with FTC specifications.
they'll realize that everyone benefits when the market grows. Our operation will find new high-enders and these new high-enders will comparison-shop. Many will buy Audio Direct systems. Some will find other preferences. May the best sound win the sale. That's what high-end retailing (and free-market economics) is all about.

Robert Stein

The Cable Company, Point Pleasant, PA

Shice!

Editor:

After years of development, the Shice Golden Ear Audio Co. is close to releasing a proprietary product designed to improve the listening experience (viewing if you're watching VCR, TV, home slides, or reading a magazine).

The product comes to you in a small paper bag and is designed to be placed in the listening room. The actual product is a secret mixture of bat, toad, cricket, and bull (the major component) manure.

The effects of the product are not contingent upon the mixture of guano, which any fool could collect, but are achieved only after Music Monks, living in high mountain caves, meditate for extended periods of time over each bag of Shice. This endows each bag with pseudo-magical qualities that allow the mixture to alter the very molecules (gases) in the listening/viewing room.

One word of caution: during testing, one subject placed his bag of Shice on top of tube amplifiers, which ignited the mixture. (The manufacturer disclaims all responsibility for the use of this product.) Still, the user reported that the resultant music rush was so powerful he felt no animosity toward the SGEA Co.

The bags will probably retail at $50, and we believe a change will be noticed in any room in which they are placed. If the user is not sophisticated enough to hear a difference, then we suggest he buy as many bags as necessary to effect a change.

If, after spending several hundred dollars for Shice, the individual feels he possibly did not make the most sagacious purchase, then we suggest you look inward and ask God why your earning abilities do not match your cupidity.

Our metaphysician/scientists are working on a white paper regarding the mystical molecular modifications offered by Shice; they had one, but it was found to have a rather large brown spot of questionable origin, and they had to start over.

To paraphrase another great American entrepreneur, P. T. Barnum, "a sucker is born every minute."

John Seaton
Rancho Cucamonga, CA

Nice!

Editor:

I admit it up front: I haven't tried George Tice's Clock. But I do know why you guys don't like it. I wouldn't like it, either. He blew it. Everyone knows that analog is better, so why treat a digital clock? If he would just have treated an analog clock, at least he would have had a chance. I'm certainly not going to put a digital clock in the same room with my Oracle.

Dave Hill
Charlottesville, VA

esne HAS IT

@TDK.

DIGITAL NOISE ABSORBER

NF-C09 PLACEMENT PRIORITY

- NF-C09 Digital Noise Absorber
- Signal Flow
  1. AC Cords
  2. Input Side of Equipment
  3. Output Side of Equipment
  4. Speakers (at speaker terminals)
  5. Speakers (at amp terminals)

CASSEREE DECK

CD PLAYER

AMPLIFIER

Audible Improvement will vary according to equipment used, the strength of EMI present in the environment, and the number of NF-C09s installed. Experimentation is recommended. By placing the NF-C09 digital noise absorbers at strategic points in your system, their ferrite cores will absorb the EMI that your cables attract like an antenna. The result is purification of the audio signals resulting in cleaner, clearer, smoother sound.

$15.00 a pair - Delivered*

esne Inc.
P.O. Box 319, Huntington, NY 11743-0319
FAX (516) 266-4331

*NY Residents add applicable tax
<table>
<thead>
<tr>
<th>State</th>
<th>City</th>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>Tucson</td>
<td>155 N. 6th St.</td>
<td>(602) 795-5405</td>
</tr>
<tr>
<td></td>
<td>Phoenix</td>
<td>333 W. 4th Ave.</td>
<td>(602) 993-3351</td>
</tr>
<tr>
<td>California</td>
<td>Audio By Design, Inc.</td>
<td>Newport Beach, CA</td>
<td>(714) 681-2112</td>
</tr>
<tr>
<td></td>
<td>Audio Den</td>
<td>Van Nuys, CA</td>
<td>(818) 781-4700</td>
</tr>
<tr>
<td></td>
<td>Audio Haven</td>
<td>Upland, CA</td>
<td>(714) 982-8110</td>
</tr>
<tr>
<td></td>
<td>Ahead Stereo</td>
<td>Los Angeles, CA</td>
<td>(213) 938-8081</td>
</tr>
<tr>
<td></td>
<td>Audio Vision</td>
<td>Santa Barbara, CA</td>
<td>(805) 966-7707</td>
</tr>
<tr>
<td></td>
<td>Beverly Hills Audio</td>
<td>Beverly Hills, CA</td>
<td>(310) 270-2901</td>
</tr>
<tr>
<td></td>
<td>C&amp;M's Stereo Unlimited</td>
<td>Fairfield, CA</td>
<td>(707) 422-3340</td>
</tr>
<tr>
<td></td>
<td>G.N.P. Loudspeakers</td>
<td>Santa Fe Springs, CA</td>
<td>(818) 577-7767</td>
</tr>
<tr>
<td></td>
<td>Music By The Sea</td>
<td>Leucadia, CA</td>
<td>(619) 436-7692</td>
</tr>
<tr>
<td></td>
<td>Musical Images</td>
<td>Fresno, CA</td>
<td>(209) 449-0707</td>
</tr>
<tr>
<td></td>
<td>Monterey Stereo</td>
<td>Monterey, CA</td>
<td>(408) 649-6303</td>
</tr>
<tr>
<td></td>
<td>PARIS Audio</td>
<td>Los Angeles, CA</td>
<td>(213) 820-1397</td>
</tr>
<tr>
<td></td>
<td>Stereo Plus</td>
<td>San Francisco, CA</td>
<td>(415) 861-1044</td>
</tr>
<tr>
<td></td>
<td>Stereo Design</td>
<td>San Diego, CA</td>
<td>(619) 573-0060</td>
</tr>
<tr>
<td></td>
<td>Stereo Showcase</td>
<td>Vallejo, CA</td>
<td>(707) 552-1515</td>
</tr>
<tr>
<td></td>
<td>Sacramento</td>
<td>Sacramento, CA</td>
<td>(916) 483-5141</td>
</tr>
<tr>
<td>Colorado</td>
<td>Soundings</td>
<td>Denver, CO</td>
<td>(303) 759-5505</td>
</tr>
<tr>
<td></td>
<td>Technical Sales</td>
<td>Denver, CO</td>
<td>(303) 747-3989</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Hi Fi Stereo Consulting</td>
<td>Danbury, CT</td>
<td>(203) 749-0311</td>
</tr>
<tr>
<td></td>
<td>Roberts Audio/Video</td>
<td>New London, CT</td>
<td>(203) 749-0311</td>
</tr>
<tr>
<td></td>
<td>The Audio Store Inc.</td>
<td>Rocky Hill, CT</td>
<td>(203) 257-3232</td>
</tr>
<tr>
<td>Florida</td>
<td>Audio Distinction</td>
<td>Pensacola, FL</td>
<td>(904) 478-3736</td>
</tr>
<tr>
<td></td>
<td>Electronic Creations</td>
<td>Altamonte Springs, FL</td>
<td>(407) 831-1010</td>
</tr>
<tr>
<td></td>
<td>House of Stereo</td>
<td>Jacksonville, FL</td>
<td>(904) 642-6677</td>
</tr>
<tr>
<td></td>
<td>Stereo By Design</td>
<td>Miami, FL</td>
<td>(954) 232-1812</td>
</tr>
<tr>
<td>Georgia</td>
<td>Hill Blues Atlanta</td>
<td>Buckhead (404) 261-4434</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cumberland Mall</td>
<td>(404) 432-2227</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Northlake</td>
<td>(404) 938-4434</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perimeter Mall</td>
<td>(404) 394-8272</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sandy Springs</td>
<td>(404) 843-3900</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hill Blues</td>
<td>GA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smyrna</td>
<td>(404) 333-9932</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Athens</td>
<td>GA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marietta</td>
<td>GA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music Audio Marietta</td>
<td>GA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Music Room</td>
<td>GA</td>
<td></td>
</tr>
<tr>
<td>Hawaii</td>
<td>Honolulu Audio &amp; Video</td>
<td>Honolulu, HI</td>
<td>(808) 973-3311</td>
</tr>
<tr>
<td>Illinois</td>
<td>Chicago Speakerworks</td>
<td>Chicago, IL</td>
<td>(312) 796-5640</td>
</tr>
<tr>
<td></td>
<td>Columbia Audio</td>
<td>Highland Park, IL</td>
<td>(708) 433-6010</td>
</tr>
<tr>
<td></td>
<td>Rockford</td>
<td>IL</td>
<td>(815) 282-9220</td>
</tr>
<tr>
<td></td>
<td>Chicago Audio</td>
<td>IL</td>
<td>(312) 249-9600</td>
</tr>
<tr>
<td></td>
<td>Arlington Hills</td>
<td>IL</td>
<td>(708) 394-4770</td>
</tr>
<tr>
<td></td>
<td>Interior Sound Designs</td>
<td>East Peoria, IL</td>
<td>(309) 696-7200</td>
</tr>
<tr>
<td></td>
<td>Paul Heath Audio</td>
<td>Chicago, IL</td>
<td>(312) 549-8110</td>
</tr>
<tr>
<td></td>
<td>Rosine Audio</td>
<td>Skokie, IL</td>
<td>(708) 677-0050</td>
</tr>
<tr>
<td>Idaho</td>
<td>Infinite Audio</td>
<td>Ketchum, ID</td>
<td>(208) 726-9626</td>
</tr>
<tr>
<td>Iowa</td>
<td>The Audio Room</td>
<td>Marion, IA</td>
<td>(319) 373-1727</td>
</tr>
<tr>
<td>Kansas</td>
<td>Golden Stereo</td>
<td>Prairie Village, KS</td>
<td>(913) 646-3790</td>
</tr>
<tr>
<td>Louisiana</td>
<td>Art Colley's Audio</td>
<td>Baton Rouge, LA</td>
<td>(504) 926-0244</td>
</tr>
<tr>
<td></td>
<td>Specialists</td>
<td>Audio Metairie, LA</td>
<td>(504) 885-6988</td>
</tr>
<tr>
<td>Maine</td>
<td>New Music Electronics</td>
<td>Scarborough, ME</td>
<td>(207) 883-4173</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Carfre Audio Video</td>
<td>Pembroke, MA</td>
<td>(617) 934-6176</td>
</tr>
<tr>
<td></td>
<td>Safe &amp; Silent</td>
<td>Chickopee, MA</td>
<td>(413) 594-5600</td>
</tr>
<tr>
<td>Michigan</td>
<td>Classic Stereo &amp; Video</td>
<td>Grand Rapids, MI</td>
<td>(616) 857-2100</td>
</tr>
<tr>
<td></td>
<td>Classic Stereo &amp; Video</td>
<td>Portage, MI</td>
<td>(616) 324-0665</td>
</tr>
<tr>
<td></td>
<td>Contemporary Audio</td>
<td>Lansing, MI</td>
<td>(517) 321-6288</td>
</tr>
<tr>
<td></td>
<td>Gramophone Co.</td>
<td>Birmingham, MI</td>
<td>(313) 642-9777</td>
</tr>
<tr>
<td></td>
<td>West Bloomfield</td>
<td>MI</td>
<td>(313) 626-0940</td>
</tr>
<tr>
<td></td>
<td>The Sound Room</td>
<td>Traverse City, MI</td>
<td>(616) 947-4710</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Audio Perfection</td>
<td>Minneapolis, MN</td>
<td>(612) 886-0083</td>
</tr>
<tr>
<td></td>
<td>Audio/Video Designs</td>
<td>Minneapolis, MN</td>
<td>(612) 932-9414</td>
</tr>
<tr>
<td>Missouri</td>
<td>Great St. Louis Sound</td>
<td>Co. St Louis, MO</td>
<td>(314) 993-0002</td>
</tr>
<tr>
<td>New York</td>
<td>Altair Audio</td>
<td>Albany, NY</td>
<td>(518) 452-3525</td>
</tr>
<tr>
<td></td>
<td>American Audiphile</td>
<td>Lynbrook, NY</td>
<td>(516) 360-1990</td>
</tr>
<tr>
<td></td>
<td>Audio Den</td>
<td>Lake Grove, NY</td>
<td>(513) 360-1990</td>
</tr>
<tr>
<td></td>
<td>Audio Nouveau</td>
<td>Liverpool, NY</td>
<td>(716) 394-6180</td>
</tr>
<tr>
<td></td>
<td>Gordon Electronics</td>
<td>Syracuse, NY</td>
<td>(315) 446-9440</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Woodbridge Stereo</td>
<td>Woodbridge, NJ</td>
<td>(201) 636-7777</td>
</tr>
<tr>
<td></td>
<td>Classic &amp; Video</td>
<td>Portage, MI</td>
<td>(616) 324-0665</td>
</tr>
<tr>
<td></td>
<td>Contemporary Audio</td>
<td>Lansing, MI</td>
<td>(517) 321-6288</td>
</tr>
<tr>
<td></td>
<td>The Gramophone Co.</td>
<td>Birmingham, MI</td>
<td>(313) 642-9777</td>
</tr>
<tr>
<td></td>
<td>The Sound Room</td>
<td>Traverse City, MI</td>
<td>(616) 947-4710</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Audio Advice</td>
<td>Raleigh, NC</td>
<td>(919) 829-9221</td>
</tr>
<tr>
<td></td>
<td>Southern Heidi</td>
<td>North Carolina</td>
<td>(703) 483-5730</td>
</tr>
<tr>
<td></td>
<td>Audio Shop</td>
<td>Hanover, NH</td>
<td>(603) 643-4545</td>
</tr>
<tr>
<td>Ohio</td>
<td>Audio Etc.</td>
<td>Dayton, OH</td>
<td>(513) 429-4434</td>
</tr>
<tr>
<td></td>
<td>Golden Gramophone</td>
<td>Akron, OH</td>
<td>(216) 864-4411</td>
</tr>
<tr>
<td></td>
<td>Progressive Audio</td>
<td>Columbus, OH</td>
<td>(614) 299-0555</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>The Phonograph Ltd.</td>
<td>Tulsa, OK</td>
<td>(918) 665-6833</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Bryn Maw Stereo</td>
<td>King of Prussia, PA</td>
<td>(215) 277-2812</td>
</tr>
<tr>
<td></td>
<td>Carlen Audio</td>
<td>Bethlehem, PA</td>
<td>(215) 866-0728</td>
</tr>
<tr>
<td></td>
<td>Soundex Electronics</td>
<td>Willow Grove, PA</td>
<td>(215) 659-8815</td>
</tr>
<tr>
<td></td>
<td>Summit Audio &amp; Video</td>
<td>Kingston, PA</td>
<td>(717) 283-2770</td>
</tr>
<tr>
<td></td>
<td>The Stereo Shoppe</td>
<td>Silverings, PA</td>
<td>(717) 374-0150</td>
</tr>
<tr>
<td>South Carolina</td>
<td>Read Brothers</td>
<td>Charleston, SC</td>
<td>(803) 733-2767</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Opus 2</td>
<td>Memphis, TN</td>
<td>(901) 682-2455</td>
</tr>
<tr>
<td>Texas</td>
<td>Audio Concepts</td>
<td>San Antonio, TX</td>
<td>(512) 699-3333</td>
</tr>
<tr>
<td></td>
<td>Audivideo College</td>
<td>Station, TX</td>
<td>(409) 696-5719</td>
</tr>
<tr>
<td></td>
<td>Beacon Sound</td>
<td>Beaumont, TX</td>
<td>(409) 866-8684</td>
</tr>
<tr>
<td></td>
<td>Autumn Audio Concepts</td>
<td>Austin, TX</td>
<td>(512) 451-5736</td>
</tr>
<tr>
<td></td>
<td>Dallas Audio Concepts</td>
<td>Dallas, TX</td>
<td>(214) 360-9520</td>
</tr>
<tr>
<td></td>
<td>Houston Audio Concepts</td>
<td>Houston, TX</td>
<td>(713) 527-0774</td>
</tr>
<tr>
<td>Utah</td>
<td>Salt Lake City</td>
<td>Salt Lake City, UT</td>
<td>(901) 467-5918</td>
</tr>
<tr>
<td>Vermont</td>
<td>Audio Distinctions</td>
<td>Burlington, Vt.</td>
<td>(703) 818-8001</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Hi-Fi Green</td>
<td>Green Bay, WI</td>
<td>(414) 437-8727</td>
</tr>
<tr>
<td></td>
<td>Salon One Audio</td>
<td>Wisconsin Rapids, WI</td>
<td>(715) 421-5910</td>
</tr>
</tbody>
</table>
The Mirage M-1s have garnered their fair share of raves from the industry. They've invoked such comments as "I'm completely bonkers over this product..." and "The M-1 is and will be for many people their absolute reference."

Upon first listen, most people are astonished by their sonic transparency. The speakers virtually seem to disappear. In our view, that's the mark of a good loudspeaker.

We've extended that philosophy to the Mirage 60-Series loudspeakers as well. Each reflects an overall concern for naturalness, genuine musicality and transparency.

Like the M-1s, they're designed for optimum dispersion. The perceived sound stage is dramatically extended without compromising center imaging. The specially-designed woofers reproduce low frequencies with undaunted accuracy.

The mark that Mirage has made on the audiophile world is substantial. From the flagship M-1s to the wide range offered by the Mirage 60-Series, you simply can't do better. Just give them a listen. You'll hear what we mean.

For a free booklet of M-1 reviews from seven leading audio publications, write us or see your Mirage dealer.
UNSURPASSED PERFORMANCE

When you hear the astounding difference Tiffany products make in your audio system you’ll appreciate why we are known for quality products.

Whether your needs are for a line conditioner, passive electronics, interconnects, or power cords, you’ll find that Tiffany can make the sonic difference.

Tiffany line conditioners are sold in New York City exclusively at: Sound by Singer, 18 E.16th St., New York, NY 10003, (212) 924-8600.

THE CRITICS CHOICE
US: Peter W. Mitchell

The digital audio disc is ubiquitous—CDs, laserdiscs, CD-ROM, and other formats in the wings (CD-I, CD-R). So is digital tape—not just one system, but many: R-DAT, DCC, DMR, several VCR-based formats, and professional open-reel systems. What's missing? The third medium—radio.

Historically, whenever a new disc recording format came along, a broadcasting system of comparable fidelity arose at about the same time. With the 78rpm shellac disc we had AM radio. The arrival of the vinyl microgroove LP in 1949 was accompanied by the rise of FM radio. When the LP converted to stereo a decade later, it was followed within five years by stereo FM. But as we enter the second decade of the digital disc, we have no digital broadcasting; we're still listening to 1963 radio technology.

The obstacles to digital radio are not technical, but political and economic. The technology is already in place to distribute digital audio nationally via satellite relays to the cable systems that are wired to more than half the nation's homes and apartments. When television signals—network broadcasts as well as cable-TV services like CNN and HBO—are distributed from coast to coast, their stereo sound is transmitted in digital form to your local TV station or cable system, where it is converted into the MTS analog FM that VCRs and TV sets are equipped to handle. A few FM stations, like Chicago's WFMT, also distribute their programs nationally via digital satellite relay.

But if you want to hear these without sonic compromise, you must bypass your local cable system and receive the satellite signals directly—if you can. That may not be easy: there are problems of cost (usually $2000+), practicality (a motorized 12' dish antenna is too big to sit on a balcony and too ugly for the front lawn), and law (some communities forbid them).

For several years three companies have been working on schemes to deliver digital radio signals to cable-wired homes via a spare cable TV channel. Using proven methods of digital compression to reduce the bit rate, several digitally encoded audio programs can be combined in one satellite video channel, relayed to home via cable, then unscrambled and decoded at home without the quality impairments that cable systems impose on analog audio signals. These systems were described here in November 1988 and March 1989. But progress is agonizingly slow; to date, only a handful of cable companies have signed up to carry this type of digital radio.

These proposals would establish nationwide digital radio services, similar in principle to TV networks or cable-TV programs. Whether they reach homes via cable or through a small satellite dish, any nationwide digital radio service is regarded as a threat to the present system of locally owned and operated FM stations, which make a nice profit selling commercial time to local businesses. The National Association of Broadcasters, a trade group that represents the thousands of local stations, decided that the smart way to deal with this threat is to co-opt it.

About a year ago European developers unveiled a DAB (digital audio broadcasting) system that uses a bit-rate reduction scheme similar to that in the Philips DCC (digital compact cassette). One of several "Eureka" research projects and described elsewhere in more detail by Robert Harley, it was designed to work both as a nationwide direct-to-home satellite service (using compact 3' dish antennas), and through locally controlled transmitters whose signals are said to be uniquely immune to multipath interference.

The NAB leapt at the latter, seeing it as the potential savior of the lucrative local broadcasting business. The NAB's announced goal is to manage and control digital radio in the US—by acquiring exclusive North American licensing
Unique solutions are likely to emerge from those with a unique perspective on the nature of the problem to be solved.

By applying engineering and manufacturing techniques normally reserved for telecommunications and aerospace technologies, Wadia's transports, digital to analogue converters, and the transmission system between them, retrieve more of the subtle nuances of the acoustic wavefronts encoded on the compact disk.

Products like the Wadia WT-3200 transport and X-64.4 converter are decidedly non-conformist in design, and as a result have proven singularly musical in performance.

Hear them for yourself at an authorized Wadia Dealer.
rights to Eureka DAB technology, by persuading the FCC to certify the Eureka system as the official US standard for digital radio, by opposing any and all satellite-to-home digital radio services, and by licensing Eureka DAB technology in ways that would make it easy for existing station owners to add digital radio to their AM and FM operations.

It’s tempting to conclude that the NAB’s priority is neither to make digital radio available as quickly as possible, nor to encourage entrepreneurs to provide the finest sound quality and greatest program variety in order to serve the needs of diverse audiences, but simply to manage the growth of digital radio so as to maximize the profits of the NAB’s membership of AM and FM station owners.

But the NAB may not get its way. Under the Bush administration, the FCC is not inclined to impose a single DAB standard on the country; they’d rather “let the marketplace decide.” In order to gain enough spectrum space to enable every one of the 9000 AM and FM station owners to add a companion DAB operation, the NAB wants digital radio transmitters to operate at L-band frequencies (around 1500MHz), instead of the low-UHF frequencies that the Eureka system was designed for in Europe.

That would sacrifice a basic Eureka advantage—the ability to cover a large receiving area from a cheap low-power transmitter, thus allowing station owners to serve special-interest audiences (with jazz or classical music, for example) without losing money. To overcome atmospheric losses, L-band stations would require a costly high-power transmitter (and so would have to tailor their programming to attract mass audiences and big advertising budgets), or multiple transmitters spaced a few miles apart (whose signals may cancel each other out in some areas.) All of which has led engineers to demand that the NAB should thoroughly test its L-band idea before trying to make it the official standard.

Regardless of the outcome of this debate, DAB faces other political obstacles that may delay its general availability. For example, the record industry, assuming as always that any higher-fidelity medium will stimulate more illicit home taping and cut into sales of new records, wants laws to prohibit album-length digital broadcasts and to require subcodes in digital radio that would trigger the SCMS copy-control circuits in digital tape recorders. Stay tuned.

US: John Atkinson

The RIAA recently released US record-industry sales statistics for 1990. 1990 was apparently the industry’s best year ever—what price home-taping now, RIAA?—with the year’s gross sales (including the rapidly expanding music video market) worth an awesome $7.54 billion! I find it significant that while CD sales climbed from 207.2 million units in 1989 to 286.5 million units in 1990 (the latter worth some $3.45 billion), prerecorded cassette sales remained static, with a total of 442.2 million units sold (worth $3.47 billion) in 1990. And the LP? Sales of LPs and 12” singles added up to just 11.7 million units last year, this worth a still substantial $86.5 million, almost as much as was spent on 45rpm singles. (Cassette singles outsold disc singles by a factor of 3:1, however.)

In its April 1 issue, the trade magazine Audio Week analyzed the RIAA’s figures for market share of album-length recordings—the kind you and I buy. These are shown in Table 1. While the proportion of album sales on cassette appears to have effectively remained constant throughout the last seven years (with a slight

Table 1

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LPs</td>
<td>33.7%</td>
<td>31.6%</td>
<td>24.0%</td>
<td>17.3%</td>
<td>10.8%</td>
<td>5.1%</td>
<td>1.6%</td>
</tr>
<tr>
<td>CDs</td>
<td>1.1%</td>
<td>4.3%</td>
<td>10.1%</td>
<td>16.5%</td>
<td>22.3%</td>
<td>30.1%</td>
<td>38.7%</td>
</tr>
<tr>
<td>Cassettes</td>
<td>61.2%</td>
<td>64.1%</td>
<td>65.9%</td>
<td>66.2%</td>
<td>67.0%</td>
<td>64.9%</td>
<td>59.7%</td>
</tr>
</tbody>
</table>

Source: Audio Week, Vol.3 No.13, April 1, 1991.
In the beginning is music.
It grows from silence deep as thought itself. Images sparkle and disappear with quicksilver speed. Bathed in a crystalline sea of pure sound, you yield to surging currents of music.

Through Martin-Logan's exclusive electrostatic technology, music is recreated. Flawless in every nuance and fine detail, whisperquiet, lightningquick, thunderloud. And always, with pristine transparency.

**Challenge:** Create a speaker diaphragm light enough to play 20,000 Hz yet powerful enough to play 100 Hz, thus eliminating crossovers and achieving a pure wavelaunch, absolute phase linearity and group delay characteristics approaching zero.

**Solution:** A diaphragm lighter than one cubic inch of air. Over more than three years, Martin-Logan developed a vapor-deposition system that imprints a conductive coating only 20 atoms thick onto an ultrafine polyester film.
peak in 1987 and '88), LPs represented just 1.58% of sales in 1990, compared with 33.7% in 1984. I guess those of us who feel that LP still offers the most musically natural experience should feel proud that our purchases still reached above 1% of the total sales. With the virtual disappearance of the LP from traditional retailers' racks, however, it is hard to see how any LPs will be bought in 1991, apart from those sold by the rapidly burgeoning mail-order operations. Over the next few issues, Stereophile will be looking at the business of LP retailing in some depth.

US: Peter W. Mitchell

The Finial Laser Turntable is something of a holy grail for audiophiles—a system that plays analog LPs using only light beams, with no friction or groove wear. But when it finally appeared a couple of years ago it proved a disappointment on several grounds: 1) It was absurdly expensive, with a suggested retail price of $32,000. 2) The optical tracking head, a small and complicated nest of lasers, mirrors, and detectors, proved unexpectedly difficult to manufacture and align; a third of the first production batch of turntables didn't work. 3) A test report in the May 1990 issue of Hi-Fi News & Record Review revealed a serious rolloff in the highs. 4) Tacks and pops were even more annoying with the Laser turntable than with a mechanical stylus. 5) The manufacturer, CTI, went bankrupt and ceased operations last year, taking down with it the home-audio division of dbx electronics. A Japanese affiliate acquired the design rights and has continued to produce and sell the Finial turntable in small quantities, mainly to professional users (libraries, studios, radio stations).

As an audiophile product, the Finial laser turntable seemed a dead issue. But a sharp-eyed Los Angeles reader, Steve Setto, spotted a classified ad in the back pages of the March issue of this magazine, offering Finial laser turntables for less than $15,000. Inquiry revealed that what is being offered is not the original Finial but a second-generation product that was substantially redesigned by the Japanese manufacturer, ELP, which acquired CTI's patents. ELP sells the all-new version for 3 million yen, about $22,000 at the current exchange rate. Andy Obst, an audiophile and an engineer at Los Alamos (the New Mexico lab where the atomic bomb was developed nearly a half-century ago), is selling older Finials that have been completely rebuilt by ELP.

ELP's upgrades include: 1) an optional 78rpm speed; 2) the ability to play 7" 45s singles as well as 10" and 12" LPs; 3) revamped circuitry that now occupies only a single pcb, with test points added that simplify alignment and servicing; and 4) relocation of the power supply to an external box, taking the weight of the transformer off the turntable's suspension springs. ELP has also perfected the process of manufacturing the optical head with consistently correct alignment.

According to Bob Stark, co-designer of the Finial, these changes have improved the turntable's reliability. He also says that the turntable's response is flat to beyond 20kHz; the high-frequency rolloff in the HFN/RR review was caused by an alignment error. (That early sample of the turntable was used for CES demonstratious and was forwarded to England but was not intended to be reviewed.) Obst confirms that his ELP-rebuilt Finials measure flat on a test record.

In a nutshell, although its original manufacturer is bankrupt and gone, the Finial laser turntable lives on—with a lower price and apparently improved performance over its original incarnation. Of course, if something goes wrong you may have to send the turntable back to Japan for repair; evidently that is neither a frequent problem nor as impractical as it may seem. The tick-and-pop problem remains; records should be cleaned before play in a Nitty-Gritty or similar machine, and with non-mint-condition discs you may also want to use a noise blanker—a Burwen/KLH Transient Noise Eliminator or the $2500 Packburn unit. For fur-
Absolute excellence in sound. MIRROR IMAGE AUDIO has created a line of distinctively different amplifiers, preamplifiers and phono modules - equipment so remarkable that the listening experience defies description. Our equipment is designed with one intent - to allow you to capture the essence of music. Discover absolute excellence in sound.

Write, call, or fax for more information.

.2P PREAMPLIFIER .2P PHONO MODULE
ther information, call Andy Obst at (505) 662-1415 (home) or 667-1330 (work).

Canada/US: Dick Olsher
To judge from the brisk sales of the cryogenically treated *Stereophile* Test CD during January’s WCES, the $2 surcharge did not in the least deter business and stock quickly ran out. On the face of it, this would seem to indicate a wide acceptance of the claims made for this technology. During my stopover at the Museatex exhibit at the Mirage Hotel, I learned quite a bit more about the cryogenic treatment of CDs. According to a fascinating brochure, Museatex Cryogenics, Inc., was formed as a partnership between Museatex and a Dr. Levine of MIT to patent and market the use of the cryogenic process in audio, microwave, and semiconductor applications. Dr. Levine has patented a system for cryogenic treatment of materials that is said to allow a material’s altered crystalline structures to be retained at room temperature. The process has apparently been used for several years by musical instrument manufacturers. Powel Flutes and Kamal Musical String Co. have found acceptance for cryogenically treated flutes and guitar strings among famous musicians.

As far as application to CDs goes, the CD is slowly lowered to liquid-nitrogen temperature at a prescribed rate over several hours, then slowly returned to ambient temperature. That the structure of a CD’s substrate is altered at the crystalline level is fairly clear; why this should make an audible difference is not. Yet some, including our own Bob Harley, have heard audible improvements.

The idea that the structure of the substrate could somehow influence the sound pushed me toward trying a different tack. Being a radiation physicist naturally prompted me to wonder about the sonic effect of Gamma rays on CDs. Massive doses of Gamma rays are routinely used to sterilize surgical instruments and hospital supplies. Could Gamma rays be used to “sanitize” the sound of a CD? Before you dismiss this as a mad scientist’s scheme to nuke CDs, please consider that this makes about as much sense as “freezing” them. It’s well known that penetrating ionizing radiation such as Gamma rays is capable of inducing crystalline changes. Color change in salts is one such example. You should know that I am presently pursuing such work. My preliminary results are quite encouraging, and suggest that a massive gamma dose on the order of 50,000 rads results in a sonic enhancement, inner-detail resolution and soundstage transparency being the main beneficiaries. This is far beyond what is considered to be a lethal dose to humans. In fact, such a dose delivered very quickly to a human being would result in the immediate collapse of the individual with certain death in about 24 hours. To put it into perspective, such a dose is roughly equivalent to 2.5 million chest X-rays delivered in rapid succession. CDs, as they are clearly inhuman, do not seem to mind such doses. I intend to report fully on this when my experiments are completed! Please stay tuned to the Great Gamma Ray Experiment of 1991.

US: Peter W. Mitchell
The folks at Digital Systems, purveyors of CD accessories, have found another wrinkle in CD playback—one that may be of special interest to people who do product evaluations or A/B comparisons. In such tests people often use the quick-track-access facilities of the CD player. For example, if you were trying to evaluate the effect of a CD damping disc or ring, you might start by putting in an untreated disc that you know well, skip to track 4, press Play, and listen; then stop, install the damper on the CD, put it back in the player, skip to track 4 again, and listen for a difference. When judging amplifiers, you might listen to a selected track through one amp, skip back to the beginning of the track, and listen to the same selection again through another amp.

What some people have noticed with some players is that, when you jump to a new track and go immediately into play, the sound loses a bit of air and detail—precisely the subtle

---

1 Readers with access to gamma-ray sources who rush to treat their CDs should remind themselves what happens to a polyethylene bag left in the sun for a couple of weeks. Hitting any plastic material with radiation certainly does change its structure—it breaks up the polymer chains, the eventual result being dust!

—JA

Stereophile, June 1991
When it comes to great audio, we're not afraid to cut corners.

What’s true in life is true in loudspeakers: If you don’t keep an open mind to new ideas you’ll end up pretty square, like most speakers in the world.

At NHT® we’re obsessed with great sound and the technology that creates it. That’s why our speakers are angled at 21 degrees. It’s part of an acoustic technology called Focused Image Geometry. It’s one reason our unusually shaped speakers give you exceptionally accurate sound.

An example of better thinking going in, and better sound coming out. That’s our angle.

EVERYTHING YOU HEAR IS TRUE.

Now Hear This, Inc., a subsidiary of International Jensen Incorporated, 537 Stone Rd., #E, Benicia, CA 94510
For the NHT dealer nearest you: (U.S.) call 1-800-NHT-9993; (Canada) Artech Electronics Ltd., Dorval, Quebec H9P 2S4

Stereophile, June 1991
characteristics that you want to hear when judging a CD damper or a new amplifier. To avoid confusion, when you skip to a new location on the disc, press Pause and wait 30 seconds for the player to stabilize before proceeding.

Two things happen when you use the track-skipping function of a CD player:

1) The optical pickup (containing the laser, lens, and detector) moves to a new location on the disc and stops abruptly at the beginning of the desired track. The combination of rapid motion and abrupt stop may cause some slight vibration of the pickup, especially in players that use a Philips-type mechanism in which the pickup is mounted at the end of a swinging arm. Such vibration could produce a temporary deterioration of the "eye" pattern of the detector's RF signal, increasing the timing jitter or error rate of the digital code.

2) When the optical head stops at its new location, the tracking and focus servos produce large correction signals to center the lens on the new track, and the motor servo must alter the drive speed. Recall that, in order to scan the pits past the pickup at a constant linear velocity (CLV), the rotational speed of the CD must vary from 500rpm for the first track, near the center of the disc, to 200rpm for the last track near the rim. Servos often overshoot the desired value of speed or position, then over-correct, oscillating briefly around the correct setting. If imperfect electrical design allows servo currents to intermodulate with audio signals, sound clarity may be impaired.

France: Robert Harley
The next best thing to a crystal ball for looking into audio's future is attending the Audio Engineering Society conventions held twice a year (one US, one abroad, usually Europe). The technical paper presentations and workshops reveal the kinds of leading-edge research that are likely to produce real-world changes in audio reproduction several years from now. Ideas and experiments that are today's laboratory curiosities may find applications in tomorrow's products. Although the more theoretical and arcane topics are unlikely to affect future products in the foreseeable future, it's fascinating to get a glimpse of the kinds of fundamental research being conducted in audio recording and reproduction.

I attended the 90th Audio Engineering Society Convention, held in Paris on February 19–22. As Stereophile's roving reporter, I sat in on the papers sessions, workshops, and visited the product exhibits. Although the Paris convention had the largest number of exhibitors of any European AES, it was nevertheless dwarfed by those in Los Angeles and New York. However, the most interesting aspect of any AES convention—the technical papers—are usually of greatest significance at the European conventions. Most of the basic research into psychoacoustics appears to be done in Europe, a fact reflected by the number and quality of European papers on this subject.

Perhaps the most enlightening event of this AES convention was a three-hour workshop on Digital Audio Broadcasting (DAB), a system designed to replace today's FM radio transmission. Representatives from the companies and research institutes involved in DAB development were on a panel, each discussing his particular area of expertise. All aspects of DAB were described, including DAB receiver hardware design, listening tests, transmission of DAB, and even how particular stations will be identified to the consumer.

In DAB, a satellite transmits many stations' digitally encoded signals to consumers' home, car, and portable DAB receivers. Areas shadowed by buildings, mountains, and other obstructions will be filled in by terrestrial transmitters. DAB has many advantages over FM broadcasting, including freedom from multipath problems, adjacent-channel selectivity concerns, drift, and other radio gremlins. These advantages are particularly important in mobile environments like car stereo. DAB also provides an opportunity to transmit digital data for visual display on consumers' receivers. Weather and traffic information, for example, could be broadcast without interfering with the audio program. Finally, DAB breaks free of the constraints of an already overloaded FM bandwidth.

DAB's introduction is scheduled for 1995, but is not expected to completely replace conventional radio broadcasting for another 10 to 15 years. DAB will duplicate existing FM sources during this transition, facilitating the gradual replacement of what must be hundreds of millions of radio receivers in the Western world.
"...an extraordinary achievement in speaker-making."

—Larry Archibald. Stereophile June 1990 Vol. 13 No. 6

The THIEL CS5

The THIEL CS5 loudspeaker is a precision instrument uncompromisingly engineered to provide the most realistic music reproduction possible. It provides extreme accuracy of tonality, spatial imaging, dynamic range and clarity of musical detail. The CS5 enables you to experience all of the music's subtle nuances, delicate shadings of musical timbre, and a natural, three-dimensional spaciousness... a feeling of complete musical realism.

- Extremely accurate frequency response: 23Hz - 20kHz ±1dB
- Coherent Source design: Complete time and phase coherence
- Point source radiation pattern
- Very low energy storage
- Very deep bass response: -3dB @ 20Hz
- Cast marble baffle: Very low diffraction
- Extremely high quality, innovative driver design

Suggested Retail: $4920 • Call or write for literature, reviews and the name of your nearest THIEL dealer.

1042 Nandino Boulevard Lexington, Kentucky 40511 • Telephone: 606-254-9427
DAB receivers are reportedly as cheap as or cheaper to manufacture than FM receivers, with their digital circuitry condensed into VLSI (Very Large Scale Integration) chips. However, all DAB receivers will need integral digital/analog converters, perhaps fueling the development of really cheap DACs.

An intense research effort is underway in Europe to develop and implement DAB. The project is a joint venture between several of Europe's largest electronics manufacturers (Philips, Thomson, etc.) and broadcasters (BBC, Radio France, etc.) under the auspices of the European Broadcasting Union (EBU) and the European Community's Eureka project. There is an unusual level of cooperation between competing companies in developing DAB, presumably because it is far too great an undertaking for any single company. In addition, standards will be easier to implement, and the format's success is much more likely with everyone on the same team.

Because satellite bandwidth is both limited and expensive, DAB is made economically feasible by a new scheme for reducing the amount of data in a digital audio signal. These so-called "bit-rate reduction" or "data compression" systems rely partly on a more efficient encoding system, but primarily by throwing out information said to be masked by other sounds. Several competing bit-rate reduction systems are now under evaluation for DAB use. Among these are ASPEC (Adaptive Spectral Perceptual Entropy Coding), and Musicam, both of which use a data rate of 128kbs (kilobits per second) per monaural channel. For comparison, normal PCM digital audio as found on the Compact Disc uses 705,600 bps per monaural channel. Data rates as low as 64kbs/ch are being discussed. The Canadian Broadcasting Company has made trial broadcasts with terrestrial transmitters using the Musicam system. In the US, the National Association of Broadcasters (NAB) has endorsed the Eureka "149" system, which also uses a data rate of 128kbs/ch.

After presentations by each panel member, the hour allocated for discussion and questions from the audience turned into a lively debate on the potential problems of the proposed data-compression systems—systems without which DAB would be a dead issue. Many in the audience raised concerns about bit-rate reduction applied to DAB, with staunch rebuttals from panelist G. Plenge, leader of a group working on data compression.

Throughout the presentations and discussions, the word "transparent" was frequently used to describe the alleged inaudibility of 128kbs data-compression schemes. Louis Fielder of Dolby Labs, a leading researcher in data compression, raised a good point. He stated emphatically that the word "transparent" means the encoding/decoding system is not detectable by any listener under any conditions with any program material. Since we don't know this is true, he asserted, the word "transparent," with all its implications, should be avoided in discussions of data compression.

Another audience member brought up the problems encountered in multiple encoding/decoding cycles in the broadcast chain, as well as the effects of signal-processing devices on the signal—a signal that has been made quite susceptible to audible artifacts if the playback conditions vary from those used in laboratory listening tests. One audience member recounted how, in an unrelated study, she counted 50 signal-processing devices (compressors, expanders, equalizers, Harmonizers, etc.) in a broadcast chain.

It was reported that 60 listeners were used in the formal evaluation of ASPEC (15 of them were engineers involved in design), and that the more highly trained listeners were better at detecting flaws. The listening panel concluded that ASPEC was not transparent when compared to a CD source. The previously mentioned proponent of bit-rate reduction, G. Plenge, responded with an odd argument: "Hearing differences isn't always a quality loss." The debate was so lively that when the allotted time was more than up, the ushers became frustrated at their inability to clear the auditorium—no one would leave. The conversations were moved to the hallways, where I had an opportunity to meet Michael Gerzon. He had already sounded warnings of data compression, and later presented a paper that suggested the proposed data-compression systems may

2 See "Industry Update" in April for a discussion of bit-rate reduction.
3 See last month's "As We See It" for an essay on why data compression is a step backward in the quest for better music recording and reproduction quality.
4 This is the same G. Plenge, I believe, who was lobbying a decade ago for CD to have an HF bandwidth limited to 15kHz on the grounds that only a few people could hear above that frequency.

Stereophile, June 1991
Music with the breath of life.

Until now, only vacuum-tube or hybrid amplifier technologies could deliver the vivid dimensionality and fine textures of living, breathing music. Solid-state amplifiers were a musical promise largely unfulfilled.

The new D240 stereo power amplifier from Audio Research changes the picture. Gloriously. At last, there is a solid-state amplifier to actually rival vacuum-tube designs in their ability to mimic the complex envelope of real instruments sounding in a real space.

Better yet, the D240 offers this stunning musicality in a mechanical enclosure that is compact, cool-running and maintenance-free.

Once you install the D240 in your home music system, you can sit back and forget everything but the music.

If you're a music lover who appreciates the glories of the vacuum tube, but wants to breathe easy when it comes to maintenance, the D240 is the promise of solid-state fulfilled. Best of all, it comes from the audio manufacturer with over 20 years of experience and leadership advancing the art and enjoyment of music reproduction: Audio Research.
be fundamentally flawed. I have a feeling that the workshop's contentious debate is a harbinger of future controversy over data-compression systems.

The papers sessions at this AES were quite interesting, with many papers devoted to the topics of psychoacoustics and subjective perception of sound.7 There seems to be a trend toward investigating perceptual aspects of audio, evidenced by the number of recent papers on psychoacoustic phenomena.

One paper investigated the subjective evaluation of loudspeaker directivity and the effects of early reflections, especially on soundstaging ability.6 A pair of loudspeakers was put in an anechoic chamber, and the missing boundary reflections were simulated with five pairs of additional loudspeakers (KEF C55s). The researchers could thus simulate a wide range of loudspeaker dispersion characteristics by contouring the additional speakers' responses and amounts of signal delay. The goal was to determine the optimum amount of off-axis radiation from a loudspeaker. The authors concluded that there was no clear preference for any of the various simulated loudspeaker directivities.

In a similar vein, a paper entitled "Differences in the Perceived Quality of Loudspeaker Sound Reproduction Caused by Loudspeaker-Room-Listener Interaction" sought to quantify the interactive effects of the loudspeaker/room/listener on perceived loudspeaker quality. The listener influence referred to is physical, not psychological, created by head- and ear-related transfer functions (a modification of the impinging signal induced by the human body's physical structure, which varies from person to person). Six trained listeners heard paired comparisons among five different pairs of loudspeakers (one listener at a time). They were asked to rate the loudspeakers in nine aspects using a 10-point scale. The nine quality criteria were clarity/definition, softness, fullness, brightness, general sound quality, stereo perspective, spaciousness, general spatial quality, and overall quality.

The listening tests were conducted twice.

The five pairs of loudspeakers were first rated by the listeners, then the loudspeakers were equalized to produce nearly identical 1/3-octave frequency spectra at the listening position (using a dummy head). By comparing the results of both tests, the author concluded that the perceived sound quality will be rated as approximately 90% identical if the loudspeakers are equalized to produce identical long-term 1/3-octave frequency spectra at the listening position.

Although the author acknowledges that this 90% figure may be somewhat high, it seems to me to be far too high. My interpretation of the paper's conclusion is that many aspects of loudspeaker performance—ability to resolve spatial detail, presence or absence of hardness, dynamic characteristics, and other important musical factors—represent only 10% of the perceived differences between loudspeakers if spectral differences are removed. I think asking subjects to rate nine different quality criteria on a 10-point scale is far too complex a task. With that much intellectual activity going on, how could the subjects concentrate on listening?

The most exciting work in music reproduction and human auditory perception is the Archimedes project, a mammoth and ambitious psychoacoustic research project funded under the European Eureka project. Archimedes is a joint effort among KEF, Bang & Olufsen, and the Acoustics Laboratory of the Technical University of Denmark. Three papers were presented describing the project's scope and technical details.

The first paper, presented by KEF's Richard Small, outlined the broad concepts of Archimedes. Listeners are placed in a chair suspended in the center of a very large anechoic chamber (26' high, 33' wide, and 39' long). The subject is surrounded by many small hidden loudspeakers which are fed signals processed to simulate room reflections. By adjusting the delay time, gain, and frequency response of the loudspeakers' drive signal, virtually any acoustic environment can be recreated in the anechoic chamber and listeners' responses gathered.

The subject is presented with a reference auditory stimulus with which he is familiar, then immediately the same stimulus with some change made. The change can be as simple as the gain of a particular reflection, or an overall change, such as would occur from a difference in loudspeaker directivity. By gathering data
At NRG
We Don’t
Weld Steel,
We Don’t
Break Rocks.
We Just Make
Beautiful Music.

For information on
power amps —
contact us.
(For information on
power tools —
contact our
competition.)

NRG Control, Inc.    P.O.Box 389    Walled Lake, MI 48390    U.S.A.
Fax: (313) 624-6670
on subjects’ responses to these changes, a broad yet detailed picture of the human hearing mechanism will emerge.

This work has practical implications in a variety of fields, especially the goal of recreating a concert hall in the home listening room. The knowledge gained in this project could one day be condensed into DSP algorithms incorporated into a consumer product.

One of the major tasks of the Archimedes project was developing the Digital Signal Processing (DSP) hardware and software that could control the signals fed to the loudspeakers. The DSP control system had to be fast enough to perform real-time signal processing as well as effect short reprogram times. This topic was the subject of two additional papers presented at the convention.

The Archimedes project is easily the most ambitious (and well-funded) attempt to understand human hearing as it relates to music reproduction. I look forward to reading about the ongoing results of this valuable and important work.

Several other papers involved subjective evaluation of audio signals, including “Depth Perception—Finding a Design Goal,” “Headphone Signal Processing for Out-of-the-Head Localization,” and “Binaural Simulation of an ‘Ideal Control Room’ for Headphone Reproduction.”

This last paper was of particular interest to anyone who has tried to evaluate sound quality or mix a recording in less than ideal environments or monitoring systems (virtually all remote recording falls into this category, as well as most studio control rooms). The paper details a method of creating a binaural simulation of an ideal control room through a pair of headphones with digital signal-processing techniques based on psychoacoustic discoveries, especially the field of three-dimensional hearing. This would allow the recording engineer to have an accurate monitoring reference no matter what the location. A second paper on headphone listening, entitled “Headphone Signal Processing System for Out-of-Head Localization,” described a method of using Digital Signal Processing to simulate in headphones the filtering effects of the pinna (outer ear), room response, and crosstalk present when listening in a free field.

There is also much interest in augmenting the natural reverberation in concert halls with "electroacoustic reverberation enhancement." This technique creates simulated room reflections with strategically placed loudspeakers (116 loudspeakers in one example), while killing unwanted natural reflections with absorbing material. The goal is to improve intelligibility and add warmth, while eliminating reflections that create confusion and degrade the sound of the hall. Papers presented on this topic included “Improving Room Acoustics Through Time-variant Synthetic Reverberation,” “An Electro-acoustical Concept for the Acoustics for Symphonic [sic] Music Outdoors,” and "Influence of Auditorium Reverberation on the Perceived Quality of Electroacoustic Reverberation Enhancement.”

A professor at the University of Paris gave a paper on a loudspeaker that works on the "corona discharge" effect and has no diaphragm or moving parts. The loudspeaker is reportedly highly accurate, functions as a pure acoustic pressure source, can reach high sound-pressure levels with great linearity, and—get this—can be driven by a digital signal!

Corona discharge occurs when two highly charged electrodes are placed near each other. The effect is increased by making one of the electrodes a series of needles pointed at the other electrode. If the electric field is high enough (tens of kV range), the air between the electrodes will become ionized, creating positive ions and free electrons. When accelerated by the electric field, these free electrons collide with atoms, setting free other electrons, which in turn ionize other atoms. This process, called electron avalanche, causes an "ionic wind" to flow between the electrodes, pressurizing the surrounding air. By modulating the high voltage current source, the air pressure is modulated, and voilà—a sound-pressure wave is created. Three electrodes form a push-pull arrangement, providing a means of reproducing a bipolar audio signal.

Because the loudspeaker's acoustic output is modulated by varying the current source, it can be driven by a digital signal. Conventional R-2R ladder DACs have a current source connected to the 16 "rungs" of a resistor ladder (in

7I used to prototype high-voltage power supplies in a semiconductor lab, where I became familiar with the corona effect. In very-high-voltage rectifiers, all solder joints must be round balls with no spikes or protrusions that would give electrons a "jumping off" point. If these and other precautions aren't followed, the corona discharge eventually breaks down the potting (insulating) material and causes premature failure of the part.
Sennheiser headphones.
A music lover's privilege.

If music is important in your life, Sennheiser has the headphones that recreate all the impact, all the emotion of the original performance. Whether it's Brahms or Bowie, Sennheiser products blend German craftsmanship with state-of-the-art engineering to create a new standard of listening pleasure.

Hear the Sennheiser difference at a dealer near you.
The French corona-discharge "quiet"-speaker

a 16-bit DAC). The DAC's current output thus represents the digital data input. In the corona discharge loudspeaker, the DAC's varying current output would modulate the current to the electrode, which in turn modulates the surrounding air pressure.

A demonstration was given with what was obviously an experimental laboratory unit. The loudspeaker was about the size of a shoebox and used an FM tuner as the signal source (the tuner just happened to pick up the great Weather Report tune "Port of Entry" from the Night Passage LP). The output from the loudspeaker was so low in this experimental unit that a microphone was put next to it so everyone in the auditorium could hear it. The signal was quite distorted because they couldn't get a high enough voltage outside the laboratory, but it did produce intelligible sound. Although interesting, don't look for a corona-discharge loudspeaker at the next Consumer Electronics Show. Incidentally, the loudspeaker produces ozone when the oxygen atoms are stripped of their electrons in generating the ionic wind. Ozone is health-threatening: ask Threshold's Nelson Pass, who ended up in a hospital after setting up a pair of ozone-producing speakers in a hotel room at a CES.

Stanley Lipshitz presented an interesting paper called "An Investigation of Sound Radiation by Loudspeaker Cabinets." He and his coworkers measured enclosure vibrations on three commercially available loudspeakers in an attempt to ascertain if loudspeaker cabinets produce audible colorations. The approach was to calculate the amount of radiated energy, rather than measure it directly. An array of accelerometers (between 71 and 89 devices) was attached to the loudspeaker, which was suspended in a cradle from the ceiling and driven by a Maximum Length Sequence (MLS) signal. The data obtained were fed to a computer running a program that computes the pressure surface distribution from the measured velocity distribution. The result was a series of cabinet-produced sound-pressure level vs frequency curves on each loudspeaker at various axes. The authors' research led them "to speculate that some cabinet sound radiation is either audible or close to the borderline of audibility."

Not surprisingly, the loudspeaker that had no special bracing would, according to the paper, "'ring' badly when subject to a 'knuckle rap test.'" When analyzed later, this loudspeaker showed "a profusion of large cabinet peaks and dips rising to within less than 20dB of its total output at some frequencies." Is this a vindication of the knuckle-rap test? Incidentally, they found that the accelerometer measurements varied significantly with the type of loudspeaker stand, type of feet, and feet position, leading them to suspend the loudspeaker during the measurements. Is this a vindication of spikes and Tiptoes? 78

A number of papers were presented on digital audio, the most interesting of which was Richard Cabot's "Noise Modulation in Digital Audio Equipment." (See the interview with Dr. Cabot in the January 1991 issue.) He proposes that measuring noise modulation in digital audio equipment gives far better correlation with subjective perception than traditional measurements. He found that even small linearity errors in D/A converters (a 1dB error at -90dB) can produce large shifts in the noise floor and, more importantly, the noise's spectral content. This change in spectral content was measured to be as great as 20dB at 1kHz—right where the ear is most sensitive. According to some research, 2dB shifts in the noise's spectral balance are audible.

The paper presents plots of linearity errors and the resultant noise modulation of different channels within the same multi-track digital

---

8 It's always an interesting test to sharply rap the top of a loudspeaker cabinet. The resultant "thud" is diagnostic in that it changes character according to the presence of spikes or Tiptoes, the design of the speaker stand, the presence or absence of damping material between the cabinet and the stand top plate, and the nature of the floor. However, I note from the April 1991 Stereo Review (p.62) that Julian Hirsch has "never found spikes to make the slightest difference in the sound of a speaker."

---JA
THERE ARE MANY OPINIONS ABOUT AUDIO CABLE

HERE ARE SOME FACTS ABOUT MIT®

- MIT has the most extensive research and development program in the audio cable industry.
- MIT holds more patents on audio cable technologies than any other cable company.
- MIT is the only cable company that can document cable performance through advanced instrumentation and testing techniques.
- MIT has the best selling premium performance audio cables.
- MIT is rated highest among cable manufacturers in customer satisfaction.*
- MIT applies premium performance audio cable technologies to cables that sell for as little as $1.50 per foot.
- MIT cables can be auditioned at home at no risk.

*According to Stereophile survey, Vol. 12, No. 2 (Feb. 1989)

MIT products are distributed by Transparent Audio Marketing
Rt. 202, Box 117  Hollis, ME 04042  Tel. (207) 929-4553  FAX (207) 929-4271
recorder. In addition to having generally poor performance, there are shocking variations within tracks of the same machine. And these are professional studio recorders used to make master recordings.

This kind of research is exactly what we need to find correlations between the sound of D/A converters and measurements. I’m eager to repeat the measurements when Stereophile acquires the DSP module for its Audio Precision System One to see if there is a correlation between noise modulation and certain perceptual qualities. Incidentally, the paper is an excellent primer on problems in D/A converters, measuring techniques, dither, and other aspects of digital audio. It is very accessible and recommended reading for anyone interested in digital audio.

“Some New Test Signals for Digital Audio” examined the problems of using sinewaves to test D/A converters and CD players. The author showed how sinewaves don’t exercise all the transitions levels in a DAC (65,536 levels in a 16-bit DAC) and can therefore conceal linearity errors. The authors proposed new test signals that exercise all levels in a DAC. In addition, they developed a new signal that reveals low-level nonlinearities by looking at the output signal spectrum.

Bob Adams, developer of the 128x-oversampling analog/digital converter used in the Chesky/ Bob Katz A/D (now available from Ultra Analog), described a new A/D converter made by Analog Devices that uses a fifth-order loop filter. The converter will be available soon on an IC, and is said to have a dynamic range of 105dB.

In the early 1980s, Sony PCM-FI-format digital encoders/decoders using VCRs for storage became very popular with amateur and professional recordists. One problem, though, was the need to get the balance correct during the recording because the FI is a two-channel format. A way of overcoming this limitation was presented that showed how two PCM-FI-type processors could be combined for four-channel recording on one video tape. The method, called “Digi 4,” allows, for example, reverberation mikes at the hall rear to be recorded separately, with the final balance determined later under more ideal monitoring conditions. Another application is recording the four outputs from a Calrec Soundfield microphone (WXYZ) on separate tracks.

A new technique for concealing digital audio data errors was proposed that accommodates the special requirements of bit-rate reduced signals (“Burst Error Concealment for Digital Audio Tape and Broadcast Applications”). Rather than use conventional techniques like interpolation (a best-guess approximation of the missing data based on surrounding data), which are inadequate in compressed-data applications, the paper suggests alternate methods such as removing the errant data and crossfading the two resulting signal sections. The missing time created by removing a chunk of information (up to 2200 samples) is compensated for by inserting new, synthesized samples immediately after the error occurs. Scary stuff!

In a similar vein, “Evaluation of Two Interpolation Methods Applied to the Restoration of Old Recordings” discussed digital signal-processing techniques to remove impulse noises (clicks, pops, etc.) from old recordings and replacing the missing data with an interpolated approximation. The paper, which is highly mathematical and technical, concludes by saying, “Finally, we must emphasize that in the field of sound restoration, the ear is the only judge. Thus, an objective criterion, however valuable, is not sufficient to conclusively evaluate a technique.”

“Spectral Stereo Surround Sound Pan-Pot” describes a two-channel 360° virtual imaging system for recording studios that can reportedly place an image anywhere within a 360° field around the listener. Most spatial-image manipulation devices simulate the effects of the head and outer ear with equalization, based on data gathered from a large number of subjects. The approach taken in the paper, however, relies on theoretical models of human hearing for the filtering algorithms.

One paper that caught my eye in the convention program was entitled “Measuring the Quality of Audio Devices.” My interest was really piqued by the abstract’s first sentence: “A general method is developed to predict the subjective quality of audio devices using objective measurements and a model of the auditory system.”

Was this the breakthrough we’ve all been waiting for? I wondered. After attending the presentation and reading the preprint, however, I’m not much further toward understanding...
In the past, audiophiles demanded good sound and little more. High end products were often unreliable, complicated, and by today's standards, downright ugly!

Today's audiophile wants it all including good looks.

Magnepan introduces a new generation of speakers that are unabashedly bold and very attractive. (No compromise here to
downsae and proud of it.) The new generation of Magneplanars is for the uncompromising audiophile who wants the speed and musical accuracy that is the hallmark of the full range ribbon/planar speaker.

The good looks mean you won't have to hide them in the den.
ing how subjective perceptions can be objectively measured. According to the preprint, the theory is based on the concept that human observations are always based on internal representations of the external world. The method attempts to map the input and output signal of an audio device onto an internal psychophysical representation. The quality of the device is then measured on the basis of differences in internal representation. Huh?

Perhaps the most important paper of the Convention was “Problems in Error Masking in Audio Data Compression Systems” by Michael Gerzon. The paper identifies failures in the established error-masking thresholds—the same thresholds that are used as a basis for determining what signals get encoded and which are thrown out in data-compression systems. Gerzon asserts that when the error is highly cross-correlated with the signal, masking thresholds can be reduced by as much as 30dB. This paper has alarming implications for the many audio technologies being developed that rely on data compression. Michael Gerzon is currently working on a paper that shows mathematical evidence that A/B testing is seriously flawed as a method of detecting differences in audio equipment.

The next Audio Engineering Society Convention is scheduled for October 4 through 7, 1991 in New York. The Convention’s theme will be “Audio Fact and Fantasy: Reckoning with the Realities.” In a letter sent to all AES members, the convention chairman expressed the reasoning behind choosing this topic: “The Convention theme, ‘Audio Fact and Fantasy: Reckoning with the Realities’ reflects a growing concern among many about the conflict between the results of objective investigation (‘fact’) and subjective observations (‘fantasy’).”

I can’t wait to ask the writer of those words if the last time he enjoyed a piece of music he objectively verified that the music was indeed “factually” good or if his enjoyment was merely the “fantasy” of subjective observation.

Stay tuned.

US: Corey Greenberg
Leo Fender was born in 1909 in Anaheim, CA, the son of a farmer who never made it past the third grade. Young Leo worked the fields with his father as soon as he could walk, and it was there, in Mother Earth’s dusky womb of carrots, cabbage, and corn, he heard Music. God’s Own Music. The plaintive Southern crowing of Jimmie Rodgers on a radio turned up loud enough so all the farmhands could hear it set young Leo Fender’s heart afire, and it was this music/fieldwork association that forever bonded Leo Fender to the black slaves who would later take Leo’s futuristic and wonderful electric guitars and basses and, to the world’s utter astonishment, make unearthly sounds emanate from them.

Leo soon had a reputation as a pretty handy fella with tools, and local musicians brought him their early hollow-body electric Gibson, Epiphone, and Rickenbacker guitars to repair. While not a player himself, Leo possessed a keen and intuitive mind for things of a physical nature, and he soon saw these early electric guitars for what they really were: poor and misguided adaptations of existing acoustic guitar topology. Yes, the “artisans” and “luthiers” sipping imported Belgian espressos and slapping horseshoe-magnet pickups onto hollow-body Spanish guitars had succeeded in transducing the vibrations of the guitar strings into AC voltage signals suitable for electrical amplification, but their rigid and parochial adherence to classical stringed instrument design kept their designs hopelessly and pitifully Earthbound.

As pioneers before and after him were apt to do, Leo Fender disregarded all that had come before him with the contempt of the pure punk spirit. F-holes? Piss on F-holes; they look effete anyhow. Ebony and rosewood fretboards? Piss on them too; maple’s cheaper, plus it sounds brighter and twangier. Three-on-a-side tuners on a semi-rectangular headstock? Piss on that; we’ll put all six tuners on the same side, and have the strings pass through the nut in a perfectly straight line, thus eliminating tuning problems. But most important: Hollow bodies? Drink 18 gallons of Doc Sully’s Marvel Tonic and piss on that, too; we’ll make ours with bodies of solid swamp ash, which’ll not only make ‘em much simpler to produce, but the notes will sustain ten times as long!

Leo introduced the world’s first production electric solid-body guitar, the Fender Broadcaster, in 1948, and the response from the guitar establishment was outright hysteria:
Westlake Reference Speaker Systems Are The Systems Of Choice For Discriminating Listeners

Choose: ☐ Any one of 15 high resolution speaker systems.
☐ Regular or biwiring. ☐ Horn or soft dome systems.
☐ Mono, bi, tri, quad or pentamplified systems.
☐ Horizontal or vertical models in furniture grade hardwoods that please the most demanding decorators.

Listen—and Choose Westlake
“They’re not GUITARS!! They’re WEAPONS OF SATAN!!”

“Look at the white fretboard; only a communist would design such a thing!!”

“How can you call this, this thing a ‘guitar’?! It’s too easy to play!!”

But from musicians, the words were “GO DOG GO”; by the time Leo rechristened it the Telecaster, it was the rage of the music world. Every player wanted one, and every girl wanted a player who wanted one. The Tele’s twang, piercing tone cut the balls off of every guitar that came before it, and it soon became the de rigeur sound of country and pop music.

But Leo wasn’t through. While his newly-rich colleagues fared through silk and chased high-priced hookers around the bandsaws, Leo sat down and designed a second electric guitar; a guitar with all the pros of the Tele and none of the cons; a guitar with three pickups instead of two, so players could have three (and, inadvertently, five when later on they discovered the 1&2 and 2&3 positions between the selector switch detents) distinctly different tones; a guitar with two sexy cutaway horns, and a contoured body to better conform to the player’s ribs and arm; a guitar with a revolutionary vibrato assembly built into the bridge, so players could increase and decrease the string tension and thus raise and lower pitch with a flick of the twang-bar; and, most revolutionary of all, custom colors like aqua-green, candy-apple red, sky blue, and salmon pink! Dupont car paints that sparkled like rare jewels! Cool cartoon colors that all but screamed ROCK AND ROLL!! A guitar that would, in the hands of Jimi Hendrix, CHANGE THE SOUND OF MUSIC FOREVER.

The Fender Stratocaster

1954 saw the introduction of the Stratocaster, and Leo Fender’s manufacturing plant in Fullerton, CA was kicked into overdrive. Demand far outstripped supply. Workers kept the bandsaws buzzing round the clock, and hosed them down with liquid nitrogen every few hours just to keep them from melting. Strats and Teles flew out the door, along with the fabled Fender amplifiers Leo had adapted from the RCA Receiving Tube manual schematics.

But still Leo kept chipping away at his Galatea, deaf to the ministrations of his friends who implored him to leave a good thing alone. “Begone, foul distracters!” Leo shouted, and banished them from his workshop. For Leo wasn’t chained to the murky antfarm of mere mortal thought; he’d already solved the electric guitar equation. What he was pondering now was an instrument that had never before been conceived of, much less attempted. This was . . . the electric bass.

Before 1951, bassists had two choices: hump a huge, unwieldy acoustic bass around to gigs, or get a tuba. When Elvis, Scotty, and Bill barnstormed the South in their pre-RCA days, they had to lash Bill’s big stand-up bass to the roof of the car where the sun, the elements, and the pigeons all laid it to waste. Leo Fender heard the silent scream of bassists everywhere and set about designing a solid-body electric bass that would offer bassists a rocket-ride into the future like he had with the Strat. The Precision Bass, introduced in ’51, did that and more. For the first time, a bass could be carried in a case not much larger than a guitar’s; for the first time, a bass could be plugged into an amp or PA, creating a thundering, powerful sound never dreamed of by generations of acoustic bassists; for the first time, a bass was available with frets on the fingerboard, allowing perfect—nay, precision intonation no matter how drunk you were. For the first time, a bassist could get his instrument up off the floor and wear it perpen-dick-ular to his torso to get that subliminal phallus effect that drove the unwitting babes crazy with jungle lust, just like guitar players had been doing since the dawn of man.

And so Leo Fender brought guitars and basses into the 21st century. And just as guitar traditionalists had been horrified by the Tele and Strat, so were acoustic bassists filled with outright contempt for Leo’s Precision Bass. And just as Teles and Strats quickly replaced other guitars on the bandstand and in the studio, the Precision banished stand-up basses overnight. Leo Fender singlehandedly invented a whole instrument category, and other manufacturers were quick to jump on the electric bass bandwagon and just as quick to crap out; esteemed, holy, mother-of-all-classic-guitar-makers Gibson has yet to build a decent electric bass [Amen.—Ed.]

Fender Sales Inc. dominated the industry. The world clamored for Fender guitars, basses, and amps. Leo had the world quite literally by the tail, and still he drank his coffee from styrofoam cups. Ever the common man unencumbered by the luxuries of the nouveau riche, Leo

Stereophile, June 1991

73
"Kinergetic's KCD-20... the first CD player to crack the Class 1 Sound barrier"  
Peter Montcraff  
"International Audio Review", Hotline #43-45.

"...Kinergetics KCD-40 has become an integral part of my playback system. I recommend it very highly, especially to those who have had monumental difficulty coming to any terms with the CD format."  
Neil Levenson  
Fanfare, Jan Feb 1990.

"...Kinergetics offers its purchaser more than a glimpse of what the best CD sound is all about."  
John Atkinson  
Stereophile Vol. 13, No. 1.

"A generation later, transistor designs by such companies as Levinson, Krell, and Threshold have gained my respect as being eminently musical despite their silicon hearts. To this list I can now add Kinergetics Research."  
Dick Olsher  
Stereophile Vol. 13, No. 1.

"Kinergetics pulled off what I considered to be a near miracle. They successfully integrated a subwoofer with the twitchy Martin-Logan CLSes... the tonal balance through the lower octaves was just right. The deep bass and midbass were tight and well-detailed"  
Dick Olsher  
Stereophile Vol. 13, No. 3.

We will continue to create improvements in areas of psychoacoustic that others have yet to discover.
performed that commonest of common-man rituals: every year, he punched out early (even though he owned the clock) on a bright summer day in July, and cheerfully went down to Dr. Fleischman’s for his yearly physical.

In 1963, Doc Fleischman asked Leo to cough, went over to his abacus, and said, “Leo, you have a year to live.” Panic-stricken, Leo put the word out: Fender Sales Inc. was up for sale, ASAP!

Now, I’m not for one moment suggesting that kindly ol’ Doc Fleischman had any connections with the broadcasting conglomerate CBS, but the company swooped down from out of nowhere and bought the entire operation, lock, stock, and barrel in 1965. And while Leo Fender crawled off to find an honorable place to lay his burden down, the executives at CBS took out their slide rules and got down to work.

“Tavares, just why do you boys use nitrocellulose lacquer for the guitar finishes? It’s costing us over a dime an instrument!”

“Well, Mr. Smithers, it’s the only finish flexible enough to allow the wood to vibrate; it sounds the best.”

“Well, from now on you’ll use polyester. It’s only a nickel.”

“But, Mr. Smithers, polyester’s too hard. . . it inhibits the vibra—”

“TAVARES. Didn’t your wife just have another baby? Little girl, wasn’t it?”

“Why, yes Mr. Smithers, but . . . ”

“I sure would hate to see the kid go hungry, just because her daddy got his butt canned. . . comprehend?”

“Yes, Mr. Smithers.”

And Leo? In ’67, he went to get his regular “It’ll be any day now” speech from Doc Fleischman, but the good doctor wasn’t in. So Leo went off to find another sawbones, and find one he did. This doctor took one sniff of Leo’s amber sample and declared him a misdiagnosis! Several days and massive injections later, Leo walked out a cured man. But he was a King without a Kingdom.

I wish I could wrap this up by telling you of Leo’s triumphant return to Fender, but alas, it was not to be. Leo formed his own, separate guitar company called G&L Instruments, and put out his own similar versions of his early masterpieces the Tele, Strat, and P-Bass. But the fire was gone; these instruments, while certainly decently manufactured, lacked that certain magic that made the classic Fenders so coveted by players and collectors alike. Like Dylan, it seemed Leo Fender had a finite capacity of genius, and by the time he put G&L together, he was already tapped out.

But screw all that! Leo Fender’s story is not going to end on a flat note, not if I have anything to do with it. While the Gibsons were jazz boxes made to perform double-duty as pop guitars, Fenders were rock guitars. The Gibsons’ mellow, rolled-off, smooooth tone was replaced with the brash, cutting, twangy scream of the Fenders. And even if Leo had never brought out the Tele and Strat, his place in history would be ensured by the P-Bass and great amps like the Twin, the Bassman, and the Champ. It’s not stretching things to call Leo Fender the Father of the Rock And Roll Sound.

Leo Fender passed away on Thursday, March 21st, 1991. He is survived by loving family, friends, numerous copycat companies from the Mysterious East, countless Fender rip-off designs from every major and minor American guitar firm since 1954, the largest musical amplifier company in the world—Marshall—which started off by directly ripping off the Fender Bassman circuit, and Fender-wielding musicians of all ages, colors, and musical genres.

Requiescat in pace, sweet Leo. We will not see the likes of you again.

US/The Netherlands: Peter W. Mitchell

Telarc is now using UltraAnalog oversampling sigma-delta A/D converters with 20-bit resolution for many of its recordings. The resulting digital code is formatted in a Sony PCM-1630 to make a CD-compatible master tape, bypassing the 1630’s own ADCs and filters. Of course, the CD is still a 16-bit storage format, so the goal of high-performance A/D converters is to deliver full 16-bit resolution to the listener. Imperfections in 16-bit A/D converters led many older CDs to exhibit only 14-bit or 15-bit equivalent resolution.

The description of the Philips DCC in the April issue hinted at an aspect of its behavior worth emphasizing. In a linear PCM system such as CD and R-DAT, the decoder is basically a mirror image of the encoder, and its ultimate
MAJOR PERFORMANCE.  
MINOR DECISION.

FROM THE LEADERS IN RIBBON LOUDSPEAKER TECHNOLOGY COME THREE NEW HYBRID PERFORMERS, CENTAUR MINOR, CENTAUR AND CENTAUR MAJOR EXPAND THE CUTTING EDGE OF AUDIO.
Philip's DCC—upwardly mobile?

Performance level is set by the system parameters (sampling rate, 16-bit quantization, et al.). The performance of real-world CD hardware can be refined, approaching closer to its theoretical limit, by eliminating flaws such as converter nonlinearity and timing jitter; but a fundamental improvement in CD sound would require a complementary redesign of both the encoder and the decoder.

In the DCC, however, the encoder and decoder are not mirror-image circuits. A DCC recording resembles an encrypted code like those used by government intelligence services to scramble secret military information so that it cannot be read by spies and other unauthorized recipients. The transmitted file contains within it not only the information that the sender wants to conceal, but also hidden clues about how to unscramble and decode the file. As Peter van Willenswaard reported, in a DCC deck the playback circuit is basically a computer that follows certain rules but also responds to programming instructions contained within the recorded code.

The practical result is that the performance of the DCC's PASC encoder can be progressively refined, improving its sound quality, without requiring a complementary redesign of the decoder. Thus the quality of DCC playback can be improved by causing the encoder to provide more sophisticated decoding instructions in the recorded code. This is an interesting exercise in electronic democracy: after consumers invest in DCC playback decks, the sound they hear would be controlled by the relatively few encoders used by record companies to master DCC recordings. If more sophisticated encoders are developed in the future, listeners could enjoy better-sounding tapes without having to buy new playback gear.

It is this malleability of the decoder, its ability to respond to instructions in the recorded code, that may enable a DCC deck also to serve as a decoder for digital radio broadcasts (which use a digital bit-rate reduction scheme similar, but not identical, to that in DCC encoding).

**UK: Ken Kessler**

"Tomorrow's World," the BBC's homogenized science-for-the-masses TV show, has never been forgiven—in hi-fi circles—for its initial coverage of CD. It was "TW" which convinced 10 or 15 million viewers that CDs were indestructible, the sound was perfect, etc., etc., and retailers have been trying to undo this misinformation for the past eight years.

Every time somebody's CD player screws up, or a disc suffers a defect, there's a good chance that the customer will cite "TW" as some sort of challenge to the dealer's reasoning/excuses. The show is that influential, and it can do more to spread new technology than any rave in a hi-fi magazine. So it's anyone's guess what dealers will do when the punters start asking about RSS, the latest technology to be demonstrated at peak viewing time.

RSS is short for Roland Sound Space. If you're not prone to monitoring the studio and pro mags, you may be unaware that surround-sound, or "3-D Sound" (in addition to the standardized Dolby systems for video soundtracks), is still a source of fun'n'games for those who make the recordings. RSS is the latest in a line which includes the various four-channel systems from 20 years ago as well as binaural, Holophonics, QSound, Ambisonic, and a host of others. It is similar to QSound in that it purports to provide true surround from two speakers positioned in the normal stereo locations.

A bold claim, eh? Snicker not, because the "Tomorrow's World" demonstration—whatever its limitations—was most convincing. And while it may not be what you want applied to studio recordings, the implications for live recordings, as well as film soundtracks, are beyond question.

First, the technology: the Roland Sound Space Processing System is a three-part package which, according to the literature, "enables a three-dimensional aural environment to be reproduced on a conventional two-speaker stereo system." The kit consists of the Sound...
Fulfillment Through Technology

Fine equipment, carefully chosen...
an investment that provides a lifetime of pleasure.
Space Processor, the A/D/A Converter, and the Sound Space Controller, the first two being rack-mount boxes and the third a console looking like a four-channel mixing desk.

The Sound Space Processor contains two processing systems, “binaural” and “transaural,” and four 24-bit internal processing circuits. The Processor can handle four signals simultaneously, effectively converting binaural sound for playback through loudspeakers rather than headphones. Connection to the A/D/A unit allows it to handle analog and digital input and output signals, while the A/D/A converts the SSP’s signals into analog.

The A/D/A unit provides 18-bit A/D linear processing and four-channel D/A 20-bit linear processing. Sampling frequencies of 44.1kHz are available to the A/D converter and emphasis is switchable; the D/A section conforms automatically.

What the RSS technology does is correct the sound pressure levels and timing (signal arrival) for two ears, eliminating L/R aural crosstalk which doesn’t affect binaural playback through headphones. The crosstalk is eliminated by the transaural processor section of the SSP. On the surface, this may seem like a re-creation in the digital era of the binaural processors of yore (eg, JVC’s Q-Biphonic of 1977), but research by Roland has taken it a stage further than merely providing dummy-head recordings with the means for playback through loudspeakers.

Enter the Sound Space Controller, a console handling the spatial characteristics of up to four signals. (Up to 15 SSPs, however, can be connected to one SSC.) Using large rotary controls, the engineer can dial in “Elevation” to provide vertical adjustment of the sound, while “Azimuth” adjusts horizontal location. As you’d expect, the RSS system is fully compatible with MIDI-compatible equipment, so its integration into existing studios is straightforward.

What “Tomorrow’s World” did was to arrange a TV demonstration to the nation, but the sound portion had to be sampled over the radio. That’s right: the BBC, which developed NICAM, still hasn’t managed to cover the nation with stereo TV—unlike its independent opposition. So, aside from selected areas (eg, London), the demonstration came via a simulcast with the BBC’s Radio One national pop music station.

Caught unawares and not having time to warm up the Marantz 10B, I listened to the demo through an aged Hitachi mini-system and a pair of Wharfedale Diamonds in the kitchen. The “Tomorrow’s World” team linked up with a Radio One disc jockey, who provided some synth-based material for the demo.

It was an impressive A/B demo, and I was staggered to hear quite distinct sounds to the rear-right and rear-left, though little was heard at rear-center. The first material used was the show’s theme, with and without processing. Okay, so it was swirly synths and drum machines, but that’s not the point. The impression of sound to the sides and rear was beyond doubt. But the most impressive gain, however much we may secretly harbor a craving for full surround sound, was the extra stage width. The sound emanated well to the outside of the speakers’ edges, making my tiny kitchen seem twice its size.

With one of the show’s presenters at the console, the “dialing-in” effect was demonstrated, showing how the azimuth and elevation controls could position sounds with remarkable accuracy. Whether or not the sounds were suffering from distortions or colorations I can’t say, because the source material was unfamiliar or wholly synthetic. But the directional effects were chillingly realistic.

But we’ll all have a chance to hear what it can do, as I’ve just learned that the rumors I’ve been hearing are true: the Rolling Stones have used RSS on their brand-new live LP, Flashpoint. As my copy won’t arrive until after this column’s deadline, I’m guessing that the system has been used only on certain tracks; cuts taken from the LP which I’ve heard on the recent batch of CD singles don’t indicate the use of RSS. But if you listen to Flashpoint and all of a sudden the audience surrounds you, then you’ve heard the first commercially released work to employ Roland’s system.

Which points to RSS’s applications. Whether or not the system works well with acoustic instruments, which would be nice to capture the ambient sound of everything from a string quartet to a full-blown orchestra, I just cannot say. But what it will do for live pop and rock recordings is remove that unrealistic sensation of sitting simultaneously on the front of the stage facing the band as well as with the audience behind the band or in line with them. If the system works as it should, you’ll hear the artists in front of you, with the audience to the sides and behind you.
THE CLASSICS REVISITED
PV11 Preamplifier, MV52 Amplifier.
All-tube components priced under $2000 each.

the conrad-johnson group
2800R Dorr Ave. • Fairfax, VA 22031 • 703-698-8581

SONOGRAPHIE

“Designer styling, conrad-johnson engineering and affordable prices—an unbeatable combination.”

the conrad-johnson group
2800R Dorr Ave • Fairfax, VA • 22031 • 703 698 8581
The other boon would be simplified setups for surround-sound, eliminating the domestic problem of "Where do I place the rear speakers?" in Dolby-Surround installations. It would also eliminate the need for a separate decoder (although this isn't too much of a problem, as many receivers and integrated amplifiers are appearing with built-in Dolby-Surround facilities.) It may turn out that RSS does more for a video's audio portion than for audio-only releases. But don't be surprised if older binaural audio material is reissued in remixed form should the system prove successful.

Other uses would include video/computer games' sound effects (Wing Commander in surround sound!!!) and background music, RSS processing of sampled sounds, and anything else the boffins might consider.

But pity the poor retailer who, having just sold to a videophile a complete four- or five-speaker-plus-decoder surround system, has to explain why the guy bought two or three speakers more than "Tomorrow's World" deems necessary. Whatever the repercussions, I'm hoping that the use of RSS is given a chance—if not for enhancing pure audio, then for enhancing A/V applications where spatial concerns are so important. "Do it with only two speakers instead of four" is the kind of advertising catchphrase I'd love to see.

**US: Peter W. Mitchell**

**Correction 1:** In the March issue I mentioned that a new federal ethics law, preventing government employees from earning outside income, might block reviewer Anthony H. Cordesman from writing for The Absolute Sound and Audio in his spare time. As it turned out, there's no problem. Before the law went into effect, AHC left the State Department, joined the faculty of Georgetown U., and became a military-affairs consultant to both Senator John McCain (R-AZ) and ABC TV news, where he was seen often during the Iraq war.

**Correction 2:** In April I reported that PSB speakers are intended to be used with the grille cloth in place. A statement to that effect was included with PSB's sales literature and previous owner's manuals, but it is not in the instructions now supplied with the Stratus Gold.

---

**US: Robert Harley**

During the 89th Audio Engineering Society Convention in Los Angeles, I missed a very interesting workshop discussion that was scheduled concurrently with a technical papers session. Consequently, my January convention report didn't include coverage of this event. However, I have since obtained a transcript of the workshop—and it is fascinating reading.

The workshop panel was made up of what is arguably the most prominent and well-respected group of recording engineers in the world. Sponsored by the National Academy of Recording Arts and Sciences (NARAS, the same folks who bring you the Grammy awards), the workshop was a forum for these top engineers to discuss their thoughts on various aspects of their work, including analog vs digital, their recording techniques, and how aspiring engineers can learn the craft of recording. I found their comments on analog and digital recording—and those of audience member Doug Sax—to be of particular interest.10

What really struck me about the proceedings, however, was their collective attitude toward digital recording. They seem to have a love/hate relationship with digital. On one hand, all the participants stated that digital doesn't sound as good as analog, yet all embrace digital in their work. This is exemplified by the following quotes, both from the same individual: "I'm completely sold on digital" and "There isn't a digital machine that sounds as good as a properly set-up [analog] 16-track." A careful reading of the following comments sheds some light on this dichotomy.

The workshop panelists included Bruce Swedien, Bob Clearmountain, George Massenburg, and Al Schmitt. Between them, these four recording engineers have amassed an impressive track record. Look through your record and CD collections: you're sure to see their names on many familiar recordings.

The following are selected excerpts from the

10 See my interview with Sheffield Lab co-founder Doug Sax in Vol.12 No.10.
Bob Clearmountain: I think we are just beginning to recognize the possibilities of digital recording. Obviously, at this point there are still a lot of people that feel they are missing something when they record digitally. There is something that analog adds to the sound—or it could be something bad that digital adds to the sound. Many people still enjoy recording analog, but I think this is going to change as manufacturers address this problem and come up with solutions such as new filters and better converters. Not only that, but I think our ears are adjusting and adapting to digital sound.

Digital editing is what sold me on it. The creative possibilities of being able to have an almost endless number of different versions of a recording and being able to fly tracks back and forth, and being able to change where drum fills are. I just think the creative possibilities are going to make it for those who can afford it. Not only that, I think once you get accustomed to the sound, it is just better.

George Massenburg: I've been working in digital for about five years and I am sold on it. Not because it sounds good, but because, as Bob said, it gives you tremendous procedural capabilities. In signal processing where we have more exotic reverberation effects at our disposal in the console, and [spatial] positioning sorts of algorithms available in front of us—that's all going to be digital. It's impractical and impossible to do it in analog. So we might as well get used to it.

We truly believe that 16-bit conversion is not going to come anywhere near what we remember in analog, or what we know in analog. There are 20-bit converters available and I truly believe it is going to go in that direction. But I am completely sold on digital.

Al Schmitt: I really think that digital is the future and where it's really going to go. Even dinosaurs like Bruce [Swedien] and I are not going to stop it. The way I am recording now is—like Bruce—a combination of analog and digital. That's what works for me. I still get the warmth and punch out of analog. I record my rhythm tracks on 16-track analog and transfer them over to digital machines for doing overdubs. I prefer the analog on vocals and certain on the [rhythm] tracks for punch. But I don't think we are going to stop digital. That's where we are going to go, and 20 years from now I don't think there will be any more analog recordings.

GM: That's funny you should mention 16-track, because that's a stunning format. There isn't a digital machine built that sounds as good as a properly set up [analog] 16-track.

Bruce Swedien: Yes, I still keep a 16-track machine that I use for recording drums and percussion, and I use it on every project.

AS: Exactly.

BC: Hopefully, one of these days some manufacturer is going to come up with a brilliant box that's going to make a digital machine really sound like an analog machine. [laughter]

A question from the audience about the differences between analog and digital recording for different types of music sparked these comments:

AS: I think digital sounds great on classical records—things that get so quiet you want that dynamic range.

GM: What I look for in doing classical things is just transparency—it's the same thing I look for in doing pop. But the thing I do believe about classical and digital . . . I think Doug Sax is here today and he made a couple of brilliant direct-to-disc classical records that have nothing but resolution on the low-[-level] end.

There is something in digital that fools us into thinking that it is quiet and that is because you don't have any resolution whatsoever once you get below the least-[significant]-bit level. Electronic noise and room ambience are stripped away by digital because of this limit or barrier at the low end. This is one of the great advantages of analog: you have detail 20 or 30dB down underneath the noise floor. You just don't have that in digital.

BC: I tend to disagree with you, George, because that detail really tends to get covered up by the noise. How far down are we talking about?

GM: I'm talking about stuff ridiculously low. Below literally about -96[dB]. There just has to be a reason that for any digital recording or any piece of music heard both ways (analog and digital), that digital just has less ambience or reverb or air—whatever you want to call it. Almost every time, if you were to mix something to analog and mix it to digital, there is just this subtle difference between the two in the

---

11 Our thanks to the Audio Engineering Society for permission to quote at length from the workshop transcript. A complete cassette recording of the workshop is available from Mobile Tape Company Inc., 25061 West Avenue Sanford, Suite 70, Valencia, CA 91355.

—JA

Stereophile, June 1991
"I SIMPLY MUST HAVE THE STEREOPHILE TEST CD"

Nearly 71 minutes of music and test signals for just $6.95! (plus S/H)

Purist recordings from Stereophile contributors
JGH, JA, RH, and PWM

128x-oversampling digital conversion compared with the industry-standard Sony PCM1830

The sounds of 18 professional microphones compared

Absolute Phase test

And guest appearances from J. Gordon Holt, The Audio Anarchist, and Stereophile's own Ralph the Christmas Dog.

STEREOPHILE TEST CD ORDER FORM

Name ________________________________
Address ________________________________
City ___________________ State ______ Zip ______

Please send me ________ copy(ies) of the Stereophile Test CD

(×) ________ $6.95 each

(+) ________ $2.00 per CD S & H

(=) $ ________ Total this order

□ Check enclosed (Payable to Stereophile in US dollars)

(or) Charge my □ MasterCard □ Visa □ Am Ex

Credit Card Number ____________________________ Exp. Date ________
Signature _______________________________________

Return this form to: Stereophile
CD Department
P.O. Box 364
Mt. Morris, IL 61054

Credit Card Orders: 1-800-435-0715

Allow 4-6 weeks delivery
The Electromagnetic and Acoustic (EMA) Isolation Plate provides both mechanical and magnetic benefits to any audio or video system. The plates are constructed using a low Steinmetz Coefficient material to reduce hysteresis losses and with alternating layers to increase magnetic permeability and minimize eddy current losses. The plate is critically damped and the considerable mass is supported by engineered feet with a damping factor of 0.6.

This novel embodiment of vibration and magnetic damping results in dramatically improved clarity, focus and sound staging when used with any mid-to high-end components, such as amplifiers, preamps, CD players, satellites and turntables. Available in a range of sizes, priced up to US $495, at these fine stores:

**PRECISION AUDIO**
Moorpark, CA
(805)523-3005

**Salon 1 Audio**
Wisconsin Rapids, WI
(715)421-5910

**Audio Illusions**
East Detroit, MI
(313)772-8822

---

**The Ball Foot**
(for Coupling)

Introducing a critically damped coupling foot specifically designed for the Isolation Plate
Set of 3 for $30.

**The Blue Foot**
(for isolation)

Finally, a critically damped isolation foot for audio components
Set of 3 for $15.

---

**MSB Technology Corporation**

MSB Technology Corporation began with the introduction of the Silver CD Player in 1986. A range of CD players followed, with a processor and video equipment to be introduced.
area of reverb. And I'm attributing this to resolution problems. I really don't know.

**BC:** The recording medium doesn't make a lot of difference to me as far as artistically or what type of sounds I am recording. I like digital because what comes out sounds like what goes in, more so than analog.

For certain types of music analog might be good and digital for another. That's why I'm really annoyed with the disclaimer that Warner Brothers puts on the back of their CDs that says because a certain project is recorded analog that it is somehow inferior. They are insinuating that the consumer is in some way buying an inferior product. This is just a bunch of nonsense because it really is just a creative decision.

Certain types of music are better recorded one way or the other. It really has nothing to do with resolution or any of the lies that they say in that paragraph. It is actually a lie about digital's greater resolution, when actually analog has infinite resolution, as opposed to digital which has finite resolution.

**BS:** I'd like to add a comment of my own. To describe the difference between analog and digital in a nontechnical way, or the way it affects my psyche, it is as if you took a film camera—a high-quality motion-picture camera—and right next to it you put a high-quality video camera. Then you photographed the same image with each medium and looked at those two images. The film will have a softness or beauty to it. Then when you look at the video version it will be a bit harsh and almost unrealistic. To me, analog is like film. Analog recording to me has a beauty that digital doesn't have. That's just the way it affects me, and to me music is what we are all talking about. That's why we're here in the first place. Music is an emotional thing. As producers or engineers, that is what we have to think of first. The bottom line is how it affects us emotionally. The one thing to add, though, is that what digital does it does so dramatically well that there is nothing to talk about. I still use 16- and 24-track analog for a lot of my work, then use digital as a storage and editing medium. However, in the past two or three projects I have done, I'm finding myself using digital less and less as an initial recording medium.

I'm working with Michael Jackson on his new project—producing three new songs and engineering the project. I'm going to let you in on a little secret, I'm going to mix two of the songs to analog and three to digital because they affect me differently. And I really think that is really the bottom line when we are talking about music.

**Audience question:** When you talk about using 16-track analog and transferring it to digital, the thought came to me that if digital is missing something or isn't adding the punch or whatever, do you lose the punch you gained in analog when you transfer to digital?

**BS:** To me, once the analog format gets transferred to digital it changes very little. It's as though you took that 35mm film and transferred it to video tape. You still see the original quality even though it is on video tape. What do you think, George?

**GM:** To me there is a difference or change. I'm not so sure any of us knows why. I think it's a matter of resolution. I think you lose ambience. I'm quite convinced that you lose ambience. Digital drops or strips ambience from the source.

**BC:** So just put a bit more ambience on your record. [laughs]

**Audience question:** Are you always happy with the transfer that takes place [between the master] and the Compact Disc? The reason I ask is that I heard a secondhand story about a release that George [Massenburg] had worked on recently. I was told that the CD release didn't really compare to the master and I wanted to know if anybody has actually had that experience and what adjustments you try to make.

**AS:** I did the *Toto IV* album and they mastered the CD in Japan. And it sounded like shit when it came out. It was just terrible. There was no supervision. No one knew who was doing it. The mastering engineer did his own equalization.

**BS:** I think I know a little bit about something that happens there. It was the policy for a record company to take whatever [mixdown] medium it was—whether it was digital, DAT, analog, or whatever—and rerecord it on [Sony PCM] 1630. And you know why? To get their damn little numbers in there—the PQ codes. So I hit the roof, of course. That doesn't happen any more on my projects. In fact, a lot of

---

12 A CD glass master is made from a Sony PCM-1630 format K U-Matic video cassette. Digital data is stored as a video signal, with black representing binary one and white binary zero. PQ codes are stored as a burst of data at the beginning of a 1630 tape and read into the mastering machine before the disc is cut. These codes identify the track start and stop times, and other housekeeping information. The mastering machine then writes this information on the CD along with the audio data.
A SONIC REFERENCE!

Now Available on CD

Purist miking +
Analog recording +
No noise reduction +
All-tube electronics +
A simple signal path =

Natural instrumental timbres +
A lack of compression +
A real soundstage =

Musical truth—
a reference-standard recorded sound.

Tired of commercial recordings that stubbornly refused to deliver accurate sound quality and soundstaging, Stereophile's editors commissioned Water Lily Acoustics' Kavi Alexander to capture the sound of flute and piano with accuracy, honesty, and integrity. (See Stereophile, September 1989, Vol.12 No.9, p.66, for the full story.)

The result, they believe, is a recording that is true to both the original sound and the music—flute sonatas by Prokofiev and Reinecke and Charles Griffes's Poem.

STEREOPHILE POEM LP/CD ORDER FORM

Name __________________________
Address _________________________

City ___________________________ State ______ Zip _______

<table>
<thead>
<tr>
<th>Item</th>
<th>Quant.</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poem LP (STPH001-1) 3 Step Process</td>
<td></td>
<td>11.98</td>
<td></td>
</tr>
<tr>
<td>Poem CD (STPH 001-2)</td>
<td></td>
<td>11.98</td>
<td></td>
</tr>
<tr>
<td>Shipping (US &amp; Canada)</td>
<td></td>
<td>2.00/item</td>
<td></td>
</tr>
<tr>
<td>Shipping (Foreign orders)</td>
<td></td>
<td>5.00/item</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

☐ Check enclosed (Payable to Stereophile in US dollars)
☐ Credit Card ☐ MasterCard ☐ Visa ☐ Am Ex

Card Number _____________ Exp. Date _____________

Signature ____________________________

Credit Card Orders: 1-800-435-0715
Return this form to: Stereophile, LP/CD dept.,
P.O. Box 364, Mt. Morris, IL 61054
Allow 4-6 weeks delivery
the time I go to the pressing plant and supervise the cassette and CD production if possible. I think the labels many times put it through a whole other generation. Doug, what do you think about this?

**Doug Sax:** I'm Doug Sax with the Mastering Lab and I deal with this on a daily basis. The record companies have looked at digital and its claims that "you can make data-to-data copies endlessly that will be sonically identical to the original," and have used this false fact as a way to step into the production process.

As an example, A&M records is now part of PolyGram. A&M's policy for an A&M record used to be that an original tape would be generated for each plant to master a Compact Disc. So whatever the prime tape was—30ips ½" or Mitsubishi digital, for example—the transfer to the 1630 format would be made once and each plant would get an original. However, on my last two A&M projects, the total order on the album was one un-timed, equalized 1630 to go to A&M. Both projects were since the buyout.

Now, all of this means that if it is un-timed, you know that this tape is going to be used to generate additional "masters," normally through editing systems that I guarantee are highly audible. Often the plants will get this tape and generate additional tapes from this tape. If you go under the premise that the transfers are perfect, then it doesn't matter if you take a copy and make your own copy and then give that to your friend and he makes his copy. But I'm very critical of all the storage formats that we now use. I think it is one of the areas where sound deteriorates in ways that you can't explain. I really don't think video machines should be our prime storage medium for audio in the future.

**GM:** What you are actually touching on is 1630 copies being less than perfect. I don't think we have actually stated that, and I think we should.

**DS:** Oh, they are less than perfect. We are now at the point where you can get a CD reference disc made from your CD master tape—the very same tape that will be used to generate your production CDs. I strongly recommend that you get a CD reference to compare with your production CD so that you can easily verify if something has gone wrong in the process.

**BS:** One thing that irritates me a little bit about digital is, as users of this device, we were lied to right from the outset by the manufacturers.
### Preamps, Poweramps & Tuners

<table>
<thead>
<tr>
<th>Model</th>
<th>Power Output</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krell Altair</td>
<td>100W stereo amp</td>
<td>$3,500</td>
</tr>
<tr>
<td>Krell MDA-300</td>
<td>300W mono differential balanced amp</td>
<td>$9,000 pr.</td>
</tr>
<tr>
<td>Krell MDA-500</td>
<td>500W mono differential balanced amp</td>
<td>$12,400 pr.</td>
</tr>
<tr>
<td>Jadis JPL</td>
<td>Tube line stage amp</td>
<td>$5,000</td>
</tr>
<tr>
<td>Jadis DEFY 7</td>
<td>100W stereo tube amp</td>
<td>$5,500</td>
</tr>
<tr>
<td>Jadis JA200</td>
<td>200W mono tube amp</td>
<td>$17,995 pr.</td>
</tr>
<tr>
<td>Jadis JA500</td>
<td>500W mono tube amp</td>
<td>$24,500 pr.</td>
</tr>
<tr>
<td>Quicksilver</td>
<td>Silver mono tube amp</td>
<td>$2,500</td>
</tr>
</tbody>
</table>

### Speakers

<table>
<thead>
<tr>
<th>Model</th>
<th>Power Output</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilson Audio</td>
<td>Watt III*</td>
<td>$6,650 pr.</td>
</tr>
<tr>
<td>Martin Logan</td>
<td>The Quest</td>
<td>$3,995 pr.</td>
</tr>
<tr>
<td>Vandersteen</td>
<td>Model III*</td>
<td>$2,395 pr.</td>
</tr>
<tr>
<td>Mirage</td>
<td>M-5</td>
<td>$1,495 pr.</td>
</tr>
<tr>
<td>Monitor Audio</td>
<td>Studio 15*</td>
<td>$3,995 pr.</td>
</tr>
<tr>
<td>Apogee Centaur</td>
<td>Minor</td>
<td>$995 pr.</td>
</tr>
<tr>
<td>Apogee Centaur</td>
<td>Major</td>
<td>$2,995 pr.</td>
</tr>
</tbody>
</table>

### Digital Components

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krell CD-DSP</td>
<td>$3,650</td>
</tr>
<tr>
<td>Audio Research</td>
<td>$2,995</td>
</tr>
<tr>
<td>DAC-1</td>
<td>$6,000</td>
</tr>
<tr>
<td>Altis DAP</td>
<td>$1,795</td>
</tr>
<tr>
<td>Cal Audio</td>
<td>$2,795</td>
</tr>
<tr>
<td>System 1</td>
<td>$1,995</td>
</tr>
<tr>
<td>Museatex</td>
<td>$800</td>
</tr>
<tr>
<td>Meridian 606</td>
<td>$2,250</td>
</tr>
<tr>
<td>Meridian 602</td>
<td>$2,750</td>
</tr>
<tr>
<td>Meridian 206B</td>
<td>$1,950</td>
</tr>
<tr>
<td>Denon DTR 2000</td>
<td>$995</td>
</tr>
</tbody>
</table>

### Miscellaneous

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tice Clock</td>
<td>$350</td>
</tr>
<tr>
<td>Lyra Clavia Cartridge*</td>
<td>$1,500</td>
</tr>
</tbody>
</table>

Call Toll Free 1-800-794-9551

*Available in New York City exclusively at

**SOUND by SINGER LTD**

HIGH END AUDIO...DONE RIGHT
18 East 16th St., New York, NY 10003 (212) 924-8600

---

88 Stereophile, June 1991
They said, "You can make all the copies you want—it's a clone." That's an absolute, bold-faced lie. I hear degeneration in the process after two or three digital copies. So I can just imagine what is happening with these video machines.

DS: I can name that tune in one!
BS: I've been bitten by that bug terribly—in editing where I have to go back to the original parts and reconstruct it because the sound just goes away and it just doesn't do that "thing" anymore.

DS: What's been known about analog tape is that the copies are audible: you double your distortion, double your flutter and wow. So because this is known, LPs—or when LPs were still being made—were always cut from the same generation master—everyone always insisted. And now you take digital, where we have been told that all of the copies are identical. This allows for a great deterioration in the whole process.

"This is the finest player evaluated to date..."

"Make no mistake about it, this is the finest player evaluated to date..." So concludes Martin DeWulf, Bound for Sound Newsletter publisher, after extensive listening sessions with the McCormack Prism II CD Player.

You may agree with him. You may not. Either way, you will want to listen for yourself.

Visit your local dealer, or contact

The Mod Squad, 542 North Highway 101, Leucadia, CA 92024 • (619) 436-7666

McCORMACK

The First Name in Sonic Excellence—The Last Word in CD Musicality
SFM-75
MONO TUBE AMPLIFIER
MARK II

SFS-50
STEREO TUBE AMPLIFIER
SONIC FRONTIERS gets two thumbs up for their entry into the vacuum tube amplifier arena. "...the best overall square-wave response of any tube amplifier I have measured." David Davenport & Kevin Carter, GLASS AUDIO Magazine, Issue 2/90

"Tremendous air, body and focus. Excellent bass capabilities when driving my APOGEE DIVA speakers full range. An excellent sound value for people who love music." Harvey Rieff, Hoboken, NJ USA

"Highs and definition much better, midrange very good, bass excellent! Hard to believe this is a tube amp when you hear all that bass, better in every respect than any tube amp I've heard. As for the aesthetics, they're gorgeous!" Mike Radonic, NY USA

SFM-75 MARK II MONO TUBE AMPLIFIER

Features:
- satin chrome chassis and transformer end caps with a gold brushed aluminum faceplate
- twin 6DJ8 differential cascode input/driver circuit (co-designed by Joe Curcio)
- easily removable (snap-in) top cover
- front panel bias meter with exterior mounted adjustment controls
- Matched Pair KT-88 output tubes
- regulated pentode (or factory wired triode option) operating mode
- 3.5, 8 or 14.5 ohm output taps (all secondary windings utilized)
- the finest parts quality available including VISHAY, REL-CAP, WONDER CAP, SOLEN CARDAS, EDISON PRICE, HOLCO, WIMA, ETC.
- all handcrafted including hand stuffed and soldered circuit boards using WONDER SOLDER
- custom wound wide bandwidth output transformer constructed with a core of grain oriented silicon steel

PRICE : $3495 per pair (5 year parts & labour warranty)

SFS-50 STEREO TUBE AMPLIFIER

We are pleased to introduce our newest product, the SFS-50 Stereo Tube Amplifier. Utilizing the same overall circuit topology, and similar component quality as our SFM-75 MKII, this unit should appeal to the cost conscious audiophile who has less demanding power requirements. This amplifier was demonstrated at the Winter CES driving APOGEE STAGE speakers!

PRICE : $2195 (5 year parts & labour warranty)

Please CALL, WRITE or FAX for information on our complete line of tube electronics products.
Pure tube for purists
Stereophile, June 1991

Sam Tellig

Hi-fi is supposed to be fun. A hobby. But it's amazing how seriously some audiophiles take it.

So this is an appeal to lighten up.

Several people who've been mentioned in my column have taken offense at my making light of their life with hi-fi. But all of us have moments when things go wrong and demonstrations go awry. And all of us have our foibles—or "fweebles," as Lars called them.

"Foibles, Lars, foibles. If you're going to use the word, you should learn to pronounce it."

Lars huffed.

"Oh, come on, Lars, I'm yust pulling your tail. You don't want to use the word and keep mispronouncing it, do you? I'm yust correcting your English for your own good. It's a nice word. I hope you use it well."

"Thank you."

Lars was mollified. (In fairness, it must be said that my Swedish is limited to one word—snallyorpin, which I gather means "cheapskate").

Brass Ear has his fweebles. He has trouble sitting still, for one thing. He plays one track from a CD, then jumps up and plays another. It's hard for Brass to listen to anything all the way through.

Also, Brass can't stop trading equipment, the way he trades cars for a living. But Brass just laughs. There may be something mildly neurotic about his trading, but basically, Brass has a healthy attitude: he doesn't take life—or himself—too seriously. And the truth is, he does have ears of gold, rather than brass. I respect his audio judgment very highly.

The other day, Lars and Lou visited while a manufacturer brought over a new digital processor. Brass couldn't be present because he was busy doing what he likes to do best: selling. In this case, cars. It was a Saturday.

My system sounded awful.

For some reason, the Adcoms never sounded worse and the processor—well, just about any digital processor sounds grundgy and hard when it isn't burned in or warmed up. That's why just about every processor manufacturer suggests that you leave the unit on all the time. Most don't even provide an off switch. (Do remember to use some kind of electronic spike protection.)

Lars and Lou—and the manufacturer—were not impressed by the sound. Brass called on the phone and Lars and Lou ranted about the sound. Then Brass got me on the line and gave me an earful. "You'll have to come over to my place and hear something good," he said.

"What speakers do you have this week, Brass? WATT Series Ills?"

"No, I sold the Series IIs and got a pair of ProAc Response Threes. The speakers are wonderfully smooth, detailed, musical—right up your alley."

"What are you trying to do—sell me the speakers?"

Now it was Lars's turn to laugh.

"I can't believe it. Brass just got the Response Threes yesterday," he said. "And now he's lining up a customer, the way he would for a car on the lot."

Brass overheard and roared with laughter.

"No, the speakers are really good," Brass said. "And you'll keep them forever? At least I hope you'll keep them long enough for me to come over and listen to them."

I asked Lars if Brass had another pair of speakers lined up.

"Arnie Balgalvis and I have been getting Brass excited about the Unity Audio Fountainhead Signatures."

"Has Brass heard them?"

"No," replied Lars, "but that's even better. We're actually trying to keep him from listening so he can imagine. It's good for Brass to imagine. That way the speakers can be really great."

"It's great having a friend like Brass, isn't it? We get to listen to so much stuff. No two visits to the Brass Home are ever alike."

I do have to get over to hear the ProAcs. Fast.

"Yack English is very fond of the ProAcs," said Lars. "I understand he bought a pair."

"Yack likes English speakers," I said.

Lars let that one pass, but Lou started laughing so hard he nearly spilled his beer.

"Some audiophiles are telling Brass he should be angry at you for all this kidding around," said Lars, a moment later.

"But the material is all true. You can't make this stuff up."

"I know. Brass thinks it's a scream. He's
CREEK MAKES MUSIC

Ordinary hi-fi calls attention to itself and draws you away from the music. When you are aware of this or that particular aspect of the sound, it's a clue that something's wrong. Why aren't you enjoying the music?

Creek products are built to be musical! Every circuit is designed, every part is selected for the purpose of making music. If you'd rather be caught up in music than hung up on sound, visit your Creek dealer now!

“A wonderful integrated amplifier capable of beautiful sound.”
—Neil Levenson, Fanfare Magazine

"...the Creek 4140s2 offers the greatest sound quality-per-dollar of any product from any electronics manufacturer, that I have ever heard."
—Bob Reina, Sounds Like... Magazine

ANYONE CAN MAKE HI-FI, CREEK MAKES MUSIC!

For more information and your nearest Creek dealer please contact:

Music Hall 108 Station Road Great Neck, New York 11023
TEL: 516 487 3663 FAX: 516 773 3891
famous. He walks into a room of audiophiles and people treat him like a celebrity. He loves it."

"Well, there are some folks I've mentioned in this column who don't love it. One of them in particular has extracted from me a promise never to mention his name again. He thinks I'm mean-spirited."

"I wonder who that might be," Lars said.

"Sorry, I can't say."

"You have to do something about those amps," Lars said, changing the subject.

"Your system doesn't sound too good today," Lou agreed.

I did the only thing I could do. I cursed under my breath, went to the fridge, and poured the guys a round of beers.

Several days later, the processor was sounding glorious and the Adcoms had never been better. The ice-cold processor, new interconnects, perhaps the speaker placement, whatever—all these circumstances had conspired to make my system sound, if not awful, then mediocre at exactly the moment my friends visited and rendered judgment.

You invite friends to hear your system at your own peril.

Gee—too bad Lars and Lou couldn't come over today. As the Adcom amps burn in, they sound sweeter and sweeter. You know why I like owning Adcom? I know my friends won't take me seriously.

Seriously. You know the trouble with owning really expensive—I mean super-expensive—equipment, aside from having to pay for it? You can get to feeling like you're some kind of god or guru—by virtue of having plunked down all that cash. You command instant respect from certain fellow audiophiles. You have credibility. Authority.

It seems to me that certain audio manufacturers are all too willing to exploit the combination of fat wallets and fragile egos. But do I detect a change in the wind—that people are no longer so impressed?1

Just think Bela Lugosi
I was going to introduce you to Wolf Man, but he'll have to wait. Let me tell you about Veektor instead.

No, not C. Victor Campos, of Adcom, but Victor Goldstein, of Transylvania. Well, actually, Victor Goldstein of New York City now. His birthplace was Transylvania—home turf of Count Dracula, one of my heroes.2

Victor Goldstein has a company called Fanfare International, Inc. and is the importer of the highly regarded Jadis amplifiers.

Victor called on the phone.

"Sam, you would not be-lieve. Ve have zees product from Japan called Miracle Damper. You put zees deeks (discs) on a speaker cabinet and ze resonances disappear. Dead, forever."

Like Dracula.

"Even more remarkable, Sam. Zees deeks can be used to treat myoo-sical instruments and can turn an ordinary violin into a Stradivarius. I swear to you, ze improvement is remarkable—three thousand percent."

Usually when Victor talks about an improvement, it is in percentage terms. He is fond of phoning Mario, "Mar-r-r-rio, I have made zees improvement in my seestem and you must come to bear ze difference—eez for-r-r-ty-two percent improved."

You get the gist. Victor is always a lot of fun—a genuine old-world charmer with the most gracious of manners. It is impossible not to like Victor. He could sell you anything.3

I suggested to Victor that he get a place to demonstrate the effect of the Miracle Dampers. Mario helped out by making available one of the studios of New York radio station WNCN. (Mario is Program Director.) About 30 critics assembled—mostly guys from the music mags. Arnie Balgalvis was there, and so was David Chesky, just to check things out.

First, though, I walked up to the WNCN receptionist to call on Mario. I was with my daughter. Both of us were wearing our Serious Listener ear extenders. I have the new, improved Mk.II version, which I highly recommend for Avery Fisher Hall and the Metropoli
tan or City Opera. (Seriously.)

The receptionist buzzed Mario: "There are two weird people for you who look like they just landed from the moon and they have funny things on their ears."

Mario groaned.

"That could only be Sam Tellig and Amy," said Mario, through the intercom.

Amy went to visit her former employers at

---

1 This may be just like the decline of expensive New York City restaurants now that the '80s boom is over.

2 I've actually traveled to Transylvania to check out the Count's—and Victor's—home turf. It is one of the most beautiful parts of the world. Dracula's castle is probably a fake, but it doesn't matter. The ride there and back makes the trip worthwhile: spectacular scenery.

3 The Count, too, had—or has—impeccable manners. No?
MAD magazine while I breezed over to the adjacent studio.

Victor greeted me at the door. I still had my Serious Listeners on, but I took them off for the demo.

"Pardon me, boy," I said. "Is this the Transylvania station?"

Victor introduced the two gentlemen from Japan, only one of whom spoke any English. They bowed a lot and looked very polite. It was too bad about the language barrier. Actually, they were probably very serious audiophiles and quite interesting—if you could converse with them in Japanese.

Victor had two pairs of B&W DM17 speakers—a black pair and a walnut pair. One pair was treated with the discs—applied to the inside of the speaker cabinet at critical points, found by the careful use of a tuning fork.

Victor played several CDs and was very gracious about playing some CDs that I and other members of the audience had. We went back and forth between the two pairs of speakers, and before long I had a very clear preference. One pair sounded dead—like all the life had been sucked out of it, if by a Transylvanian vampire. The box might have been Dracula's coffin. The other pair was much more lively, had better focus, more air—all that stuff.

Finally, Victor asked the assembled guests to vote for which speaker they preferred—a simple show of hands. Almost all of us voted for the wrong speaker—the one that hadn't been treated. (To be fair, there were a few—maybe three or four people—who preferred the treated pair.)

Victor began to get flustered.

"But ze treated speaker has more control. Ze sound is tighter," he started. (I may not have the words just right, but even Veektor admits I have the accent down pretty good.)

I turned to Arnie and said, in a voice about as loud as a stage whisper, "Veektor is trying to talk us into liking ze treated speaker."

Victor quickly recovered.

Next, Da Hong came forward to play the violin. Da Hong is Victor's service man—fixes tube gear. He is also an accomplished violinist. Here was the deal. We would compare a $125 violin purchased in a Tokyo department store, but treated with the discs, with Da Hong's 200-year-old French violin. Untreated, of course. (Da Hong isn't dumb.)

First, Da Hong tried to play the cheap violin. I say tried, because he just couldn't get going, the instrument was so awful. No matter how he tried, it sounded like a seven-year-old practicing—screchy, just terrible. Da Hong laughed and gave up. The audience was in stitches.

Then Da Hong took up the 200-year-old violin and continued the same piece. Da Hong played his heart out. The instrument just sang. The audience cheered.

Victor looked crushed.

But Victor has more lives than Count Dracula. He keeps coming back. He arranged for a member of the WNCN staff to play, in succession, two acoustical guitars—same make, same model. One was treated, the other not.

Clearly, the audience preferred one guitar over the other. One guitar sounded clearer, more focused. There was more—I don't know how to describe it, since I'm not a guitarist—but there was more character to the instrument.

This time the treated instrument won.

As I left the demonstration, I whispered in Victor's ear, "Veektor. Eez dezaster-r-r."

Victor seemed to sink into the ground.

But he was up again the next morning when I called to cheer him up. No, Victor will not be distributing the Miracle Dampers—not for now, anyway. And yes, he was grateful to us for attending the demonstration.

"Our pleasure, Victor. It was enjoyable as always."

And the truth is, the demonstration was not a disaster. First, the discs did have a very dramatic and noticeable effect with the speakers. So whatever this is, it is powerful stuff. If a designer were to use these discs when designing a pair of speakers, balancing the crossover accordingly, perhaps a very fine pair of speakers might result—something rivaling the Wilson WATTS, perhaps, for a fraction of the price. Just think if you could make a cabinet dead by sticking on a few half-dollar-sized discs. I do not dismiss the idea. In fact, I know of at least one highly respected speaker manufacturer who is busy right now fiddling with the discs.

The violin? Well, you can't take a $125 violin and turn it into a Stradivarius. But who knows? Maybe the discs could do something great for a more expensive violin. (I'm not suggesting that Da Hong stick them on his 200-year-old French violin.) The guitar sounded better after being treated, after all.

So I think you may be hearing more about

Stereophile, June 1991
Analogue Productions is a new Audiophile label dedicated to remastering classic LP's from the past in the highest quality possible—no expense spared.

Mastering by Doug Sax with tube electronics. Pressing by RTI on 100% virgin vinyl.

Numbered Limited Editions.

First Releases:

Virgil Thomson "The Plow that Broke the Plains" Leopold Stokowski conducting the Symphony of the Air
CD includes extra music—Stravinsky Suite from "L'Histoire du Soldat."
Both were mastered from Vanguard's original 3 track, 30 IPS Master tape that was originally recorded using Ampex 300 Series Vacuum Tube Machine. No noise reduction was used.
CD = CVAN 8013 $16 LP = APC001 $25

Coming Soon:

Gould Latin American Symphonette APC003
Songs of Auvergne APC002

ATTENTION:

Vanguard is in the process of reissuing their best titles from the original master tapes through tube electronics onto CD. The sound is marvelous.

ATTENTION LP LOVERS!

One of the best analogue recordings ever made is now available exclusively from Acoustic Sounds.

KLAVIER

Massenet Le Cid - Ballet Music. The City of Birmingham Symphony Orchestra conducted by Louis Fremaux.
This has been remastered by Doug Sax through tube electronics and made with the one-step process. This will be a numbered limited edition and is guaranteed to flay your pant legs and knock your socks off. We are so confident that this LP will blow you away that we will give you a full refund if you are not impressed with its sound. The Greensleeves reissue is on HP's hit list.
CD = CKLA 11007 $16 LP = AKLA 522 $25


WORLD'S LARGEST STOCK OF IN PRINT & OUT OF PRINT AUDIOPHILE

LPs & CDs

RCA LIVING STEREO- MERCURY LIVING PRESENCE-LONDON BLUE BACKS
NORTH STAR-LYRITA-CRYSTAL CLEAR-MOBILE FIDELITY-
REFERENCE RECORDING-WILSON-SHEFFIELD LAB-CHEVSKY-
PROPRIUS-HARMONIA MUNDI-BIS-HUNGARATON-M & K-OPIUS 3-
CONCORD JAZZ-CEMINI-WATERLILY-ODIN-DORIAN-CHANDOS-TEM-
DELOS-HYPERION-NITTY GRITTY-LAST Audio QUEST-TARGET

DMP-BAINBRIDGE-JAPANESE & BRITISH PRESSINGS-SUPER ANALOGUE-LINN
RECORD-AMERICAN GRAMAPHONE-CBS MASTERSOUND-
NAUTILUS-SUPER DISKS-UMBRELLA-EMI-CASINO ROYALE-
RCA-CARDES-ALBANY-NIMBUS-KLIMO-TELARC-HISTORY OF
RECORDED SOUND-INDIA NAVIGATION-CMP-QUARTET-KLAVIER-
ATRIA MASTERCUT-EAST WIND-BASIS TURNTABLE-GRAHAM TONEARM

• Largest inventory and finest selections
• Fast, efficient service
• We understand and cater to the wants and needs of audiophiles
• Newsletter published quarterly listing the latest releases so that you're the first to know
• LPs to fit every budget from inexpensive in-print to the rarest out-of-print

SHIPPING

Continental U.S. $3.00 for the 1st item; $1.40 for each additional item. Call us for shipping costs outside the Continental U.S.

Catalog $3.00 U.S. / $5.00 Elsewhere refundable coupon with catalog

ACOUSTIC SOUNDS

P.O. BOX 2043 • SALINA, KS 67402-2043 • USA
TELEPHONE: 913-825-8609 • FAX: 913-825-0156
TO ORDER CALL: 1-800-525-1630
these discs. Like Veektor, zey vill be back.

After writing it, I phoned Victor and read him this story, Transylvania accent and all. "I don't want you to be offended, Victor. It seems I've been making enemies."

Victor was laughing too hard to respond.

"But how will the readers get the accent?" Victor finally asked.

"Easy. Strange spelling and typographical tricks. Then I'll tell the readers to think Bela Lugosi. That's all."

Comrades!

Well, comrades, we did not go to Russia as scheduled at the end of March. I can think of a number of reasons why. The Gulf War. The unrest in the Motherland, which I would think makes a visit only more interesting. Recession. But if we had gone when we were supposed to, wow! We would have been in Moscow on price-rise day. We could have witnessed the misery firsthand. True, the price of records has gone up. No more one ruble, forty-five kopecks per disc. You missed the last day! But the ruble is now trading for pennies, so anything you can find to buy is practically free.

I'm going to try again. But no ads this time.

And perhaps not much lead time between the time the trip is organized and the time the tour leaves. So if you might be interested in my next trip, which will not take place in summer (too many things closed), but perhaps early this fall—or, even better, in the dead of winter, so you can really experience Russia—please write to Russia Tour, P.O. Box 1198, Ridgefield, CT 06877.

Aren't you curious about Russia? Wouldn't you rather spend money to go to concerts, tour the Kremlin and the Hermitage, and see Lenin's embalmed corpse than throw money at expensive hi-fi equipment? Wouldn't you love to come home with CDs made in Russia—with Cyrillic writing all over them? A fur hat from Gorky Street? Wanna see the Bolshoi opera and ballet... with a tour guide who knows how to get tickets even when Intourist says "nyet"?

Don't say "Da." Not just yet. Just write and say "mojet bweet"—that's "maybe" in Russian—and I'll rush you details when available. People of all ages welcome. Travel arrangements by Finnair—splendid airline. My daughter—who is fluent in Russian, and who lived several months in both Moscow and Leningrad—may be accompanying us. Do it. Write now.

...humanizing the digital world...

micromega compact disc playing systems are distributed exclusively in the USA by versa dynamics inc. Malvern, PA USA (215) 251-2512 • S.C.E.S. at Hilton # SJ
STEREOPHILE'S 2ND LP!
All-analog vacuum tube recording!

INTERMEZZO
Brahms
Piano Sonata in f, Op. 5
Intermezzo, Op. 117, No. 1
Robert Silverman, piano

Order Copies of the
LIMITED EDITION FIRST PRESSING
Directly from Stereophile!

The moment your stylus drops into the groove of this new all-analog, vacuum tube recording, you will know that this is among those rare recordings which captures, with breathtaking realism, the "palpable presence" of a live performance. Your speakers and amplifiers will disappear and your entire system become a musical instrument.

Now, for a limited time, you can own copies of the historic FIRST PRESSING. Purchase extra sealed copies (while you can) for your own archival use and to give as gifts.

Recorded by the legendary recording engineer Kavichandran Alexander at Santa Barbara's Universalist Unitarian Church, this new release features the internationally famed Canadian pianist Robert Silverman. The program combines early and late piano works of Johannes Brahms. Luxuriate, as we did during the recording sessions, in the majestic warmth of the 9' Steinway "D" concert grand in a natural acoustic—captured by two tube microphones designed by Tim De Paravicini and an Ampex MR70 tube tape recorder.

This recording—supervised by Stereophile's editor John Atkinson—is as close as you can come to a live experience. Thrill to the sound of the Steinway and the natural decay of the notes, captured as only vacuum tubes could! Don't miss this transcendent musical experience: it represents what the audiophile pursuit is all about. Listen at night, with the lights dimmed. This is why you are a music lover...and an audiophile!

RESERVATION APPLICATION

Please mail as quickly as possible. LIMITED EDITION FIRST PRESSING limited to 3,000 numbered copies.

I wish to order INTERMEZZO, Stereophile's new all-analog LP recorded with vacuum tube microphones and tape recorder. I understand that the historic first pressing is limited to 3,000 numbered copies.

Subject to availability, I want ________ copies

x $24.95 each = $__________

SHIPPING & HANDLING + $3.50

TOTAL $__________

Name ________________________________
Address _____________________________ Apt. # _________
City __________________ State _______ Zip _________

Payment enclosed

CHARGE MY: ☐ VISA ☐ MasterCard

Account # __________________ Exp. Date ____________

Signature ____________________________

Stereophile, 208 Delgado, P.O. Box 1529, Santa Fe, New Mexico 87502
Inclined to ELEGANCE? Consider upscale™ component display system

Elegant, functional and **infinitely adjustable**, UPSCALE is completely **modular**. Buy only what you need whenever you want!

Start with the 60” high, vertical steel support rail attached to a 22” W x 17” D x 1¼” H MDF base. A cushioned pod near the top of the rail rests on the wall. **Two Super Spikes** under the front of the base complete an easy to level, **rigid** 3-point support system.

Component shelves and isolation platforms securely attach at **any** point on the rail, by means of special steel brackets. **Construction** is satin black 5/8” MDF, 19” W x 15” D. Each shelf/platform **holds 125 lbs.**

The isolation platform, especially recommended for tube components, consists of 2 component shelves with ZORBEX™, a new material with **Incredible vibration absorption** properties, sandwiched between.

Support Rail & Base  
$250 + $7.50 pph  
Isolation Platform  
$100 + $3.00 pph  
Component Shelf  
$60 + $2.50 pph

CHECK OR MONEY ORDER ONLY (No Credit Cards or C.O.D.s).

DEALER INQUIRIES INVITED

ARCICI, INC.

Box 502. Ansonia Station  NY, NY 10023  212/724-6021  Fax 516/581-7006
The Ultimate in Ribbon Technology on the Ultimate Substrate: ‘Real Granite’ Audiophile & Dealer Inquiries Invited

Dealers: Call for your special CES program
Parasound announces our world-class amplifier, designed by John Curl.

World-renowned over 20 years for his brilliant advances in high-end audio. You can feel his genius in the stunning new HCA-2200.

Hear it now.

- 50 amp continuous, 90 amp peak current
- 220 watts/ch. 8Ω, 365 watts/ch. 4Ω or 2Ω
- 750 watts mono 8Ω, 1,000 watts mono 4Ω
- 130V/μsecond slew rate, DC serve coupled
- Dual-mono twin 1200VA toroid transformers
- 100,000mF computer grade capacitors
- Independent regulation of Mosfet drivers
- Matched complementary J-FET inputs
- 24 B-matched 60MHz, 15A output transistors
- Balanced XLR and gold unbalanced inputs
- Two pairs of 5-way terminals for bi-wiring
Enough is enough. Everyone likes a good fight now and then. Controversy is, after all, the stuff of which great news reporting is made. But this contretemps, imbroglio, melee, or family feud (what it is seems to depend on who you talk to) over the appropriateness of Stereophile reviewing and recommending audio components sold directly to consumers by manufacturers or mail-order houses which bypass the traditional high-end dealer network really has gone far enough. It is always appropriate for the press to say whatever it wants. That is the basis of a free society. It can do so pretty much without fear of retribution, regardless of how stupid, misconceived, or insensitive it is. The press can be wrong. In this matter it certainly is.

John Atkinson was kind enough to let me review the letters which would be appearing in this month's issue of Stereophile concerning the matter at hand. They fell into two major categories. In the first, consumers angrily accused retailers of whining when they complained about the direct-marketing practices of certain companies, while at the same time presuming to substitute their own judgment for that of the dealers. I wonder how they feel when faced, in their own fields of endeavor, with second-guessing and Monday-morning quarterbacking by well-meaning aficionados. Educated consumers often fail to realize that the system they purchased that was right for them isn't necessarily right for their friends. Objectivity is difficult for both retailers—whose perspective is necessarily affected by the profit motive—and for knowledgeable amateurs who, in need of a psychological validation that their own decision was the right one, want to make sure it is followed by others. In this instance, a local high-end audio dealer's profit motive is more likely to produce the better result because his business is based, for the most part, on word of mouth. One dissatisfied customer results in, at the very least, a dozen lost sales. In a free-market society there is no greater guarantee of integrity than knowing that failure to exercise it will lead to loss of revenue. I put it to you: Who is more likely to take particular pains to assure satisfaction? The audio maven whose reward is purely psychological, or the responsible high-end retailer whose livelihood depends on it?

My customers are some of the brightest, best informed people I know, experts in their own professions or businesses. They are, by the time they have made a few purchases from my store, exceptionally grounded in hi-fi. Even so, they are wise enough not to second-guess us. They refer customers. They recommend the store. They may make suggestions. But they never presume to substitute their own decisions for mine or the person they've recommended to see me.

The other category of letters came from direct-marketing companies attempting to defend the validity of their approach. In most cases I was struck by the eloquent fashion in which they sought to justify and even advance the case for shop-at-home audio. Were I a judge at a debate between high-end retailers and direct-mail companies, at this point I might score it about even. This is so because even though the hi-fi retailers made the far better logical arguments, the anger and frustration displayed in their letters clouded the issue. I can't blame them. I feel the same way. All the work; all the effort put in over the years to develop and hone the skills necessary to create, demonstrate, and install audio systems that make music; all the confidence that customers have placed in them; all threatened by somewhat less than responsible journalism and companies clearly hoping to exploit the I-can-get-it-for-less greed factor inherent in all human beings. My colleagues' reactions display a fundamental error in judgment. By attacking a flea with a howitzer, they have caused an unusually large amount of free publicity to be focused on what is and what will remain an inconsequential part of the real high-end audio market. Moreover, a quick read of the dealers' letters and the mail-order companies' responses seems to cast the direct-mail folks as the underdog—and we know how much the American public loves underdogs. We retailers come off a little oversensitive and perhaps a little grasping, even though we are

1 Of Sound by Singer; 18 East 16th Street, New York, NY 10003.
Golden Dragon Precision Audio Tubes

To attain a premium tube, sonic quality must be designed in from the start. As with any fine audio component, vacuum tube design is both an art and a science. With the closing of the legendary tube manufacturers it seemed that the magic combination would be forever lost.

Fortunately, a group of British audiophiles and engineers, formerly with such tube greats as M-O Valve, Mullard, Brimar, and Hi-Vac, have worked diligently with the Shuguang tube factory in China to create tubes of the highest sound quality and reliability. No aspect of design or performance has been neglected. Countless prototypes were auditioned in the creation of custom audio tubes that rival the finest ever made. The results of these efforts are now available as Shuguang Golden Dragon audio tubes.

Most of the design features responsible for superior sound and reliability are not visible upon external examination, but are detail variations of dimension and material within the metal structure of the tube. By exclusive contract with Shuguang no other tube may incorporate any of our unique design details.

You will hear the difference.

Golden Dragon Precision Tube Prices (matched pairs)

<table>
<thead>
<tr>
<th>Tube</th>
<th>Price</th>
<th>Tube</th>
<th>Price</th>
<th>Tube</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>12AT7A</td>
<td>$10.00</td>
<td>EL84/6BQ5</td>
<td>$16.00</td>
<td>2A3</td>
<td>$80.00</td>
</tr>
<tr>
<td>12AU7A</td>
<td>$10.00</td>
<td>EL34/6CA7</td>
<td>$35.00</td>
<td>2A3 Octal</td>
<td>$80.00</td>
</tr>
<tr>
<td>12AX7A</td>
<td>$10.00</td>
<td>6L6GC</td>
<td>$35.00</td>
<td>211</td>
<td>$110.00</td>
</tr>
<tr>
<td>6DJ8</td>
<td>$15.00</td>
<td>6550A</td>
<td>$60.00</td>
<td>300B</td>
<td>coming soon</td>
</tr>
<tr>
<td>KT66</td>
<td>$40.00</td>
<td>811A</td>
<td>$45.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KT77</td>
<td>coming soon</td>
<td>845</td>
<td>$150.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KT88</td>
<td>$80.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each tube carries a three month warranty.

Exclusive distributor for the United States:

Tubes by Design

P.O. Box 48865, Sarasota, FL 34230-6865, Telephone 1-800-424-3575
Dealer inquiries welcome
anything but overreaching in practice.
However, this is not a debate; this is real life. And ladies and gentlemen, boys and girls, you can intelligently buy a lot of things by direct mail. High-end audio just doesn’t happen to be one of them.

I just love the L.L. Bean catalog. I often buy a sweater or two; pens, pencils, Ginzu knives, juicers, lingerie, and even some inexpensive electronic devices, the performance of which can be gauged by a simple objective standard (ie, pencil sharpeners, calculators, etc.), come to mind. With high-end audio, however, the process from selection through installation is simply too complex to lend itself to long-distance do-it-yourself operations. Assuming, of course, that the goal is to produce a hi-fi that makes the best possible sound in a given location.

Arguments pro and con have been advanced by both sides. Point and counterpoint have been taken. I can add little to this except to say the following. Even assuming equal expertise, equal experience, equal accountability, and equal integrity, what is eminently clear is that there is no substitute for being there. Some essential services that a local high-end dealer can deliver because of proximity and style of operation cannot be reproduced by any direct-marketing outfit. These services are critical to creating the best possible sound system. They include selection. If you can’t hear it, you can’t know whether you like it. How can you tell whether a given component is the best choice for you unless you have the opportunity to audition it in a system similar to your own and in comparison to at least a reasonable sample of similarly priced components?

Any decent high-end audio dealer has such facilities. No mail-order company does. As any “tweak” will tell you, the setup of an audio system is half the battle: set up at a store level so that you can evaluate components used as they were intended to be used. And, most importantly, set up an installation at home so that what you hear there is at least as good as what you heard in the store in the first place. Moreover, a professional installation usually avoids the thousand and one problems which can arise in connecting up a new system, or even adding a new component, by preventing them from happening in the first place. True, many problems can be solved on the telephone. However, all too many times the determination as to whether a given component is in fact faulty, or whether there is a compatibility- or installation-related issue causing a given problem, can only be determined on-site with professional trouble-shooting. Anyone who has had to chase down a grounding problem or crosstalk a system plagued by RF or magnetic-field interference knows how true this is.

The only area in which mail-order companies can outperform hi-fi specialty retailers is price. Whether this is the case because of mail-order resellers’ lower overhead or "perceived" lower prices from direct-to-consumer sales by manufacturers, there is no question but that the direct marketer can charge a lot less than a full-service retailer and make the same amount of profit. The choice is up to you. Do you want better sound? Or do you want what seems to be lower prices? In the long run, the two are truly mutually exclusive. Remember, the lowest price often is not the best price.

Music to your ears

ARCAM

Audiophile Products

By A&R Cambridge

Arcam has a 12 year record of building affordable, no nonsense, performance hi-fi products. Arcam Amps, Tuners, CD players & Outboard D to A Converters are famous for design and construction quality that insure great sound and a lifetime of listening pleasure. Elegant in its simplicity, an Arcam in your system is "music to your ears."

Audio Influx Corporation

Importers of Audiophile Products

P.O. Box 381 Highland Lakes N.J. 07422 (201) 764-8856

Stereophile, June 1991 105
Introducing Renaissance: The rebirth of tube amplifiers.
Renaissance Series.
The genius of VTL, the elegance of real wood, and power to spare. From just $899.*

Now you can own one of the world’s best sounding stereo amplifiers for one of the world’s lowest prices. Audio Advisor is proud to introduce the new Renaissance Series from Vacuum Tube Logic (VTL), unbelievable stereo and mono amplifiers that any audiophile can afford.

We cut the price. Not corners.
You may think that for these incredibly low prices, you’d get stripped-down basic amplifiers. Not true! Renaissance Series amps are beautifully made, inside and out. Note the protective wire cage. The beautiful hand-finished, real wood side panels—in your choice of American oak or incredible exotics such as Persian walnut, Asian teak, or South American padouk. All at no extra charge.

Inside, you’ll see the same tough standards that have made VTL famous. Military-spec circuit boards. High-quality caps. Special wiring. And VTL’s own unique, world-renowned, ultra-low-noise transformers.

And we didn’t compromise the sound.
Renaissance Series amplifiers bring you sound re-born through tubes. From the intimacy of solo guitar to the majesty of a full symphony orchestra, these amps bring you closer to the musical truth than any others, even at double the price. You’ll enjoy liquid midrange, crystal clear highs, and tight bass. You’ll forget the equipment and simply enjoy the music. And that’s as it was meant to be.

Power to spare.
With over 70 watts of tube power, the Renaissance Stereo 70/70 can easily drive even hard-to-drive, expensive audiophile speakers. The Renaissance Monoblock 80s, with discrete chassis and power supply design, actually sound like double their rated power—even into finicky, low-impedence speaker loads. And with either Renaissance amplifier, bass is tight and powerful.

No-risk 30-day guarantee.
You can’t hear Renaissance Series amplifiers in any store—but you can hear them in the privacy of your own home. Audio Advisor offers these exciting new amplifiers to our customers with a no-risk, 30-day guarantee. Try Renaissance with your own equipment and your favorite material. From the challenge of Shostakovich to the romance of Robert Shaw—you’ll hear your music revitalized. If you’re not completely satisfied—in fact, thrilled, with what you hear, your money will be cheerfully refunded.

• Save $100 with special introductory offer.
If you hurry and purchase a Renaissance Series Stereo 70/70 Amplifier during this special introductory period, you’ll save $100 off the regular price. But please “hurry”—offer limited to the first 100 amplifiers ordered.

VTL Renaissance Stereo 70/70 Amplifier
Over 70 watts per channel into 8 ohms.
Size: 15.5" wide, 10" deep, 7" tall. 40 lbs. Regularly $999. First 100 ordered, only $899. Please add $20 for shipping.

VTL Renaissance Series Monoblock 80s
Over 100 watts per channel into 8 ohms.
Size: 15.5" wide, 10" deep, 7" tall. 35 lbs. ea. $1499 per pair. Please add $40 for shipping.

Warranty
Three years on solid state elements, 90 days on tubes, and lifetime on transformers, circuit boards and chassis. All service work performed by Audio Advisor, Inc.

CALL
1-800-942-0220
TOLL-FREE!
American Express, MasterCard, Discover and VISA accepted.

Not a store. More.

225 Oakes, SW
Grand Rapids, MI 49503
616-451-3868
FAX 616-451-0709
I dedicate this article to my Mother, who passed away recently. Without her loving support, I would not have come to embrace the world of music as intensely as I have. May the strains of Percy Grainger's "Country Gardens" be with her always.

—GL

St. Louis! Resting on the West bank of the mighty Mississippi, St. Louis represents the gateway to the West. A majestic, steel arch (described by some as the world's largest croquet wicket) stands, symbolically, as testimony to this fact. St. Louis is home to the Cardinals, Budweiser, and the Saint Louis Symphony. In 1904, it was the site of one of the grandest of World Fairs. Today, as you'll see in this article, St. Louis is a gateway to vinyl paradise, with thousands of LPs awaiting discovery by the adventurous devotee of tracks on wax.

Having been born and raised in St. Louis, I was familiar with record stores in the area—my LP collection is largely the result of my exposure to them. I was eager, on this return trip, to visit old haunts (if they still existed), discover new sources, and share those adventures with my readers. With the loan of a friend's car, I was all set to begin my exploration early on one of those typical St. Louis "crap-shoot weather" days. (Tornado watches, rarely broadcast in Santa Fe, are frequently heard in the St. Louis spring.) First stop, because it was close to where I was staying and opened at 9:30, was Streetside Records at 9901 Watson Road, just a few blocks West of Crestwood Plaza shopping center. Streetside Records has been an institution in St. Louis for several years, serving music lovers well with an extensive selection of all types of music on LP, CD, and cassette. The store has expanded from its original location in the Delmar Loop into eight St. Louis-area stores (as well as one in Fairview Heights, IL). Not too many years ago, I used to spend a lot of time in the Loop store's classical music room picking up imported LPs on the Philips, Argo, Harmonia Mundi, L'Oiseau-Lyre, and Telefunken labels. I spent an equal amount of time in the main section of the store where new and cut-out jazz, blues, pop, and rock were located. At one time, Streetside had access to several major cut-out houses; their jazz buyer kept the bins filled with Savoys, Blue Notes, and Atlantics. When I would shop here with friends, it resembled a feeding frenzy in a pool of sharks. Little did we then know of the fate awaiting the merchandise before us.

Unfortunately, I found little of interest in the Crestwood store while browsing through the few bins of new and/or cut-out LPs. If it's vinyl you're after in St. Louis, you can pass on this one. But just a few doors west of Streetside Records, at 9927 Watson Road, is a small shop called Got It! They didn't open until noon, but what I saw through the window looked promising. Lining the walls and filling several long browser bins were LPs—lots of LPs. I made a note to return when they opened. Heading east toward the city, I stopped by Flip's Stereo Place (a long-time source for high-end in St. Louis) at 9556 Watson Road to say hello. No one there until noon, so I went for a cup of coffee to wake me up and plan my strategy for the next few days.

Returning to Got It!, although they've only been open for a couple of years, this is the kind of store that makes a trip like this worthwhile. Neatly and alphabetically arranged in the bins were hundreds of rock, C&W, pop, jazz, and classical LPs. In another section of the store were bins of bargain records (mostly rock) priced from $5 each to 2 for $5. A casual examination revealed these records to be in excellent shape, especially for the price. The other records varied in price and condition according to rarity and/or desirability. (In St. Louis, a local rock radio station, KSHE, has published a list of what they consider to be rock "classics." Naturally, these records will command higher prices in St. Louis—but only in St. Louis. Just tell a St. Louisan a record is a "must have" or a "classic" and watch demand and price skyrocket.) For the most part, gaps in your collection could be filled here for between $4 and

Stereophile, June 1991
$6. There were a few hard-to-find Japanese rock imports and several original Frank Zappa LPs in a separate bin at the front of the store. Prices on these, though not cheap, were as good as I saw in St. Louis. Two LPs I was particularly interested in finding were John Hiatt's *Bring The Family and Slow Turning*. (Songs like "Lipstick Sunset" and "Icy Blue Heart" hit me where I live—I require regular doses of Hiatt to clear the cobwebs out of my mind.) Got It! struck out on both. There must be a run on Hiatt vinyl these days, a thought confirmed by proprietor John Frese, who said they go out as soon as they come in. Well, my hunt was only beginning: I had many stores to hit before heading home. Regardless, I recommend you drop into Got It! when in St. Louis.

My stomach told me it was time to refuel, so I headed East to an eatery I sorely miss in the desert southwest—Steak 'n Shake. A veritable institution in St. Louis, Steak 'n Shake has been serving their unique burgers and hand-dipped shakes for what seems like forever. Prices were a bit higher than I remember, but I consumed the petite fries with passion, the chocolate shake was delicious, and the burger satisfied like no other. It had a melt-in-your-mouth quality which filled the void in my stomach perfectly. Just like the old days. With my energy renewed, I headed back to Flip's Stereo to say hi.

It was nice to see Flip's carrying on the tradition of high-end audio in St. Louis. On display in the bright, spacious showroom were loudspeakers by Vandersteen, Magneplanar, B&W, Phase Tech, and Klipsch. Electronics shown were Yamaha, Adcom, Denon, Aragon, Acusus, and Mark Levinson. In the West corner of the showroom were a pair of speakers I haven't seen in quite a while—Klipschorns. Their highly polished walnut cabinets reminded me of the good ol' days of hi-fi when Marantz (*the* Marantz) was available, McIntosh was still making tube equipment, and Klipsch and Bozak were the contenders in loudspeakers. (Remember the Bozak Concert Grands?) In back is the dedicated high-end listening room with Mark Levinson electronics, Proceed digital, and Magneplanar 3.3s. I didn't have time for a listen, but was encouraged to see a dealer concerned enough about his customers to provide them with a comfortable auditioning room with plenty to read—Flip's sells both *Stereophile* and *The Absolute Sound*. Incidentally, Flip's had a pair of used Quads for $600. Might be worth checking out.

It's only a five-minute drive from Flip's to the heart of Webster Groves where you'll find Webster Records, another Streetside Records, and a relatively new high-end store, Music For Pleasure. The Streetside Records at 34 South Old Orchard proved as disappointing as the store in Crestwood. What LPs they had were found upstairs, stuck in a few browser bins. I found a slightly better selection of new records here (even some classical), but located nothing special. Pass on this one. Webster Records has moved across the street to 117 West Lockwood into what appears to be much larger quarters. The store is bright and cheerful and, as I remembered, has an extensive selection of new big-band LPs. Four bins-full of all the famous (and not so famous) names can be found here, often released on small, independent labels. I found no rock LPs in this store, but I did dig up male and female vocalists, jazz, and some classical recordings. I found a mint-condition, original stereo pressing of the Dave Brubeck Quartet's 1958 Newport Jazz Festival performance, along with the hard-to-find Columbia Masterworks OST recording for the film *Jack Johnson*, with music by Miles Davis. There were very few used LPs in Webster Records, but the ones I bought were in excellent condition. Worth a visit when in town, especially if you're a big-band fan.

Just a few doors down from Webster Records is Music For Pleasure at 113 West Lockwood. They bill themselves as "St. Louis's Premier Stereo Shop"; I saw Rega, Linn, Naim, Creek, Hafler, Mod Squad, Royd, Philips, and Acoustat on display in this cozy, attractive store. A dedicated listening room is at the rear, and good-
sounding music was heard through Naim electronics with a Linn front-end and speakers. Linn Selekt records and Rega Inspirit records are sold in the store. Craig Gulley, Music For Pleasure's president, gave me a copy of 7 To Midnight by the English group Pyewackett from Rega. This is one zany record. The music is mostly creative and fun arrangements of old English dance tunes first published by John Playford in 1651. Pyewackett presents the listener with a tossed salad of instrumental timbres as they go about their merry music-making. All manner of hammered, struck, plucked, squeezed, and blown instruments are heard in absolutely marvelous sound on dead-quiet surfaces. A real sleeper, and one I will happily add to my collection of reference recordings. Thanks, Craig. I recommend you send for a list of recordings and visit Music For Pleasure when in St. Louis. (Music For Others, at 107 West Lockwood, imports Rega and Royd in the US.)

It's a short ride from Webster Groves to Maplewood, where Disc-Connection is located at 7365 Manchester. The shop is small and in need of some housekeeping. It also needs some stock, for what I saw there was disappointing. I have more records in one of my record cabinets than they had in the entire store. Most of the LPs were rock. There was a handful of blues and no jazz or classical. Prices were not attractive at all, generally a dollar more than I had seen for the same records elsewhere. The records I examined were not in the best shape, either. I didn't find the Hiatts, and left with only dirty fingers. If you happen to be in the neighborhood of Disc-Connection, you might stop in to browse. Otherwise, I wouldn't make a special trip. Disc-Connection has another store in Overland, at 10546 Page. It was even more disappointing, with even fewer LPs. What they had were mostly cut-out "stiffs" which nobody would want. Definitely a waste of time.

Feeling somewhat daunted, I decided to hit what has been for many years the record shop with a difference—Vintage Vinyl. Co-owners Tom Ray and Lew Prince started out selling LPs off the tailgate of their stationwagon at the Soulard farmers' market. They kept selling all the records they had and eventually opened a store in the Loop on Delmar in University City. It soon became the place to be on a Friday or Saturday night (when closing time wasn't until midnight). I worked for Lew and Tom briefly and owe a lot of what I know about recorded
Browsing through Bose Express Music Catalog is like having an enormous record store all to yourself. You can shop for the music you want, when you want it. We carry everything in print in Classical, Jazz & Rock. You will find it all in our 240-page, 50,000-title catalog.

We carry the complete catalog of all classical labels including DG, Philips, Angel, London, Chandos, Harmonia-Mundi, Nonesuch, Telarc, Dorian, Verona, and over 1000 independents. Ordering from us couldn’t be easier. Call, or send the order form to us by fax or mail.

A one-year subscription is $6. Your first issue includes a refund certificate for $6.00, plus $50.00 in additional merchandise credits. There is no purchase obligation or unrequested shipments.

Any CD in Stereophile $13.99

Subscribers may order any title in this issue for $13.99/CD (for CDs regularly priced less than $17) + $3.95 S&H per order.

$3.99 Dorian CD Sampler

This all-digital Dorian Recordings sampler (normally $12.98) contains complete and unabridged versions from eight CDs, including three selections from the acclaimed English Lute Song, the majesty of a Bach masterpiece, plus additional selections.

1-800-233-6357

Subscription / Mail Order Form

- Start Updates & send 240-page Catalog ($6.00/yr., refundable on your first order from the catalog)
- Send me the Dorian CD Sampler ($12.98 or $3.99 with subscription) (51776)
- Send me the attached list of recordings (include artist, & title) I'm enclosing payment + $3.95 for S&H per order. Music Orders Only
- Check or ___Credit Card ___Visa ___MC ___AMEX

# ____________________________ EXP ____________________________

Name _______________________________________________________

Address _____________________________________________________

City/State/Zip _______________________________________________

CALL OR MAIL WITH PAYMENT TO:

Bose Express Music, 50 W 17th St., NYC, NY 10011 1-800-233-6357
THE CD PLAYER.

"It's fair to say that the Rotel RCD 855 is the steal of the century... Musically, the RCD 855 is very refined, with a degree of transparency and harmonic neutrality found only with the real expensive stuff... As an integrated unit, the 855 is truly extraordinary."

Lewis Lipnick
Stereophile Vol. 13 No. 7, July 1990

"It's rare to find a product that offers so much music for so little money as the Rotel RCD 855... One would have to spend a thousand dollars, however, to better the RCD 855's performance."

Robert Harley

"In fact, it is one hell of a player at the price."

Martin Colloms

THE ONLY REAL COMPETITION.

"The winner of the WHAT HI FI? Best CD player award is the Rotel RCD 865... All those positive aspects of the PDM (Bitstream) sound—the spaciousness, effortlessness, and fluidity—combine here to afford a honey sweet sound that is, quite literally, music to the ears!... So it's only fitting that this excellent silver spinner is rewarded with the high accolade of BEST CD PLAYER."

Winner: Best CD Player
Awards 1990, WHAT HI FI? (U.K.)

Rotel of America
P.O. Box 653
Buffalo, N.Y. 14240
(416) 751-4520

ROTEL RCD 855

Rotel®
Better Sound. Best Buys
music to that experience. It was an education you couldn't buy at any price. I can still remember the sights and sounds of those Friday and Saturday nights when the store was jammed, elbow-to-elbow and butt-to-butt, with music lovers browsing the record bins. The store's stereo system was always going full blast: James Brown or reggae if Tom was working; folk, jazz, or classical if Lew was in charge. Whatever your musical taste might be, Vintage Vinyl was the place to shop for the bargains and records you'd be unlikely to find elsewhere. The jazz, reggae, blues, and soul sections were the best in town. These guys knew how to buy! Yes, you usually left the store with dirty hands—but a lot happier, clutching your newly found treasures under your arm.

Well, wouldn't you know, my visit to St. Louis coincided with Vintage Vinyl's move to a new location at 6610 Delmar, just a few blocks West of the old store. What used to be a drug store is now being made over into the new, much larger, brighter, and cleaner Vintage Vinyl. If you're into frottage you'll be out of luck, for the aisles will easily accommodate two people abreast. The store was busy even with the confusion resulting from moving and setting out thousands of LPs, CDs, and cassettes. Hundreds of records in crates lay under the browser bins waiting to be put out. (Like the good ol' days, I was soon browsing on hands and knees. No John Hiatts here either.) At the rear of the store carpenters were busy building even more record racks and browser bins. I'd love to see the store when the construction and move are finished.

Vintage Vinyl also has a store across the river in Granite City, IL. Time constraints didn't allow a visit, but I understand the Granite City store is as large as the old store, though with a somewhat different music mix (more "pop" rock). Lew Prince told me business was booming over there too. Who said the market for LPs is dead? You wouldn't know it spending an evening in Vintage Vinyl. Need I say it? Vintage Vinyl is a must stop when in St. Louis.

Before leaving the Loop in University City, I stopped at the main Streetside Records store at 6314 Delmar to see what changes the CD revolution had wrought on what was once one of my favorite new LP stores. The store was virtually unrecognizable! Gone was the separate room for classical music. In its place was the last of the store's LP collection, a mixture of

Webster Records' big band bins (top); Record Exchange's Gravois location.
I have to say that the AE1 is one of the finest, most transparent cone speakers I have heard.
...As far as I'm concerned, it redefines the art of miniature speaker design.

This is without doubt a wholly remarkable loudspeaker, and a stunning endorsement of the well developed metal cone bass units.
...on current showing the state of the art miniature, bar none.
...to the author's knowledge, the most awesomely dynamic and articulate miniature ever made.
Alvin Gold, Hi-Fi Choice, Jun 1988

ACOUSTIC ENERGY

For information call:
Acetrain, Inc.
(800) 527-7161
pop, rock, C&W, blues, jazz, and international, all easily contained in six record racks. A bin of bargain records was located in a different part of the store, but to label those records as "bargains" stretches the meaning of the word. Sad to say, the old Streetside Records is not what it used to be. While in the area, check out the Campus Bookstore at Washington University. As I write, they're closing out their remaining LPs, now sadly confined to a few racks. (There was a time not long ago when the Campus Bookstore had one of the best selections of imported classical recordings in the city.)

Euclid Records was another of my favorite hangouts when I lived in St. Louis. Owner Joe Schwab has a knack for stocking records you would not likely find at other stores. What Euclid Records lacked in quantity it made up for in quality, with an especially extensive and impressive jazz selection. Euclid Records has also moved from its former location, just down the block and around the corner to 4906 Laclede. The store is larger and a bit more cavernous than before, yet maintains the atmosphere of intimacy I remember from the past. The browser bins extend from just inside the front door to the rear of the store, many feet away. The bins are also at just the right height for comfortable browsing. (At least for me; I hate having to stoop over to look for records. I find, as I get older, it is much more difficult to straighten up afterward. I spend bours looking.) In addition to the wonderful jazz selection, I found the folk, reggae, blues, and rock impressive. Some classical was on hand, but nothing to write home about. Alternative music is also well represented. But again no luck with the Hiatts! Euclid Records is another must stop for those visiting St. Louis.

West End Wax, not far from Euclid Records at 389 North Euclid Avenue in the fashionable West End of the city, proved a big disappointment. Where just a few years ago West End helped me increase my collection of Celtic and classical music, today CDs and cassettes have taken over the store; the few records I found were mostly 12" dance singles stuck randomly in cardboard boxes on the floor. Don't waste your time on this one.

Instead, plan spending several days visiting the six Record Exchange stores. It's difficult to explain the overwhelming sense of awe I experienced when confronted with this many records. Their ad says they specialize in out-of-print music from the '40s, '50s, '60s, '70s, and '80s, both new and used. They also sell CDs, cassettes, 45s, and 78s. I guess, from my brief visits to several of the stores, the LP inventory approaches half a million. The owner, Jean Haffner, says he stocks over one million 45s and would like, one day, to have them all accessible to his customers. Good luck, Jean! (And the Frank Sinatra Nice n' Easy sounds great in ungimmicked '60s stereo.) The main store at 5840 Hampton is spacious, well-lit, clean, orderly, and has LPs everywhere, arranged according to category. C&W and classical have separate rooms—filled with records. The classical is in no particular order, but I was stunned at what I saw while browsing. Old and new, mono and stereo, and boxed sets, all overflowing the bins, set this writer's head spinning. Had I wished, I could have easily devoted the rest of my stay in St. Louis to this store alone. The soundtrack section was huge, containing more records than some entire stores I visited. The jazz and rock sections were comprehensive; a casual browse brought to light albums by artists whose absence was conspicuous in other stores. No John Hiatt, though I did find a couple of Frank Sinatra albums which had been on my want list for some time (the sultry, melancholy Sinatra of early Capitol days, not the "pop" Sinatra of the later Reprise years.) The staff at Record Exchange know their records, so you won't find any great "deals" here. The prices are fair: $5--$7 should get you your "everyday type of record" in very good to excellent condition. Incidentally, every LP in the store is stored in a plastic outer sleeve which helps protect the album jacket. After all, part of the fun of record collecting is appreciating the cover art and liner notes (without having to use a magnifying glass). While in St. Louis, I visited four of the six Record Exchange stores. (There's a Record Exchange in Carbondale, IL, a college town about 145 miles south of St. Louis.)

Each of the Record Exchange stores is well-lit, clean, and protects their records in those plastic sleeves. The store at 4547 Gravois, just east of another St. Louis landmark, the Bevo Mill, specializes in recordings made before 1965. (No CDs or cassettes to be found here.)

I don't care what you say, Guy. The Reprise Sinatra's Sinatra, with Nelson Riddle recreating the classic scores, is still my favorite from the Hoboken Howler. Check out "I've Got You Under My Skin" for perhaps the ultimate swing arrangement.

—JA

Stereophile, June 1991

115
Other Manufacturers Have Been Fishing For Our Chips.

Each Altis Audio Bitstream digital decoding processor incorporates the exclusive, proprietary Altis Chip. This Altis Chip is the mirror image of our encoding chip developed for the recording industry. With an Altis decoder, you can have Bitstream in, Bitstream out.

You see, Bitstream single-bit encoding is the way the recording industry is going. Soon most digital recordings will be Bitstream encoded and it’s only a matter of time before Bitstream decoding will be the standard, too. Other manufacturers have been fishing for our chips. Altis Audio has them now!

Benefits you can hear!

Technology aside, listen to the music! Compare the Altis Audio Bitstream decoding processor with any multi-bit processor. The music sounds more natural... less artificial. Low level details are clearly and delicately reproduced. Images are precise and stable! The overall sound is smoother and more musical.

Decide if less isn’t more!

There are cost-savings, too! With simpler circuits, fewer parts and shorter signal paths than multi-bit processors, Bitstream is easier to execute. And Altis Audio passes this savings on to you.

You can hear that it’s right!
Here you’ll find rare Elvis on LPs, EPs, and 45s, as well as increasingly-harder-to-get imports. You’ll also find a large collection of 10” jazz recordings on such labels as Royal Roost, Mercury, Blue Note, Prestige, Fantasy, Columbia, and Capitol. Record Exchange has published, and offers for sale at their stores, their 2nd edition Jazz Catalogue which lists in its 170+ pages thousands of records from traditional to contemporary—well worth the $5 cost (it includes a $3 coupon which can be applied to purchases). I found very little classical here, but the plethora of other music kept my eyes and fingers busy for some time. (And no, Gary, contrary to what you might have heard, Indians in Santa Fe do not sell jewelry from behind chicken wire on the Plaza.) If you’re into nostalgia and like popular music from the ‘40s and ‘50s (and Elvis!), you should make this your first stop in St. Louis.

Record Exchange owner Jean Haffner can usually be found in the store at 2831 Cherokee Street in the heart of St. Louis’s antique district. The store here is smaller than the Hampton one, but is equally impressive. In the rear, awaiting organization, is a room devoted to classical records. A quick browse only whetted my appetite for more time. (No John Hiatts, though.)

There’s another Record Exchange store in St. Ann, just East of Northwest Plaza at 10828 St. Charles Rock Road. This one is small, but along the walls and down the center aisle are bins and bins of LPs. I didn’t find my John Hiatts, but saw several jazz recordings I hadn’t seen in a long, long time, including the original Miles Davis Jazz Track with the abstract painting on the cover (for $15!). Fortunately, I already had a copy. If it’s not already perfectly clear, if you’re in St. Louis and don’t visit the Record Exchange stores, you’ve missed a great opportunity to find those records you’ve been looking for all these years (whatever your tastes might be). Record Exchange also does a large mail-order business with ads appearing regularly in such publications as Goldmine.

With my head reeling from exposure to all this vinyl, I felt the need to get a White Castle “fix.” Another St. Louis institution, located nearby at the corner of Grand and Gravois, White Castle is celebrating its 70th anniversary, and although their burgers are no longer a nickel apiece, they still hit you with the impact of a Mack truck the day after you eat them. These small, square “belly-bombers” must be

The Record Exchange: owner Jean Haffner (left); the aisles of rock (right).
eaten fresh off the grill laden with onions. If not, the experience is akin to biting down on a hockey puck. If you haven’t already, live dangerously and try some. Then you’ll know what everybody’s talking about.

If you’re a fan of C&W music (early C&W, as I am), rockabilly, and '50s vocal groups, you’ve got to visit Now & Then Records at 6921 Gravois. Entering the store is like a return to the past, when 45s dominated the music scene. Owner Jim Overman stocks over 50,000 45s, all neatly displayed in alphabetical order in the center of the store. Behind the counter are even more 45s (back-up stock and rarities). According to Jim, vinyl is alive and well in his store, and he will continue to stock it as long as it’s available (domestically or otherwise). I saw only a handful of CDs and cassettes—the store is pretty much devoted to vinyl. Only a shortage of funds prevented me from going hog-wild in the C&W section, although I did snap, for $9.98, a Webb Pierce LP on the English Stetson label. (A Longhorn Records label has been stuck over the Stetson name. Apparently the Stetson Hat Co. objects to the use of the name in the US, since the catalog number of the LP is HAT 3119. You go figure.) The album is titled The Wondering Boy, and if you want music to cry in your beer to, or if you’re a “closet cowboy” like me, this is it. Webb Pierce was one of the best of the honky-tonk singers, and this music (from a 1956 Decca/MCA LP) defines that genre. With tunes like “There Stands The Glass,” how can you go wrong?

Want Gene Autry? Ernest Tubb? Hank Snow? Now & Then Records is the place. There’s no classical here, but soundtracks, shows, jazz, and soul can be found. The rock & roll and rock (there is a difference) selection is extensive. No new wave, new age, or alternative music. And no John Hiatt (sold out). Jim makes a special effort to keep the popular music of the ’50s and ’60s alive by stockong albums by those artists as he finds them. There’s a reissue rush on for music of this type. If you listened to (and were touched by) Gene Autry singing “Rudolph The Red-Nosed Reindeer” when you were a kid (I know you’re out there—that record has sold over 7 million copies!), you must visit this store.

A large cache of new, mostly imported LPs can be found in the bins at Music Systems, 3149 Shenandoah in the Shaw district. The store is open for business on Saturdays from 12-4, otherwise by appointment (call 773-1222). Owner Jeff Horn is liquidating his extensive stock at prices generally 20% below list. Classical, jazz, and international pop and rock (limited selection) are for sale. Classical labels include: Accent, Archive, Argo, Astreè ($11.98!), BIS, Philips, Telefunken, Proprius, Hungarian, French and German Harmonia Mundi, Lyrita (!), Wergo, and Unicorn. Jazz labels include: German ECM, Vee Jay, Mercury, Verve, French CBS, and French and German RCA. Don’t you wish you had a store like this near you? Well, the records won’t last forever. Jeff says he won’t even try to replace them when sold, so what you see is what you can get (probably for the last time). For selfish reasons I hesitated to include Music Systems, but my task is to report what I see, feel, and hear to my audience. The rest is up to you!

I was looking for a store which specializes in Irish and Scottish traditional and folk music. I found it at Music Gallery, in the historic Soulard district of the city at 1801 South 9th Street. (By the time you read this, Music Gallery will have moved out to Webster Groves to 8175 Big Bend.) Music Gallery carries bluegrass, blues, zydeco, and cajun recordings in addition to Irish and Scottish. For those who like to read about music as well as listen to it, several different blues, folk, and old-timey magazines are stocked. The store in Soulard was warm and cozy with an ambiance which defines the district. Records are neatly arranged in beautiful, wrought-iron display racks. With a move imminent, all LPs in the store were on sale, and it didn’t take long for this writer to find and purchase two absolute treasures. Aly Bain & Friends on the Scottish Greentrax label is a must for those who appreciate fine fiddling. Bain is one of the best; he’s joined on this TV-series soundtrack by a wide variety of talented performers including Phil Cunningham, The Boys of the Lough, and Queen Ida. A terrific record, even if the sound is a bit thin. Dolores Keane’s marvelous voice is heard to advantage on Dolores Keane (DKLP 1). I’m unfamiliar with this label, but the record is fast becoming one of my favorites. A pristine voice captured in gorgeous sound with creative accompaniment in songs which touch the soul. A must! Hope you can find it somewhere.

Two record stores are located in Hazelwood, a community just north of the airport. One of the shops is a must stop. The Record Reunion at 219 Village Square Shopping Center is a real
Audiophile Receiver.

The NAD 7400 Receiver

A Contradiction In Terms?

NAD is the world's leading manufacturer of reasonably priced, high performance audio equipment. Since 1978, their products have won universal acclaim for their brilliant sound and their unique, innovative engineering. The 7400 Receiver is another perfect example of NAD's continued commitment to extraordinary performance at affordable prices.

Unlike most companies, NAD doesn't believe in compromising performance at the expense of convenience. The 7400, for example, combines the same power amplifier as their exceptional model 2400 Power Amp. In fact, while modestly rated at 100 watts/channel, the 7400 can produce in excess of 370 watts/channel of clean dynamic power.

Furthermore, the preamplifier and tuner sections of the 7400 are virtually identical to the highly acclaimed Preamplifier/Tuner model 1700. The combination of its sections makes the 7400 a world-class audiophile separate system in a convenient single chassis. The 7400 even includes NAD's System Remote Control which not only controls the 7400, but several of NAD's cassette decks and CD players as well.

As Leonard Feldman stated in his August 1989, Audio Magazine review, "A receiver such as this, if auditioned by dyed-in-the-wool adherents to the separate components approach, may actually convert a few to the all-in-one school. NAD has always offered components that deliver a lot for their price. The NAD 7400 continues this worthwhile tradition."

With the 7400, you no longer have to sacrifice performance for the sake of convenience. We invite you to visit your local authorized NAD dealer to audition the 7400. You'll discover that this "Audiophile" receiver isn't a contradiction at all.

* Reprinted with permission from Audio Magazine, ©1989 Diamandis Communications.

NAD, A Division of Lenbrook
633 Granite Court, Pickering, Ontario Canda, L1W 3K1, (416) 831-6333

Advanced Technology...
...Simply Applied.
Would Your Audio Cable Accept a Long Distance Phone Call?

Only Museatex Cables Go the Distance.

The telephone is not a sophisticated audio component, yet it is capable of accurately transmitting and receiving every nuance of sound over thousands of miles. The secret to this success is not the telephone itself, but the cabling that links the phones together. Millions of dollars have been spent by the phone companies on cable research. The findings of this research, however, have been largely ignored by most audio cable manufacturers.

While audio cables are not required to span long distances, the characteristics that allow for accurate long distance transmissions are also necessary to maintain signal purity in audio applications. Each Museatex cable is made from several individually insulated, oxygen-free, copper wires. The thickness of each wire is optimized to accurately reproduce the full audio frequency balance. By insulating each wire and sealing the ends, we have developed a cable that prevents "dioding" due to oxidation, common in most conventional audio cables. This allows Museatex audio cables to maintain their performance characteristics over time.

Crypton™ Cables — Another Museatex Innovation

The audio press has been buzzing about Museatex's patented cryogenic process, which applies the theory of electronic superconductivity at cryogenic temperatures to audio. Museatex Crypton™ cables have been treated cryogenically to minimize residual stress, at the molecular level, caused by extruding the copper wires under intense heat. The improved conductivity of Crypton™ cables makes them the finest cables available for high definition audio systems.

Guaranteed Improvement

We are so sure the Museatex Crypton™ cables are the finest on the market, that we offer a 30-day, money-back guaranty that the cables will improve the accuracy of any system, irrespective of the cable currently being used.

MUSEATEX

For more information about our cables or our Melior and Meitner components, contact your Museatex dealer or call:

Montreal: (514) 333-6661  Calgary: (403) 273-2552  U.S.A. : 1-800-469-2447
sleeper.’” Owner Dan Kiser says he’s been in business for seven years (why hadn’t I discovered this place when I lived here?), selling carefully selected new and used records. The store is filled with LPs, most of which are stored in protective sleeves. Jazz, rock, blues, C&W, folk, soundtracks, and some classical can be found. There’s a large section devoted to “collectible” LPs with prices commensurate with rarity. On shelves on the walls were boxed sets from England, on the Charly and Affinity labels, of Sun rockabilly and Django Reinhardt, respectively. Domestic sets of Otis Redding, Frank Sinatra, Benny Goodman, and Eric Clapton were also available at excellent prices. I grabbed the Sinatra set. I also grabbed one of the Hiatts I was looking for (mint condition for $3.99), a couple by Tom Waits (also $3.99), and the first MC5 album (Kick Out the Jams, $5.99). The last album has to be heard to be believed. Twenty-three years ago the MC5 were caught “live,” performing in a style which makes much of today’s power rock seem lame and derivative. A landmark album!

Record Reunion’s blues section impressed me with many hard-to-find imports of artists such as T-Bone Walker, Elmore James, etc., all at fair prices. The classical section was not exceptional. (With but a few exceptions, it appears St. Louis is not the place to visit if you’re looking for classical recordings.) I found it difficult to leave this store. I suspect you will too.

Sound Revolution at 7751 North Lindbergh is no revolution at all. A poor selection of very used albums (mostly generic rock) and a few racks of cut-outs were all I found there. Inexplicably, there were several new, sealed Original Chess Masters for sale at $3.99. Excellent music at excellent prices! Driving North into Florissant, I stopped by Forever Young at 1783 New Florissant Road. A sign on the window says the store is “full of neat stuff.” Well, there’s a lot of neat “stuff” inside, LPs excluded. A long row of back-to-back browser bins holds the LP collection, arranged alphabetically. From what I saw, the music is exclusively rock, with the highest prices I’d yet seen. The records seem to be in fair condition, but with such unrealistic prices, I hesitate to recommend a visit. You can do much better elsewhere. If you’re into bubble-gum, though, I suggest you stop in. I’ve never seen so many different brands in one place.

St. Louis’s other high-end store, The Great St. Louis Sound Company, is located just off Highway 40 at 1341 South Lindbergh Blvd. I had a nice chat with owner Gerry Lemay while perusing the wares. Electronics sold here are Onkyo, Rotel, B&K, and Audio Research. CD playback is by California Audio Labs. Loudspeakers on display were Thiel, Mirage, and NHT. Analog was represented by AR and SOTA. Incidentally, Gerry has a used Audio Research D350 stereo power amp for sale for $1500. Claimed to deliver 300W into 8 ohms, it might be worth checking out if you’re looking for subwoofer power. The store is attractive (in a modern sort of way), well-isolated from street noise, and comfortable. I enjoyed my visit here. Upon leaving The Great St. Louis Sound Company, I headed back to Watson road to Now Hear This, a store I was told carried vinyl. This tip was erroneous—the store sells only CDs.

But Man does not live on records alone; I must mention yet another unique dining experience. St. Louis is known for its Italian food; Talayna’s, at the corner of Forest Park and Skinker Boulevards, serves what may be the best pizza in town. You can dine here under huge stained-glass panels reportedly salvaged from local churches and amid statuary of questionable origin or importance. Whether the lighting effect contributes to the heavenly taste of the food I don’t know, but it’s certainly worth a visit when the urge for Italian strikes. From Talayna’s it’s only a short drive to Ted Drewes’s Frozen Custard at 6726 Chippewa where, on this particular March evening, it began to snow. It felt funny standing in line with the other crazies to order your Concrete Shake or other high-calorie, high-fat yummy with snow falling all around. But the taste of these truly decadent desserts makes any irony acceptable. For those not on a diet, enjoy!

It was nice to visit the old home town once again, despite intense feelings of déjà vu. Getting together with friends, sharing good food, driving down familiar streets, visiting old hang-outs, and soaking up the sights and sounds of a big city energized me. My trip was successful, for I found what I’d come to look for—records, records, and more records! On more than one occasion, I felt as if I’d struck vinyl’s mother lode. I’m convinced it’s in St. Louis, waiting to be tapped. Those of us who can’t travel to a strange city without exploring the record shops first will be the first to know. Won’t we?
“That’s the big news with the Sonata Series M-200 Monoblocks: they are real high-end amps, not very far short of the best solid-state amps available. And like I was telling Apogee’s Jason Bloom the other day, ‘What a bargain!’”

— Sam Tellig, STEREOPHILE, January 1991, Vol. 14, No. 1

B&K Components, Ltd. has designed a family of amplifiers and pre-amplifiers meant to challenge the best equipment manufactured today. All design, engineering, manufacturing and services takes place under one roof in Buffalo, New York. This allows B&K to integrate all phases of product development and manufacturing as a team. We have at B&K over the last 10 years refined both our design and manufacturing process in an effort to provide you with state of the art audio equipment that is both reliable and affordable.

Our commitment at B&K is to provide the best value in audio, this starts at the component level. Each component must undergo a rigid pre-approval process. This is followed by constant testing of each component by manufacturing. To give you an idea of our standards, each metal film resistor, capacitor, and transistor is tested for functionality and tolerance before being used in a B&K product. We also follow strict guidelines in all other areas of our manufacturing so that each B&K amplifier and pre-amplifier will be as close to the engineering ideal as is humanly possible. By committing to this level of quality, B&K is able to provide a product that is musical, reliable and of excellent value.

“In short, a superb performance from B&K’s most noteworthy product to date. The M-200 power amplifier is a smashing success by any standard and an absolute steal at the price.”

— Kent Bransford, HIFI HERETIC

B&K COMPONENTS, LTD.
1971 Abbott Road, Buffalo, New York 14218-3241
NY: 716-822-8488  FAX: 716-822-8306  1-800-543-5252
Call or write for information and the name of your nearest dealer.
be ride home from Radio Shack was uneventful, except for the upper-body strength I built trying to hold the would-be wayward Aries on the road. Uneventful, that is, until I got into my driveway. At that point the accelerator stuck at about 20mph. The resistance of the garage door breaking jarred the throttle mechanism just enough to cause it to release before the now-frowning Aries made the garage a drive-thru.

Knowing that the Radio Shack clock in stock form did nothing to improve the sound of my system, I proceeded with plan B. Into the kitchen. I removed the clock from its packaging and placed it in the microwave oven. Ten minutes of 700 Sharp watts of microwave power should be just about right. Punch start and...

Where am I? Nothing looks familiar, nothing looks like anything. I'm not blind, but I can't see. I move my head a little—seems to be something hard behind me. Oops, no muscle control of the neck. My head flops backward helplessly. Sensations begin to return to hands and feet. I'm floating. No, that's not quite it. Geez, my shorts are riding up hard. Ah ha! I'm hanging on the coathook by my suspenders, head flopped back on the fridge! OK, OK. How did that hole get where the Sharp Carousel MZX3231 microwave oven used to be? Oh yeah, the clock. Must have been one of those nuke clocks. Wonder if I can find enough pieces with which to get my money back.

The Aries is gone now, sold to a 17-year-old with visions of scoring big in the back with the willing willowy wenches of Henry Hudson High. All traces of clock and microwave oven detritus have been removed and a new all-dancing/all-singing built-in 'wave camouflage the gaping maw behind the oven where the magnetron violently penetrated the velvety smoothness of the alabaster plaster wall.

The noise of the exploding clock and oven caused my hearing to suffer a temporary brickwall filter effect at 10kHz, making CD playback especially enjoyable for three days. More importantly, the system now sounds vastly better. I've been exploring the reasons why this

1 Mr. Blackburn is a regular contributor to The Audiophile Network, where this salutary tale first appeared. Those wishing to subscribe and contribute to this always interesting, always controversial computer bulletin board—a recent topic for intense debate, for example, has involved the conflict between objective fantasy and subjective reality—can contact T.A.N. at 14155 Kittridge Street, Van Nuys, CA 91405. Tel: (818) 782-1576 (voice), (818) 780-6260 (Fax), (818) 988-0452 (computer).

A year’s subscription is well worth the $21 it costs. —JA

Stereophile, June 1991
may be true and have concluded that the violent electromagnetic fields and electrodynamic plasma energy waves generated by the magnetron in the nanoseconds before the oven and clock ceased to exist have substantially changed the physical properties of both fridge and stove. I know this to be true because when both are unplugged, the sound system reverts to its unassisted sound quality. With both of these remarkable appliances plugged in, the sound from the system is exactly, in every way, like live sound. 7AS's wisened and grizzled HP would not be able to tell the difference in a blind A/B test between my listening room with these two fortuitously irradiated appliances and the pre-remodeling sound of Carnegie Hall.

After several months of analysis, I believe that the two treated kitchen appliances create cylindrical neutron paths in the entire house wiring system which segregate electrons and protons into alternating layers. As a result, the Waterpik in my bathroom now operates 5dB quieter and the water pulses are noticeably smoother with no loss of force. The electric meter apparently damps or randomizes the effect due to inductance effects and haphazard internal windings. In addition, the incoming electrical wiring mass-damps the effect. Unplugging either of the appliances does not permit enough interaction to align the neutrons cylindrically, and the effect fails. Within minutes of plugging in both appliances, all is well again.

There are some side effects. The new microwave oven will now boil a quart of water in under five seconds, making it relatively useless for cooking Budget Gourmet frozen dinners or defrosting frozen Lender's bagels. The ceiling fan in the listening room generated so much centrifugal force that the blades flew off three seconds after I turned it on. The smoke detectors, connected to the house wiring, now go off when I burp after eating garlic bread. The garage-door openers do double duty as vehicle lifts when needed. But the system sounds great. Eat your hearts out.

2 The fridge is a 20ft³ freezer-on-top Whirlpool. The range is a Magic Chef four-burner self-cleaning model. Be sure the appliances are no more than 2-3' from ground zero or you won't get sufficient impaction on the appliances to create the effect. Be absolutely certain that there is no trash compactor within 100' of ground zero or the effect will be reversed, causing the electrons to rotate with zero linear velocity, effectively rendering everything an insulator. I'm still trying to understand how this happens, but examining electrons rotating inside the neutron cylinders at the speed of light has been, thus far, somewhat difficult.
Audio Express offers:
1. no-risk home trial on cables
2. prompt shipment (usually 2nd Day Air!)
3. an ironclad satisfaction guarantee.

Cary Audio

The new Cary Audio SLA 70
35 watt/channel stereo tube amp. $1195.00

Mono Bloc amplifiers—"sensational"! Loaded with user-friendly features, superb sound, and excellent build quality.
70 watt. $2395.00

Cary SLP pre-amp: $995.00
Cary SLP pre-amp active line unit only: $845.00
CAD 5500 CD processor "black box version": $995.00
Cary Products shipped ground.

CD Stoplight
CD treatment for improved clarity, resolution and ambiance.
$14.95

Straight Wire-Maestro
Top quality speaker & interconnect cables. Call for prices

Sonex
Sonex Jr. sound absorption panels
2' x 2' x 2' (charcoal or beige)
$49.95 / 4 Shipped Ground

Target/Standesign
Speaker Stands and 2 to 5 shelf racks available. Call for sizes & prices.
All racks & stands shipped ground

Interconnect Cables
Audioquest, Aural Symphonics, Cardas, Kimber, Straight Wire, Audioquest Lapis, Emerald, Aural AS-One, Kimber KCAG (silver), Monster, Music Metre, Kimber KC-1, etc.
Call for details on no-risk home trial program!

Speaker Cables
Audioquest, Aural Symphonics, Cardas, Kimber, Monster, Straight Wire, TARA, Audioquest Clear, Jade, Cardas Hex, Quad, TARA Quantum, Kimber 4TC, Kimber 8TC, etc.
Call for details on no-risk home trial program!

Navcom/Audioquest Vibration Dampers
Navcom Silencers
The latest in vibration technology.
Component size $59.00/4
Audioquest Sorbothane Feet
CD Feet $24.00/4
Big Feet $39.00/4

Power Cords
Aural Symphonics $159.00
Cardas Hex $189.00
Distech $169.00
T.G. $119.00
Wider Selection of "Best Buys"
Faster Delivery. 2nd Day Air!
Satisfaction Guaranteed.

800-866-5575

For Records
- Signet / AT OC-9 phono cart. Call
- Nitty Gritty fluids and brushes. Call
- Last Record Care Products. Call
- Record Sleeves
  - 50/$14.50  500/$115.00
- Other quantities available
- Record mats Audioquest $34.00
- Record Cleaning Brushes
  - Hunt Brush $19.95 Audioquest $8.95
- AO Cartridge Demagnetizer $79.95
- Sumiko Analog Survival Kit $49.00

Grado
- Still the best in low price cartridges
  - ZTE+1 $19.95  ZF3E+ $29.95
- Other Grades: Call

Digital Cables
- Audioquest,
- Aural Symphonics,
- Kimber, Straight Wire,
- TARA, etc: Call

Accessories
- Edison Price Music Post $39.95/2 pr.
- Audio Prism 6500 Antenna. Call
- Shure Stylus force gauge. $12.95
- Sumiko Counterfeet. Call
- Cramolin Kit. $14.95
- Monster X-terminators. $49.00/4
- Sumiko Tweek $14.95
- TRT Wonder Solder & Capacitors
  - Resistors. Call

NoiseTrapper
- "I did hear a significant improvement with the Audio Express unit over the raw A/C outlets..."
  - Robert Harley, April, 1990
  - Stereophile

- Try NoiseTrapper, the most effective, economical way to improve your sound.
- NoiseTrapper AC isolation & filter:
  - $299.00
- NoiseTrapper Plus:
  - $379.00

- NEW!
  - NoiseTrapper 2000
  - AC isolation and filter unit for amplifiers
  - $1099.00

- NoiseTrapper products shipped UPS ground
  - "Recommended Component", October 1990. (Vol. 13. No. 10), Stereophile

Navcom CD Rings
- The only CD treatment to utilize the vibration damping properties of pure Navcom. Call

Sumiko Oyster Phono Cartridges
- Blue Point Call
- Oyster $29.95

All items are shipped UPS
2nd day air unless otherwise indicated.
Accessories: One item: $5.25
Turntables and stands: $12.95
Extra items: $1.25
Electronics: $9.95
Business hours: M-F 9am-6pm CST
Closed Saturday and Sunday
Prices subject to change.
Add 3% for American Express.
We accept Mastercard, VISA, Discover, American Express, and Optima.
GUARANTEE: You may return any product, (special orders excepted) for any reason, within 2 weeks of receipt, for credit or refund, (your choice) less shipping costs, if product is undamaged, complete as shipped. Non-cable returns subject to 10% restocking charge. Ask for specific details.

Audio Express
1-800-866-5575
1-800-580-5575 Texas only
3800 North Lamar Austin, TX 78756
FAX: 512-323-5574, Service: 512-323-5575
Vacuum-tube guru

DAVID MANLEY

talks with

ROBERT HARLEY

A s founder of California-based Vacuum Tube Logic of America, David Manley is at the forefront of the current renaissance in vacuum-tube audio equipment. In addition to manufacturing some highly regarded audiophile components, VTL has introduced a line of tubed professional equipment that is finding its way into recording studios. David has a lifetime of experience in tube electronics, recording studio design, disc cutting, music recording, and most recently, analog/digital and digital/analog converter design.

David is highly opinionated, outspoken, and controversial. He expresses his strongly held beliefs with a passion and conviction that the printed word does not adequately convey. Moreover, he has a unique perspective on music reproduction and audio electronics, garnered in over 30 years of audio work in South Africa, England, and now America.

During a visit to the VTL factory, David's
In the lab, and his newly built recording studio, I had an opportunity to discuss with him his views on a wide array of topics. I began by asking him what made him come to America and start a tube audio electronics business.

David Manley: First of all, you've got to know that I love America. I've been coming here for 25 years and always hoping, praying that I'd end up settling here. I would have taken a much lesser excuse, including sweeping a studio floor [laughs]. California is the best place in the world to manufacture this kind of electronics.

I planned to put amplifiers like these into production all the time I was in the recording business. A lot of the circuits I use I've refined over those years in recording, either as monitor amplifiers or mike preamps or whatever. We started the business in England even though I named the brand for America: over there the term "vacuum tube" is related to mercury barometers and things, while in America they think "valves" are related to oil lines and faucets.

I tried to launch VTL here in 1981, tried to get a small production line going off prototypes I'd brought with me on a visit. But I had a disappointing would-be distributor then who let me down rather badly, and I almost gave up the project. England is a good place to start such a business, and the whole thing was geared to export anyway—with America as one of the prime markets. As soon as the sales in America started to exceed the supply from England, I brought the manufacturing here. Boy, am I pleased I did.

Robert Harley: Many of your designs appear to be based on old textbook circuits. Has progress been made in amplifier design or are today's components just better?

DM: It's not that they're old designs. In tubes, everything that you can think of, somebody's tried in some way or another. You can connect a tube many, many ways; you can ground the...
If you were choosing a piano for a concert hall, would you get two or three name pianists that you knew and respected, or would you put it up to a blind committee to help you pick a concert-hall instrument?

grid and use the cathode as an input, etc. So there's hardly any variation on circuitry that hasn't been tried in the amount of time—60, 70, 80 years—that the tube's been around.

So, as such, any design will have been preceded, but maybe not in a sonic way. Somebody may have used such and such a thing in a transmitting way, or in a radar way, or in a medical way. The designs I do are based, sure, on sound, known technology. But each design is unique insofar as how you lay it out and the kind of components you use and little novel ideas and twists you give to what might be regarded as a dogeared textbook configuration. Little things you do make it radically different and better.

RH: How important are measurements and specifications in designing audio equipment?
DM: Very important. I always say that I use measurements and specifications to confirm what my ears tell me. And I've heard a lot of things that measure well and sound not well, but I've never heard anything that measured absolutely disgusting sound good. There is some relation. Obviously there has to be. It's just that I place the listening test above the measured specifications. But sure, they're important, and I use them. I believe in them. But I don't believe in syndromes like "anything you can hear I can measure," because that just isn't true. I always ask those people when they last measured a Stradivarius or Guarneri violin. Or how do you measure the difference between a Steinway and a Bösendorfer or a Bechstein? All three excellent pianos.

I love that other issue about measurement vs listening—when people promote the blind panel test, which of course I have no faith in, or even interest in, other than to laugh at. If you were choosing a piano for a concert hall, would you get two or three name pianists that you knew and respected, or would you put it up to a blind committee to help you pick a concert-hall instrument?

You needn't bother to answer that. Your smile tells me everything.

I don't believe you can design good playback equipment until you know what goes into a recording. I think recording and playback are inextricably interlinked. You can't just build playback equipment by relying on the commercially available records without knowing A) what goes into them, and B) how they can be improved, because they're flawed themselves. I think it's also part of the whole circle. What we're doing now is to try to make good recording equipment available. It should make better records, which means they'll be made available to the audiophile community. I think all those things are irrevocably locked in a circle—a continuous chain.

The recording aspect of our business is mandatorily beneficial to our mainstream business of playback equipment for audiophiles. You can only make a really good recording knowledgeably when you've absolutely competently covered the art of playback. It's similar to when you're lining up a tape machine: you don't know how good the record amplifier is, or is not, until you've referenced the playback system to be optimum. Then you can adjust the record amplifier to that standard.1 The two things strongly intercouple. I feel that VTL has a distinct edge by being in both sides of the field.

And it's starting to grow. There's definitely a strong feeling around town. I don't get into every studio in the world, but I get into a lot, especially Hollywood studios. There's a strong tendency—a desire—to get back to better recordings. The rooms with good acoustics and good consoles are getting more and more business as the accent goes off plug-in material—MIDI (Musical Instrument Digital Interface) and electronic instruments plugged right into the console. And there's definitely an extremely heartening swing toward wanting better sound. That's a reality. I'm not just imagining it. We've done much, much more business in that arena in just this year, which is our first year of supplying professional equipment. Which, by the

---

1 The record and playback electronics of analog tape machines must be aligned before each session. An alignment tape recorded with varying frequencies at a precise and reference fluxivity is used as a playback reference. After the playback circuit is correct, the machine's record electronics are aligned to the playback electronics.

—RH
ANNOUNCING THE BRYSTON TWENTY YEAR WARRANTY

For over a quarter-century Bryston has been committed to designing and producing audio products with musical accuracy, reliability and value as our primary focus. It is widely known the Bryston's policy on the warranty of our products has always been extremely generous if ever required. To further enhance our long term commitment Bryston is instituting a 20 year warranty program as of January 1, 1990. This, as far as we know, is a first in our industry and as such will further demonstrate our continuing dedication to our products and customers.

This new twenty year warranty is also retroactive. It includes all audio products previously manufactured and sold under the Bryston name. This warranty is also fully transferable from first owner to any subsequent owners. Bryston has always been dedicated to designing and producing audio power amplifiers, crossovers and pre-amplifiers that deliver uncompromised performance, outstanding reliability and exceptional value. We believe our new 20 year warranty is one more example of our continuing commitment to this ideal.

Bryston Marketing Ltd.
Tel: (416) 746-0300 Fax: (416) 746-0308
Brystonvermont Ltd. Tel: (802) 223-6159
The revolution began with Aragon. Audio components directly competitive with those selling for over four thousand dollars, but at less than half the price. Leading international audio magazines proclaim Aragon audio components as “best value”. It was our honor to prove to the world that America can competitively manufacture at the highest quality and engineering level.

We now introduce ACURUS. Audio components directly competitive with those selling for one to two thousand dollars, but at less than half the price.

The ACURUS Circuitry is all discrete class A, the same as in two thousand dollar components. The nondetented, stepped volume control is identical to those in two thousand dollar components. The low noise/high voltage toroidal power transformer is the same as those in two thousand dollar components. The ACURUS switches use silver to silver contacts, the same as in two thousand dollar components.

ACURUS components are available for far less than a thousand dollars.

For further information about ACURUS audio components please call us. You’ll discover that accuracy from the U.S. is also the best value in the world.
way, I intended to be in from the day I started VTL. I couldn’t wait until we had special development funds to make recording equipment available.

**RH:** *What’s in the signal path of most recording chains?*

**DM:** Garbage and toilet paper and chewing gum and fish-and-chips and squibs and toffees and things. I’m much in admiration of the work you’ve done trying to put a healthier relationship between the recording community and the audiophile community. But you and I both know very well that a lot of stuff in the recording chain would give an audiophile heart failure if he either saw its entrails or heard it. There are certain mixing consoles—you know their names, the most illustrous and expensive—I guarantee an audiophile would run screaming from his room if he had to spend an evening listening to his music all the way through one of those mixing console channels.2

A lot of stuff in the recording chain would give an audiophile heart failure if he saw it or heard it.

When multi-track recording stuff came in, size and compactness and price were very considerable factors in choosing equipment. Because while you might have had a 16-microphone console with four or five playback channels or whatever, you’re suddenly confronted with having to have 60 inputs, each to cost little money and be very small. Guys now put in equipment with huge facilities—tweaks, knobs, and devices to outdistance the competing studios. And it seems the choice mixing console, the one that costs from a third to a half a million dollars, is the one loaded with the most number of features and toys—on every channel. You could never use 60 channels of parametric [equalization] combined with 60 channels of compression and limiting.

The whole thing is feature-ridden and compact, and looks classy and costs a lot of money and attracts customers. But the sound is not worthy of merit. Some of it is—I think "execrable" is a good word—disgustingly bad stuff. You find this in illustrious tape machines: beautiful transports and so on, but electronics that are diabolically terrible. They measure okay and they identify the tone passing through them, but not much better than that.

A good example of the convenience-over-sound attitude is the story of how 48V phantom microphone power came into being, which I think is another obscenity in recording.3 And it’s all done at the altar of economy and convenience and size and dollars.

As I understand the story, a major microphone manufacturer commissioned a marketing operation to find out why the sales of capacitor microphones were either tailing downward or not growing the way they’d like. And the one answer that came ringing through strongly at the end was that the users, who were the studio operators, highly disliked the separate power-supply box. They didn’t want that damn little box lying around near the studio input plugs, on the other foot of the boom base, or wherever. So they said, okay, fine, we’ve got a system to eradicate that box in solid-state. We’ll run the energizing voltage for the amplifier circuit in the mike head along the audio cables. Which is bad enough when you think about it, relying on just common-mode rejection to cut the noise.

But the price of that is they have to couple it out through high-capacity electrolytic capacitors. They couldn’t use a big polycarbonate or polypropylene because they’d be bigger than the damn microphone. So they’re using 10¢ portable-radio-quality 100µF electrolytic caps to carry the whole audio signal of a couple-thousand-dollar microphone. Through a 100µF cap! Bingo. Death to what the capsule is doing.

**RH:** *Why has there been so little concern by recording engineers about sonic quality?*

**DM:** I don’t think they willfully pollute the signal path. “Can we dig up a piece of horrible stuff here to try and degrade the signal?” But I think it’s for a combination of speed and convenience features, client-attracting doodads, and what have you. You’re right in the sense that they aren’t as worried about it as they

---

2 It’s not unusual for a signal to pass through at least 50—and as many as 100—op-amps in a pop or rock recording.—RH

3 Condenser (capacitor) microphones require a DC polarizing voltage on the capacitor plates as well as a supply for the built-in preamp. In phantom powering, the 48V DC supply originates at the console and is carried on both the same “hot” and “cold” conductors as the tiny (about -55dBm or 15mV) balanced AC audio signal.—RH

*Stereophile, June 1991* 133
### Sound Foundations are available at fine dealers everywhere!

<table>
<thead>
<tr>
<th>Natural Foundations®</th>
<th>Reference Foundations®</th>
<th>Component Foundations®</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pyramid Audio</strong></td>
<td><strong>Anchorage AK</strong></td>
<td><strong>Fairport Sound Works IL</strong></td>
</tr>
<tr>
<td><strong>Stereo One</strong></td>
<td><strong>Ft. Smith AR</strong></td>
<td><strong>Hi Fi City IL</strong></td>
</tr>
<tr>
<td><strong>Hassel’s (2 stores)</strong></td>
<td><strong>Phoenix AZ</strong></td>
<td><strong>Indianapolis IN</strong></td>
</tr>
<tr>
<td><strong>Audio Emporium</strong></td>
<td><strong>Tucson AZ</strong></td>
<td><strong>Lafayette IN</strong></td>
</tr>
<tr>
<td><strong>DB Audio</strong></td>
<td><strong>Berkeley CA</strong></td>
<td><strong>Good Vibes AZ</strong></td>
</tr>
<tr>
<td><strong>The Good Guys! (30 stores)</strong></td>
<td><strong>Burlingame CA</strong></td>
<td><strong>Classic Stereo CA</strong></td>
</tr>
<tr>
<td><strong>Sensa Stereo</strong></td>
<td><strong>Colma CA</strong></td>
<td><strong>Hayes Sight &amp; Sound CA</strong></td>
</tr>
<tr>
<td><strong>Audio Video City</strong></td>
<td><strong>Culver City CA</strong></td>
<td><strong>Audio Mart CA</strong></td>
</tr>
<tr>
<td><strong>Genesis Audio (2 stores)</strong></td>
<td><strong>El Toro CA</strong></td>
<td><strong>Classic Stereo CA</strong></td>
</tr>
<tr>
<td><strong>Stereo Vision</strong></td>
<td><strong>Encinca CA</strong></td>
<td><strong>Musical Images of Kentucky CA</strong></td>
</tr>
<tr>
<td><strong>Sound Quest</strong></td>
<td><strong>Irvine CA</strong></td>
<td><strong>Sound Gallery CA</strong></td>
</tr>
<tr>
<td><strong>Laser Co.</strong></td>
<td><strong>Laguna Niguel CA</strong></td>
<td><strong>New Generation (2 stores) CA</strong></td>
</tr>
<tr>
<td><strong>Unique Electronics</strong></td>
<td><strong>Los Angeles CA</strong></td>
<td><strong>Sound Trek Audio (5 stores) CA</strong></td>
</tr>
<tr>
<td><strong>Monterrey Stereo</strong></td>
<td><strong>Mountain View CA</strong></td>
<td><strong>Sound Electronics CA</strong></td>
</tr>
<tr>
<td><strong>Sound Goods (2 stores)</strong></td>
<td><strong>Palo Alto CA</strong></td>
<td><strong>Alternative Audio CA</strong></td>
</tr>
<tr>
<td><strong>The Audible Difference</strong></td>
<td><strong>Palo Alto CA</strong></td>
<td><strong>Perry's Inc. CA</strong></td>
</tr>
<tr>
<td><strong>Western Audio Imports</strong></td>
<td><strong>Paso Robles CA</strong></td>
<td><strong>Audio Buys CA</strong></td>
</tr>
<tr>
<td><strong>Entertainment Showcase</strong></td>
<td><strong>Sacramento CA</strong></td>
<td><strong>Speaker Factory CA</strong></td>
</tr>
<tr>
<td><strong>Paradyme (2 stores)</strong></td>
<td><strong>San Francisco CA</strong></td>
<td><strong>Gramophone LTD CA</strong></td>
</tr>
<tr>
<td><strong>Performance Audio (2 stores)</strong></td>
<td><strong>San Francisco CA</strong></td>
<td><strong>Belmont TV (3 stores) CA</strong></td>
</tr>
<tr>
<td><strong>Sounds Alive</strong></td>
<td><strong>San Francisco CA</strong></td>
<td><strong>Harbor Audio Video CA</strong></td>
</tr>
<tr>
<td><strong>Ultimate Sound</strong></td>
<td><strong>San Luis Obispo CA</strong></td>
<td><strong>Overture Audio CA</strong></td>
</tr>
<tr>
<td><strong>Audio Video Concepts</strong></td>
<td><strong>Santa Fe Springs CA</strong></td>
<td><strong>The Gramophone (2 stores) CA</strong></td>
</tr>
<tr>
<td><strong>Coastron (7 stores)</strong></td>
<td><strong>Santa Monica CA</strong></td>
<td><strong>Creative Sight &amp; Sound (3 CA</strong></td>
</tr>
<tr>
<td><strong>Video &amp; Audio Center</strong></td>
<td><strong>Santa Rosa CA</strong></td>
<td><strong>Jemstone Audio CA</strong></td>
</tr>
<tr>
<td><strong>Catana Sound (2 stores)</strong></td>
<td><strong>San Diego CA</strong></td>
<td><strong>The Sound Room CA</strong></td>
</tr>
<tr>
<td><strong>M &amp; W Electronics</strong></td>
<td><strong>Studio City CA</strong></td>
<td><strong>Audio King (12 stores) CA</strong></td>
</tr>
<tr>
<td><strong>Fusion Audio Video</strong></td>
<td><strong>W. Lancaster CA</strong></td>
<td><strong>Audio Video Dimensions CA</strong></td>
</tr>
<tr>
<td><strong>California Sound Works</strong></td>
<td><strong>W. Los Angeles CA</strong></td>
<td><strong>Best Buy (57 stores) CA</strong></td>
</tr>
<tr>
<td><strong>Paris Audio (2 stores)</strong></td>
<td><strong>Glendale CA</strong></td>
<td><strong>Hi Fi Sound Electronics CA</strong></td>
</tr>
<tr>
<td><strong>Maconi Radio</strong></td>
<td><strong>Colorado Springs CO</strong></td>
<td><strong>Sound Center (3 stores) CO</strong></td>
</tr>
<tr>
<td><strong>C &amp; S Audio</strong></td>
<td><strong>Englewood CO</strong></td>
<td><strong>Audio Perfection CO</strong></td>
</tr>
<tr>
<td><strong>Audio Unlimited</strong></td>
<td><strong>Longmont CO</strong></td>
<td><strong>Best Sound CO</strong></td>
</tr>
<tr>
<td><strong>Audio Fanatic</strong></td>
<td><strong>Wheatridge CO</strong></td>
<td><strong>Columbia Photo &amp; Video CO</strong></td>
</tr>
<tr>
<td><strong>Soundtrack (11 stores)</strong></td>
<td><strong>Fairfield CT</strong></td>
<td><strong>Flips Stereo CT</strong></td>
</tr>
<tr>
<td><strong>Audio Design</strong></td>
<td><strong>New Haven CT</strong></td>
<td><strong>Independence Audio Video CT</strong></td>
</tr>
<tr>
<td><strong>Take 5 Audio</strong></td>
<td><strong>Dania FL</strong></td>
<td><strong>Primus Audio FL</strong></td>
</tr>
<tr>
<td><strong>Sound Advice (16 stores)</strong></td>
<td><strong>St. Louis FL</strong></td>
<td><strong>Sioux (3 stores) FL</strong></td>
</tr>
<tr>
<td><strong>Stereo World (2 stores)</strong></td>
<td><strong>St. Louis FL</strong></td>
<td><strong>Silentkill FL</strong></td>
</tr>
<tr>
<td><strong>Palm Audio Video</strong></td>
<td><strong>Mary Biter FL</strong></td>
<td><strong>US Tech FL</strong></td>
</tr>
<tr>
<td><strong>Appliance-TV Depot</strong></td>
<td><strong>Miami FL</strong></td>
<td><strong>Sound Systems (3 stores) FL</strong></td>
</tr>
<tr>
<td><strong>Clover Corp.</strong></td>
<td><strong>Palm Beach FL</strong></td>
<td><strong>Stevens Audio FL</strong></td>
</tr>
<tr>
<td><strong>Audio Hut</strong></td>
<td><strong>Panama City FL</strong></td>
<td><strong>The Wiz (3 stores) FL</strong></td>
</tr>
<tr>
<td><strong>Waterways Audio</strong></td>
<td><strong>Pensacola FL</strong></td>
<td><strong>Sound Works FL</strong></td>
</tr>
<tr>
<td><strong>Stuart Audio Video</strong></td>
<td><strong>Fort Myers FL</strong></td>
<td><strong>Monmouth Stereo FL</strong></td>
</tr>
<tr>
<td><strong>Stereo Shoppe</strong></td>
<td><strong>Gainesville GA</strong></td>
<td><strong>Hi Fi Heaven GA</strong></td>
</tr>
<tr>
<td><strong>The Audio Center (2 stores)</strong></td>
<td><strong>Honolulu HI</strong></td>
<td><strong>Sound Board HI</strong></td>
</tr>
<tr>
<td><strong>Audio Shoppe</strong></td>
<td><strong>Honolulu HI</strong></td>
<td><strong>Randy Camera &amp; Hi-Fi HI</strong></td>
</tr>
<tr>
<td><strong>Sensa Stereo Sound Studies (2 stores)</strong></td>
<td><strong>Dania IA</strong></td>
<td><strong>CSA Gallery IA</strong></td>
</tr>
<tr>
<td><strong>Traviso Audio</strong></td>
<td><strong>Des Moines IA</strong></td>
<td><strong>Woodbridge Stereo (5 stores) IA</strong></td>
</tr>
<tr>
<td><strong>Electronics Cave</strong></td>
<td><strong>Iowa City IA</strong></td>
<td><strong>West Coast Sound (3 stores) IA</strong></td>
</tr>
<tr>
<td><strong>Alltech Electronics</strong></td>
<td><strong>Boise ID</strong></td>
<td><strong>Sound Advice ID</strong></td>
</tr>
<tr>
<td><strong>Good Vibes</strong></td>
<td><strong>Champlage IL</strong></td>
<td><strong>Union Premiums (2 stores) IL</strong></td>
</tr>
<tr>
<td><strong>Mills Recording</strong></td>
<td><strong>Chicago IL</strong></td>
<td><strong>Unicorn Audio IL</strong></td>
</tr>
<tr>
<td><strong>Saturday Audio Exchange</strong></td>
<td><strong>Chicago IL</strong></td>
<td><strong>Rabone’s Audio Video (5 IL</strong></td>
</tr>
<tr>
<td><strong>LaSale Electronics (5 stores)</strong></td>
<td><strong>Galesburg IL</strong></td>
<td><strong>Sounds Fine IL</strong></td>
</tr>
</tbody>
</table>

**SANUS SYSTEMS**

2885 Country Drive Little Canada MN 55117 (800) 359-5520

**Nytronics**

Fairport NY

New York NY

Rockeher NY

Cleveland NY

Cincinnati OH

Columbus OH

Dublin OH

Fairlawn OH

Findlay OH

Lima OH

Perma Heights OH

Oklahoma City OK

Oklahoma City OK

Beaumont CA

San Francisco CA

Pittsburgh PA

Pittsburgh PA

Middleton WI

Sacramento CA

Sacramento CA

Memphis TN

Austins TX

Dallas TX

El Paso TX

Pl. Worth TX

Houston TX

San Antonio TX

Fairfax VA

Falls Church VA

Virginia Beach VA

Bellevue WA

Olympia WA

Seattle WA

Seattle WA

Silverdale WA

LaCrosse WI

Madison WI

Madison WI

Belgium

Canada

Germany

Hong Kong

Puerto Rico

Singapore

South Korea
should be. An audiophile would take the unnecessary crud out of the path. Sound-degrading crud. The answer is for more people to become audiophiles.

**RH:** Why is there such diversity between audiophile values and the audio engineering establishment's values?

**DM:** I think it's pretty sad that the recording community—or at least the AES-steered part of it—regards the audiophile community—the true listening enthusiasts—as tasteless lepers or troublemaking, nit-picking bums who don't know anything and just buy expensive equipment unhampered by taste or knowledge. That's a gap that needs to be healed.

It's wrong. Because that's how the start of good recorded music was sold into the public: "Look at how hi-fi we are able to give you now, to take the orchestra home and make it really good." And then they do an about-face and say "Good enough is good enough."

**RH:** There is apparently a belief that amplifier design has reached a pinnacle and no further work can make amplifiers any better: they're all the same already.

**DM:** No, they're saying that if the equipment you can buy at Radio Shack isn't good enough for you, you're an obstreperous, overcritical swine. That's what they're saying. They say all those amplifier designs are the same, and all amplifiers sound the same, and you're just too rich. You're spending too much money, and nitpicking. And that's not how it should be.

**RH:** Why do you think there is so little emphasis on listening and striving for greater sound quality?

**DM:** Without being defamatory to anybody—and I'm pretty good at that—I really think because these guys are so progress-driven—with the word "progress" in quotes. If it looks like it's new and might give a whole lot of people new jobs or expand a certain area of manufacturing ability, that constitutes progress.

They hate tube people; they say that tubes are retrograde, even mentioning tubes sets electronics back by decades. As far as the AES is concerned, when tubes started to be replaced by transistors, they'd've liked to have taken a hammer and smashed every tube and every piece of quality equipment that existed because they regarded it as museum stuff—and irritatingly good. If they even acknowledge that it's good.

The most overused advertising copy word is "new." Apparently you could sell anything if you put "new" in neon letters just before it. To my way of thinking it's a retrograde word—something new may not have been tried out properly yet. But apparently it's a very wanted word among the buying community of all kinds of commodities. The AES are what they are because they are the forefront of "new" development. They're obviously of the persuasion that anything new beats anything old.

To my way of thinking, "new" is a retrograde word—something new may not have been tried out properly yet.

We were talking earlier about analog and digital. I played some tapes at an AES meeting several years ago and they couldn't wait to say "Listen to all that hiss and horrible analog garbage. It's outclassed anachrophilic stuff here. It's not relevant anymore." And as you well know better than anybody in the magazine industry, the bulk of the stuff today is being mixed to 30ips half-inch analog. It's the medium of choice, even when budget constraints aren't an issue. So what does that tell you?

I think the AES do an outstanding job. I really believe that. I just think they're a bit over the moon on newness and a bit "anti" on older stuff. I think all history is important. History and experience are vital. How can you build something better if you don't remember how good the thing you're trying to supersede was? It's funny—if it was built yesterday, it's got to be scrapped in favor of what was built this morning. I suppose that comes out of just trying to propagate electronics as an ever-growing industry.

Going back to your question about some of the equipment in the recording chain not being so hot, I put this down in large part to the fact that the AES are not concerned about what the 1% percent of the public who are audiophiles think, they're concerned what 99% of the public think. They think that the sound on television and car radios is just dandy.

I wrote in this little book of mine [The Vacuum Tube Logic Book] that when I was heavily in the recording industry, English recording company
Expensive Sounding Speakers!

Speakers are the most important part of your stereo system. It is the speaker that turns amplifier signal into sound and so ultimately determines what you hear. If your speakers do not perform well, your stereo system will simply not sound like music.

The search for musically satisfying speakers, however, can lead to some very expensive products. And if you have already bought those high priced speakers, then you better not listen to Paradigms. But if you haven’t, better not miss them. Why? Because from the time they were first introduced, Paradigm’s sheer musical ability utterly amazed listeners... but what caused even more amazement was the unprecedented low price.

So go ahead, get expensive sounding speakers... without the expense. Visit your authorized Paradigm dealer... and listen.

The critics agree:

"...For once we wholeheartedly agree... the Paradigm is most definitely a no-compromise two-way design capable of outperforming systems costing several times as much."

Hi Fidelity Magazine

"...natural, open and clear...excellent depth...lots of hall sound...big, expensive soundstage...well defined...a rare achievement for any loudspeaker, but when the price is taken into account the Paradigm’s performance must be considered as nothing short of remarkable."

-Sound & Vision Magazine

Paradigm

music... above all.

Sound&Vision CRITIC'S CHOICE AWARD

In the U.S.: AudioStream, MPO Box 2410, Niagara Falls, New York
In Canada: Paradigm Electronics Inc., 457 Fenmar Drive, Weston, Ontario
executives and A&R men would have Leak amplifiers driving Tannoy speakers in their offices or their reference playback system, and in America they had McIntosh driving JBL or Altec Lansing speakers. That’s all changed. Now they have boom boxes and little Auratones—a car radio is now the standard. If you make a pop record and it sounds softer on a car radio than the Colgate commercial preceding it, you’re finished as a mastering engineer. That’s your last job. They’re going to want to know why their stuff sounded sub-loud, sub-clear, sub-punchy to the Colgate toothpaste commercial. The quality criteria have shifted to where “good enough” is the order of the day. That’s sad.

**RH:** Why do you think tubes aren’t more widely used in recording and playback?

**DM:** Because ears aren’t more widely used in recording and playback. Whenever I expose people in the professional sector who have little tube knowledge to tubes, they immediately latch onto them. Immediately! We never have to talk about them; we just play them an amplifier or a preamplifier and that does the trick. It’s so evident. And you well know the ridiculous values of some of the older classic microphones. Because of the tubes.

Some of the reasons why tubes are easily able to surpass transistors are very clearly evident: the ability to handle large swings of program input voltage elegantly with no clip, and an elegant clip when they do; the higher working voltage rail; the more comfortable impedances at which to couple, where you don’t have to use 100μF or 200μF [electrolytic capacitors]

---

**Tubes aren’t more widely used in recording and playback because ears aren’t more widely used in recording and playback.**

---

because of the 10 or 20 ohm source [impedance].

And when you say “widely used,” again, you know that in the guitar industry the tube amplifier has never lost an inch of ground. The solid-state amplifiers are laughingly poor copies of tube amplifiers. My wife’s father, Al Dauray, was President of Ampeg, manufacturers of the guitar and bass amplifiers which are so hotly wanted. I made this point at a *Stereophile* Show designer’s panel: people are still buying and selling Dynaco tube amplifiers, of which there were some 200-and-odd-thousand built, which I think is wonderful. The solid-state amplifiers that are of the equivalent age, you can’t even get rid of at a garage sale. You pay a guy to take ’em away.

So certainly, in microphones tubes are widely used. That would be a fair statement. And the guitar industry, they’re very widely used. We think we can bring them back in the recording industry. The original Pultecs [a *classic tube equalizer*-RH] are like the Neumann and AKG capacitor microphones of yore: they have a sky’s-the-limit value. Which is why we build Pultecs that are better. People are finding out about those now.

I think tubes are getting more and more widely used where reliability and absolute performance are critical. Tubes are reliable. *Hyper-reliable.*

**We think we can bring tubes back in the recording industry.**

**Tubes are hyper-reliable.**

**RH:** What’s the prospect for continued tube production?

**DM:** Excellent. That was a brief question and I have a feeling I’m going to be too wordy here, but anyhow . . .

The prospects are way better than anyone might have predicted 20 years ago. But predictably, tube manufacture continues best in countries like Russia, China, Yugoslavia, and interestingly, has recently restarted in Czechoslovakia, where the cost of labor and other overheads are considerably lower than those in the UK or US.

The Chinese can make some outstanding tubes. The technology was put in there by Russia, who make *extremely* outstanding tubes. Russia uses an awful lot of tubes today in all kinds of very exotic places, including the computer onboard a fighter aircraft—a tubed computer. They’re capable of, and do build, a tube with 100 elements *[used as logic gates*-RH]. That, by the way, is supposed to be a classified secret, but it isn’t really. The barriers are break-
SUPERPHON HITS WITH ANOTHER SUPER PREAMP!

Five years ago Superphon zapped the industry with a shockingly-good inexpensive preamp. Stereophile's "Audio Cheap-skate," was amazed: "This preamp blows away every other solid-state preamp I have heard. Breathtaking sound stage. Uncannily precise imaging. Astonishing detail." (Stereophile, Vol. 10, No. 6, Sept. 1987.)

Now meet another fireball. Like the world-class Superphon DM, the SP-100 Line Stage Preamp features supernatural sound at a down-to-earth price. Once you've heard it, you won't believe it!

NEW CIRCUIT WITH UNMEASURABLE DISTORTION.

The Superphon SP-100 is a remarkable zero-gain, zero-feedback, direct coupled, high slew-rate, impedance converter line stage preamp. It overcomes the shortcomings of passive or straightwire preamps by carefully matching impedance between source and power amp. Unique symmetrical, mirror-imaged circuitry has unmeasurable distortion* and the widest, deepest soundstage. Incredible DC to light band-width provides astounding transparency, detail and uncompressed dynamics. The SP-100's six inputs include: CD, tuner, video, tape, and two auxiliary. The price? Less than half what you'd expect to pay for this level of performance.

THE AMP FOR THOSE WHO LOVE MUSIC. NOT HIGH PRICES.

Superphon's new SA-120 has a unique dual-mono, phase correct, widebandwidth, high slew-rate, differential Class A gain circuit which achieves near perfect symmetry and produces a wide open, uncluttered sound stage with superb imaging. The SA-120's output section combines the speed and delicacy of MOSFETs with the taut bass and control of bipolars. The high current outputs produce the slam of amplifiers with double its 60 watt per channel rating. Features include 5-way type binding posts, gold RCAs and IEC computer-style AC power connection. One listen to the SA-120 amp and you'd expect to pay $600, $700, even $800. But the SA-120 is available in the US for less than $500.

For more information about the SP-100, SA-120 and other fine products, contact your local dealer or call Superphon. Dealer inquiries invited. All products made in the USA.

Superphon Products Inc.
1035 Conger #3, Eugene, OR 97402
503/345-4226 FAX 503/345-0704
ing down with Russia, particularly, where there already have been barriers. But anything that's remotely military is classified. They classify a 1" stainless-steel bolt—if it was only used by the military—as a top-secret thing.

So China, Russia, and Yugoslavia—Hungary stopped a little while ago—make fine tubes in great quantities and quality. The Chinese make one of the best 12AX7As that's ever been seen in the history of the world. They do some lesser-quality tubes too, but that's only because they're targeted at a lower price point for musical instruments and so on. It doesn't mean it's the best they can make. We get astonishingly good 807s from China, which proves that they know how to make them. There is nothing they don't know how to do about tubes. Same with Yugoslavians. They make excellent tubes. So there's not a problem for tube manufacturers that I can foresee. Those three countries alone can supply the world.

But it was costs vs sales volumes that directly forced Mullard UK to close in 1986, and ECG/Sylvania to close in 1988. Sylvania's closing meant there was only one source—GE/MPD in Kentucky—of a premium-quality 6550, which I found pretty disturbing. I actually investigated very thoroughly the possibility of taking over the Sylvania plant and moving it to California!

It was those 1988 negotiations and financial viability studies, which of course were fruitless, that directly caused my internal alarm bells to ring and tell me that GE/MPD might not stay in business that much longer. I then resolved to get a backup plan going to ensure the continued supply of a better, more powerful tube to replace both the KT88 and the 6550. I found the most cooperation and keen interest from EI of Yugoslavia. Remember, this all began by correspondence and phone calls in late 1988, and was much aided by the fact that I had a Yugoslavian tube-knowledgeable friend near enough to the EI factory in Niš in Yugoslavia.

**RH:** *The new tube you're referring to is the KT90.

**DM:** Yes, but first I must tell you that the idea was not to attempt to slavishly copy the KT88: the Chinese already tried to do that. EI had this request to make a new tube from others and declined for many reasons, not the least of which were legal infringements, the "lampglass" shape of the KT88, and the mandatory bottom-exhaust the KT88 and 6550 shape dictates.

The way I hooked their interest was by telling them that I wanted to exceed both the KT88 and 6550 in performance and power capability, that my point of reference was of European origin, and that their existing tubular glass construction of the EL519 could be usefully employed.

You see, the tube I was really after was the long-out-of-production Telefunken EL156, a 900V monster of 50W plate dissipation which Neumann used in their disc-cutting amplifiers.

EI started work on the project, and it took nearly a year before first samples were ready for inspection and testing at the Niš factory. My wife—then fiancée—EveAnna and I visited with them for the first "hands-on" inspection in early January 1990, with some first correction samples being ready a couple of weeks later. We tested these in our US labs at cruel voltages and outputs. Then, with some minor improvements resulting in another factory visit, I authorized the tube to go into exclusive production for us.

**RH:** *Did you commission and buy the entire first production run?*

**DM:** Yes, in effect we had to guarantee to purchase the first minimum run of 10,000-plus pieces or the factory wouldn't have been able to produce them purely "on spec." Of course, I've picked up a lot of flak and put a few noses out of joint by us, an equipment manufacturer, introducing a new tube that was not available through the commonly accepted marketing channels. I've picked up criticism too through misunderstood comparison with the legendary KT88. I set out to secure a tube that could safely handle even higher voltages on plate and screen grid to produce even more power than the KT88.

**RH:** *Will the tube be exclusive to VTL?*

**DM:** No, but it had its start that way. We, though not trying to become tube merchants ourselves, have offered the tube to other manufacturers and are supplying it at the moment to a leading audiophile tube distributor. A couple of manufacturers are displaying keen interest, and the continuing production run, commencing around April, will be of much larger quantity than the original run.

**RH:** *As someone who has spent a lifetime in analog and tubes, how do you feel about digital?*

**DM:** You know, that's a long conversation to
which I could reply over 10 or 12 pages. I think
it’s healthier that I try to keep an open mind
about it. I mean, I love the sound of analog. If
I were given a straighter preference, I’d choose
analog. Master tape, that is.

I’ve read letters from guys in the magazines
about how the cat goes into a state of neurosis
with digital, and one guy wrote that he goes
into nervous tremors and rigor mortis sets in
and all this. I don’t dispute that the guy feels this
way. I fully empathize, sympathize, etc. But as
I read, I think one of the factors is just sheer
damn listener fatigue. That’s one of VTL’s major
marketing strategies—we don’t have a lot of
marketing strategies—but one of our major
marketing points to studio owners and audi-
ophile listeners is that tubes are much less
prone to cause listener fatigue. Especially digital
sound through what I find fatiguing anyway—
solid-state amplifiers. Sorry and all, but that’s
how I find them. And the less good they are,
when combined with digital, makes the whole
thing a damned fatiguing project.

Just a couple of weeks ago I listened to digital
at a friend’s house from 4pm until midnight on
what I call a “mid-fi” system. High mid-fi, but
not royal electronics. And I can tell you I felt
like I’d been through a threshing machine. But
that was just common listener fatigue. I’ve had
huge experience and seen other guys experi-
ence huge listener fatigue with crummy mon-
itor amplifiers that are mainly used in studios
on hard-sounding monitors. And sure, digital
exacerbates the listener-fatigue factor.

I don’t believe that the low-level detail has
to be as bad as some of that I’ve heard. I think
it can be gotten better and I think our project
[the VTL D/A converter, reviewed in Vol.13
No.12] will get it better. I think Mike Moffat’s
approach is excellent, and I’ve enjoyed your
reviews. In fact, I couldn’t wait to get the August
1990 issue of Stereophile. Three relevant ma-
chines [Wadia X-32, Theta DSPro Basic, Stax
DAC-XIt] reviewed all by the same man in the
same publication.

It’s got to get better. It’s no good lamenting
that analog discs are on the way out, or they are
out, because that’s the way we find ourselves.
And it’s also no good lamenting about the
44.1kHz sampling rate because that’s what
we’re stuck with. At least on the credit side of
the balance sheet it’s a stable format. It’s not as
though they had CD, super CD, VHS CD, Beta
CD, etc. So the public at least are not being

conned and re-conned into buying newer and
obsoleting or self-outhphasing systems. Digital
has hyper-convenience, is easy to maintain,
etc., and has other good things going for it. And
there are bad things going for analog discs,
even in the best stage.

One of the snags that drive me mad is the
LP’s diminishing peripheral speed. Figuratively,
you start out with about 18ips and you wind
up with about 8ips if it goes very near the label,
to use a tape analogy. Well, your ear compens-
ates as it drifts on through the record. But
meanwhile, most classical music—my favor-
ite is classical—builds up a climax, and that’s
when you’re wanting to finish big, as it were,
and that’s when the dynamic range is shrink-
ing. Which is why they had inside-out records
as an optional cutting method way back. Also,
pitch variations caused by mechanical aber-
ations in bearings and motor-drives on lathes
and turntables are another of my pet hates!

I try to be completely liberal about the digital
and analog controversy. You can see the music
I play and the source it’s from: master tapes that
I use as a reference tool. This is my collection
I’ve been building up over years and years and
years. Quite a lot of it’s got my work in it.

But digital is where it’s at! It’s pointless in my
position as a designer, as an important audi-
ophile company, to just turn my back on it and
say it sounds awful or that I’m only going to
contribute a minute’s time to it. I’m trying to
consistently get it better and better. We long
had a tube-modified, after-market modified
tube CD player. In fact we had them ready and
available in England before one was ever in
America.

Incidentally, I can tell you with absolute cer-
tainty that I was probably one of the earliest
audiophile types ever to hear a CD in the flesh.
This was long before they were in the market
because I used to do consulting to the adver-
tising agency that was given the project by
Philips of Holland to get the promotional story
ready. They called me in early on because they

It’s no good lamenting
that analog discs
are on the way out,
because that’s the way
we find ourselves.

Stereophile, June 1991
knew my background and interests. For the record, when I first heard CD it sounded ghastly. But it was being played with some typical, incredibly terrible advertising agency-type low-fi system. I took that machine home that very day, which was one of the prototypes of the Philips 100 with the pop-top, and I played it right through tubes. And I said, "wait, this thing isn’t nearly as bad as it sounded at lunch-time in the advertising agency."

Of course, I have to be honest and say I do like the high signal/noise ratio. I do like the wide dynamic range. I do like the channel separation. I’m in fact surprised that they haven’t made more of that: the complete left and right separation you can get which is akin to a master tape. Which of course the LP can never do. It’s a miracle that the LP gives any channel-to-channel separation with a common stylus and a common groove. And I do mean miracle.

RH: Tell me about the recording studio you’re building.

DM: Well, we’re building a recording studio now for about five key reasons. One of them is to be able to demonstrate our recording equipment to visiting prospective purchasers. Another is to have a truly neutral playback and recording acoustic—and I believe they should be so. The history of studios where you have a hyper-dead studio and then people listening in their hyper-dead playback rooms, to me that’s not how it should be. I know you feel the same way. Another one of the key reasons for the studio is that we will make recordings here for release either by ourselves or offered to some marketing organization. And we’ll offer the studio to people who want to make worthwhile recordings—free of charge. We won’t charge them a dime for the use of the studio, to help do what you’re doing—to help propagate and promulgate good recording.

Good recording is not a lost art. It doesn’t have to be. It was getting pretty lost out there. There should be absolutely no difficulty—I demonstrate this daily—in being able to record to that standard [the old classic recordings] with high-quality microphones and a clean, simple audio chain that’s not fiddled with. One of the key routes is tubes. All that stuff was recorded on tubes. Tube microphones, tube microphone preamps, Ampex 300 series tube tape recorders. There you have the sound, and provided you don’t use a diabolical acoustic, it’s really hard to miss.

---

Radically Pure Sound
With Intermezzo Cables

Beyond Wire, Golden Plugs & other compromises. Direct Connect tubular conductors with no equal. Music with no bounds.

Guaranteed to out perform any other cable regardless of cost
MADE IN U.S.A.

For Brochure & reviews contact:
Cogan-Hall
1609 Young St.
Cincinnati, Ohio. U.S.A. 45210
Ph. Fax (513) 421-1055

GET BACK IN THE GROOVE
CRYSTAL CLEAN, DYNAMIC SOUND

• YOUR CHOICE OF 12 SYSTEMS
• SYSTEMS FOR RECORDS, CD’s, OR BOTH
• STATE-OF-THE-ART ENGINEERING
FOR LITERATURE AND DEALERS
NITTY GRITTY
4650 ARROW HWY., F-4, MONTCLAIR, CA 91763
714/625-6525

Stereophile, June 1991
High End Audio... By Mail Order.

In the old days high end audio was hard to find—and harder still to audition. Then along came Audio Advisor with courteous, knowledgeable sales and support, reasonable pricing, prompt shipping and a liberal 30-day money-back guarantee. Finding high end audio became easy—just a toll-free call away.

Call us at 1-800-942-0220 to learn more. In Canada call 1-800-669-4434.

**Magnavox CD Players**

- New Magnavoxes!
  - CD551C 1-bit player w/remote — 169.95
  - CD552 5-disc changer, remote — 199.95

**ENERGY ABSORBING FEET**

- Navcom Silencers
  Quiet vibrations. Set of 4 — 59.95
- AO Sorbathane Feet
  Large (4) — 39.95
  CD Feet (4) — 24.95

**KONTACT!**

- "Kontact" electronic connection cleaner/enhancer.
  Recommended by Hi Fi News. Stereophile, etc.
  Imported from England — 49.95 / kit
- AO Laserguide CD polish improves CD sound and readability — 14.95
- Fiby CD Optical Clearcoat Enhancer
  CD Upgrade Kit — 14.95
  Full Size Kit — 29.95
- AudioPristin "CD Stoplight" green paint pen — 14.95

**TARGET RACKS**

- New! Target AER Racks

**STANDESIGN RACKS**

- Art & function combined

**CABLES, CABLES, & MORE CABLES!**

America's Largest Seller of Premium Cables

**Audio Interconnect Cables**

Call for prices on Audioquest, As-One, Cardas, Siltech, Monster, Tara Labs and Van den Hul.

Custom lengths and with custom terminations including right-angle RCA's and XLR "balanced" available. Call for prices.

**Premium Digital Coaxial Cables**

Tara Labs' Paragon Digital Coaxial Cable
1 GM — 39.95 1.5M — 47.95 3 GM — 69.95 6 GM — 99.95

Mod Squad "Wonderlink"
5M — 195.00 1.0M — 225.00 3 GM — 499.95

Tara Labs' Digital Reference "DR-1"
6M — 179.95 1.0M — 195.00 1.5M — 249.95

**Premium Digital Optical Cables**

Audioquest "Option "X"" Fiber Optic Digital Cable
1.0M — 75.00 1.5M — 89.95 2.0M — 99.95 3 GM — 125.00 6 GM — 199.95

Audioquest "Option "Z"" Fiber Optic Digital Cable
1.0M — 135.00 1.5M — 159.95 2.0M — 179.95 3 GM — 225.00 6 GM — 369.95

**Speaker Cables**

Call for prices on Audioquest, Cardas, Monster, and Tara Labs.

Custom lengths & terminations including spades, pin, Maggie pins, bananas, and more available. Call for prices.

**Cable Accessories & Contact Cleaners**

Edison Price Music Posts (2pr) — 39.95
Cableline Cleaner/Protector — 14.95
WBT RCA's & Connectors — in Stock
Sumiko Tweek (1.5oz) — 14.95

**Specialty Stands**

- ARCI CI Stands
  - BAW81X $39.95
  - EI56 $175.00
  - On El $175.00
  - B&W $450.00

- Sound Anchors Stands
  - BAW82M 349.95
  - BAW81M 399.95
  - Magusa 3 299.95
  - Magusa 3.2 325.00
  - SPICA TC-50 $219.95
  - Vandensteen 18 $199.95
  - Vandensteen 2C $249.95

**Lead Balloon**

- Table Stand — $299.00

**TIP TOES**

- Tip Toes (Original)
  - Short (.5") — 6.95
  - Tall (.5") — 9.95
  - Medium w/ screw — 14.95

- ToneConeS (New)
  - Short — 3.95
  - Medium w/ screw — 7.95
  - Large w/ screw — 14.95

**Audiophile Headphones**

- STAX SR-009X
  - SR-34 Pro — 179.95
  - SRE-15 15m ext cable — 39.95
  - SRE-16 15meter Pro cable — 95.00
  - SRE-17 15m Sig cable — 189.95
  - Bpmn ear pads 34 & 64 — 19.95

- AKG — NEW! K-1000 dynamic...Call

- Beyerdynamic
  - BDT990 Pro — 229.95
  - BDT990 — 189.95
  - BDT800 — 149.95
  - Replacement ear cushions — 22.95

**SONEX JRs**

- Special Introductory Offer:
  - Save $50! On STAX Headphones

- New STAX SR8000M Headphone with headphone amp, list $450, now only $299.95! Limit 100 sets.

- 2"x2"x2" SHEETS
  - 4 colors
  - Box of (4) — $49.95

**MONSTER X-Terminator**

- 24.95 pair

**AA AUDIO ADVISOR**
Rare Finds, Samplers and Test CDs:
- Proprius Jazz at Playtime:
  - Single CD 18 95 / Double LP 39 95
- Chesky JD37 Jazz Sampler/Test CD (cc) 13 99
- Dorian Sampler Disc III (ed) 9 99
- Hi-Fi News Test CD 2 (UK) (cc) 29 95
- RX "The Test" Headphone Test (cc) 59 95
- Reference Laser Video Test Disc (up) 59 95
- Athena Rachmaninoff, Ltd. Edition (LP) 29 95
- Debussy & Ravel, Ltd. Edition (LP) 29 95

Chesky New Jazz LPs:
- J2 Clark Terry, Portraits (lp) 16 95
- J82 Arna Garam; Rio After Dark (cc) 16 95
- Phil Woods, Little Big Band (cc) 13 99
- Natasha, Natasha (cc) 13 99
- Reference Recordings—All titles (cc) 14 99
- RR-31 Brock, Trope Affaire (cc) 14 99
- RR-33 Fats Waller Ltd. Edition (cc) 29 95
- RR-35 Noyama Plays Ravel (cc) 14 99
- British EMI Rock Pressings
- Mobile Ultradisc Gold CDs (cc) 29 95

Audiophile Books:
- Good Sound by L. Bearborn 12 95
- The VTL Tube Block, Edition 2 by David Mahley 12 95
- The Wood Effect by RH Johnson 14 95
- Full Frequency Stereo Sound, History of Decca Records 25 00

RAM Vacuum Tubes:
- Last longer, sound better than original tubes. Complete sets.
  - Gulliver preamp SA1000 65 00
  - JAR 65 00
  - SA0 169 95
  - SA1 65 95
  - SA2 65 95
  - SA3 65 95
  - SAT 69 95
  - SAT 100 99 95
  - KA20 & 220 135 00
  - Dynavac 20 79 95
  - Tung-Sol 79 95
  - Grayhill 20 79 95
  - Goldhut 20 79 95
  - VTL 79 95

Audiophile LPs and COMPACT DISCS:
- Dorian Classical CDs—All titles (cc) 14 99
- Wilson Audio LPs/CDS—All titles. (2ed) 15 98
- Sheffield Labs LPs/CDS—All titles (ip) 20 99
- Opus 3 Test Record CDs (lp) 25 95 / (cc) 16 95
- Delos Jazz CDs—All titles (cc) 14 99
- Harmonia Mundi Classics (lp) 12 95 / (cc) 14 95
- Stax Binural CDs—All titles (cc) 39 95
- Water Lily Acoustics: WLY-015 & WLY-1 Ltd. Edition LPs (ip) 24 95

Minimum order 2 LPs or CDs please.

Powerline Patriot Anti-Noise Defense System
- Tripplite's power isolators destroy incoming static, knocking out line noise & keeping electronics safe and secure. Isolation transformer technology purifies audio and video detail and imaging. Spikes and other power gremlins will never know what hit them.
- IS-400, 4 outlets, 400 watts $169 95
- IS-600, 4 outlets, 600 watts $249 95

CLEAN UP YOUR POWER!

Protect audio/video gear and improve performance.

Tripplite "ISOBAR" Power Line Filters
- ISOBAR-4-220 4 outlet 220V/40A $79 95
- ISOBAR-6-6 outlet, 3-stage filtering $89 95
- ISOBAR-8 outlet, 4-stage filtering $99 95
- ISOBAR-8R-12 outlet, 2-stage filtering

Tripplite Power Regulators/Conditioners:
- LC-1200 4 outlet, 2 stage 1200 watt output $219 95
- LC-1800 6 outlet, 3 stage, for audio and video $299 00
- LCR-2400 14 outlets, 2 stage, 2400 watt rack mount (see bottom illustration) $399 00

Audiophile Vacuums

FOREIGN SALES WELCOME
THE GROUND FLOOR

Peter W. Mitchell

In the March issue I said, "I recognize that only a small percentage of Stereophile readers are, or want to become, homebrew speaker builders." Ed Dell, editor/publisher of Speaker Builder, Elektor Electronics USA, Glass Audio, and The Audio Amateur magazines, responded with the following comments:

Dear Peter:
I wonder whether you have data for that statement or whether it is merely an assumption. By making it, you cast some sort of pall over the notion. Why so? One of the things that distinguishes humans from almost all the other animals is their ability to make things. Homo faber. Speaker Builder has been assuming for its 11-year history that people can build speakers. When people start to make things with their own hands, they find out things they do not know otherwise. They begin to question. They put together new ideas. This is not something arcane or remote; it is demanding, but it is also fun. The people who do it feel great about their avocation. And it is not just hacking. 57% of SB readers are using personal computers to design speakers, crossovers, stands, and to find out where to put their speaker systems in their living rooms. Building speakers or equipment is not something for the few; it is a challenging, exciting, and adventurous possibility. And seldom has there been a time when speaker building has been easier. See Gary Galo's recent review of the kits from Audio Concepts. I have heard these devices and, although they are kits, very few commercial products are their equal at twice the price. We've been finding that many speakers made by the big companies aren't very good.

All I'm asking for is a shift of emphasis. Give do-it-yourself the color of a normal activity—a reasonable choice that too few make.

Cordially,
Edward T. Dell

I certainly did not intend to cast a pall over speaker building as an activity; it can be wonderfully rewarding, both psychically and financially. When I wrote that an $800 subwoofer may be just a $150 woofer in a big box, and that a woofer mounted in a laminated-paper tube can deliver bottom-octave bass of very high quality at surprisingly low cost, I certainly was trying to spark interest in that project among our readers. In a future column I hope to discuss details such as drivers and installation.

But my expectation that most of us won't do it was not an assumption. It was based on a survey of our readers, taken three years ago. Survey questions were included in the June 1988 issue, and the replies (over 9000, an impressive response) were analyzed by JA in the October and December 1988 issues.

One of the 50 questions named audio-related publications and invited readers to identify the ones they read frequently. Audio Amateur or Speaker Builder was circled in only about 10% of the replies. Both of these magazines are such valuable resources that anyone involved in home-brew audio ought to be reading them intently! So, since Stereophile readers are not foolish, the obvious conclusion is that most of them are not active members of the Soldering Iron and Screwdriver Fraternity.

The survey also asked readers to list (and rank) their present equipment by brand name. Brands that are available in kit form were ranked relatively low in ownership. Hafler, the highest, was listed by 9.4% of readers. Dynaco was second at 5%, Heathkit third at 1%, while loudspeaker brands sold in kit form—Audio Concepts, Fried, Speakerlab—were around 0.5% each.

Yet, according to the survey results, fully one-third of our readers had built at least one audio component. Is this contradictory? Not necessarily. JA suggested that "building a Dynakit many years ago" contributed to the latter statistic, and I agree.

When I was in my 20s I had spare time, ambition, and few obligations. With only a few channels of not very good TV to distract me, I attended concerts, stage plays, sports events, tourist attractions, and became involved in charitable work. With more time than cash to spend, I had a strong incentive to build things myself. I had been making astronomical tele-

1 Subscription information is available from Audio Amateur Publications Inc., PO. Box 576, Peterborough, NH 03458-0576. Tel: (603) 924-9464. Fax: (603) 924-9467.

Stereophile, June 1991

145
The more things change
the more they stay the same

META RESEARCH
by Goldmund

In 1979, Goldmund razed standards for analogue record playback accuracy with the Studio Turntable and T3 Tonearm...

...In 1990, Goldmund turntable systems remain unsurpassed, and Meta Research by Goldmund raises the standard for CD playback accuracy with the Laser 1 Transport and Convert 1 D/A Converter.
scopes since the age of 12, so when I wanted a good stereo component system at the age of 20 it was inevitable that I would begin by assembling amplifier and tuner kits from Eico and Dynaco respectively. Later I graduated to designing and building things from scratch. A few of my circuit and speaker designs even found their way into commercial products.

As we approach middle age, our lives become filled with professional and family obligations. Even one’s leisure time fills up with distractions. Without my audio systems and recordings I would be lost; yet I am also distracted by things and activities that didn’t exist two decades ago—personal computers (with more programs than I have time to learn), VCRs (with more tapes than I can watch), laserdiscs, 40 channels of cable TV, and more books and magazines than I will ever read. My bank account is healthy, so the need to save money is less compelling than it used to be. Meanwhile the immediate gratification offered by store-bought products has grown more tempting.

Many of our readers, I suspect, have similar histories. It’s not surprising that even those who assembled a Dynakit when young are not eager to take up a soldering iron now. More’s the pity, because amateur constructors have ready access today to electronic and loudspeaker components of vastly higher quality than those we struggled with 10 and 20 years ago.

Perhaps I’ve been unduly pessimistic after all. Our 1988 survey disclosed that the typical Stereophile reader is a member of the baby-boom generation, the demographic bulge that was born in the decade after World War II. According to the cover article in the March 11 issue of Barron’s financial weekly, the turn of the decade (from the free-spending ’80s to the recession-prone ’90s) has produced a dramatic change in the spending habits of baby-boomers. Real-estate values are in decline and debt payments are at an all-time high, leaving less disposable income for luxuries. Upscale retailers are going broke, while value-oriented chain stores with names like TJ Maxx and The Gap are flourishing. People who used to spend $100 for designer-label jeans are returning to $35 Levis. Saving is age-related: when people turn 40 they start spending less for possessions and investing more for their future—pensions, annuities, savings, insurance.

It may be, therefore, that our 1988 survey is already obsolete. Perhaps in the new decade many more than 10% of our readers will be interested in the money-saving advantage of assembling audio components from kits or from scratch. This column will be devoted, at least occasionally, to exploring that avenue.

One of the special advantages of kitchen-table electronics is that, since you’re building only one or two of something, you can afford to invest in the best parts for it. If you were manufacturing products in batches of ten thousand you would feel pressure to cut corners, using a $3 tweeter or 75¢ op-amp IC because more refined parts don’t produce a dramatic enough sonic improvement to justify a million-dollar increase in your production budget. But when you are the owner/user who is going to spend hundreds of hours listening to a single product, you don’t hesitate to spend an extra 50 bucks for superior parts that promise more musically authentic sound.

One of the basic rules of manufacturing is that, in order to provide enough margin for marketing, distribution, insurance, warranty service, salaries, overhead costs, and profit, the “bill of materials” for a product should be no more than 20% of the retail price. Thus in a $500 loudspeaker the total cost of the cabinet, drivers, and crossover is barely $100. The cabinet is usually the most expensive part, followed by the woofer and crossover; I wasn’t kidding when I spoke of a $3 tweeter.2

My experience confirms what Ed said about the lousy quality of many of the OEM (original-equipment manufacture) drivers used in mass-produced speakers. A few years ago a small British company asked me to design a two-way speaker using low-cost woofers and tweeters from some of the best-known European driver factories. Most of them turned out to be shockingly bad, with peaky responses and plainly audible distortion. Good drivers were available at higher prices, and mediocre drivers can sometimes be improved by simple modifications, but this project didn’t allow for that. The company abandoned the project; but an amateur builder isn’t under the same cost pressure. You could build a pair of speakers for $500 using drivers ordinarily found only in $2000-plus systems.

The sonic value of first-rate parts leads to a conclusion that is particularly alluring for

---

2 A cynical manufacturer once told me that the cardboard and styrofoam packaging for a pair of loudspeakers was the most expensive component! —JA
beginners who aren't ready to build something entirely from scratch. You can improve the sound of the equipment you already own by doing simple modifications—installing better bracing and damping materials in a speaker cabinet, or replacing stock parts with better ones in an amplifier or CD player. If you have an old Adcom amp or Philips CD player, you could upgrade to better sound by selling it (at a considerable loss) and buying a new model. But in many cases you can obtain a similar sonic improvement at much lower cost by upgrading the old product with more transparent-sounding capacitors, better power-supply regulation, et al.

Of course there are risks: you may occasionally burn a finger on a hot soldering iron, or accidentally puncture a woofer cone with a screwdriver blade. And any home modification is likely to void the original warranty. Of course, this won't be a consideration if the warranty period has already expired, and the better manufacturers will still fix the areas of a product that weren't affected by your modification: ie, if you bypass the output capacitors in a CD player and then the laser dies, an honest manufacturer will recognize that the failure wasn't the fault of your mod and will replace the laser at no charge. Of course, homebrew audio is not for everyone. I'm reminded of the old story of two audiophiles discussing a third:

"Phil's been in the hospital; he died this morning."

"Oh? What did he have?"

"Krell, Magnepan, Linn . . ."

If you gain deep satisfaction and emotional security from knowing that your system consists entirely of components that won raves from reviewers, perhaps you should stick with store-bought gear. There is a very different, and quite special, psychic pride that comes from being able to say, "This was a well-designed product when I bought it, and with the modifications that I made myself it now sounds better than ever." You'll have to decide for yourself which type of owner you are.

THE PHENOMENAL SOUND OF ATL-TRANS-Series IS DUE TO A SPECIAL COMBINATION OF SQUARE WOOFERS AND FOIL SPEAKERS AS WELL AS SPECIAL CONSTRUCTED MID-RANGE DRIVERS. THEY TAKE ADVANTAGE OF LARGE SURFACE DISPERSION.

For more information call us or write us.

Stereophile, June 1991
## Back Issues While They Last!

<table>
<thead>
<tr>
<th>Volume</th>
<th>Years</th>
<th>Issues Available</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>III, 1972-1976</td>
<td>Issues 3, 5, 6, 7, 9, 11, 12</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>IV, 1977-1981</td>
<td>Issues 3, 6, 10, Issues 1, 2, 4, 5, 7, 8, 9</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>V, 1982</td>
<td>Issues 1 through 10</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>VI, 1983</td>
<td>Issues 1, 2, 4, 5, Issues 3, 6</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>VII, 1984</td>
<td>Issues 3, 5, 8, Issues 1, 2, 4, 6, 7</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>VIII, 1985</td>
<td>Issues 1, 2, 4, 5, 6, 7, 8, Issue 3</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>IX, 1986</td>
<td>Issues 1, 2, 3, 4, 5, 6, 8, Issue 7</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>X, 1987</td>
<td>Issues 1, 2, 4, 5, 6, 7, 8, 9</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>XI, 1988</td>
<td>Issues 1 through 12</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>XII, 1989</td>
<td>Issues 1 through 12</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>XIII, 1990</td>
<td>Issue 1 through 12</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>XIV, 1991</td>
<td>Issues 1, 2, 3, 4, 5</td>
<td>$5.00</td>
<td></td>
</tr>
<tr>
<td>EVERYTHING ABOVE NEATLY PACKAGED</td>
<td></td>
<td>$400.00</td>
<td></td>
</tr>
</tbody>
</table>

*Photocopies

---

**ORDER NOW, ORIGINAL COPIES ARE LIMITED**

Send me the following back issues:
(List Volume and Issue Numbers of copies available at $5.00 each)

Total: ______ Original copies × $5.00 per issue = $________
(List Volume and Issue Numbers of copies available at $10.00 each)

Total: ______ Reproductions × $10.00 per issue = $________

Add shipping and handling: 1 to 5 issues $2.00
6 to 10 issues $3.00
11 issues and over $4.00

FOREIGN ORDERS, Please add $2 per magazine for handling and surface mail postage. Total $________

Name ____________________________
Address ____________________________
City ____________________________ State __________ Zip __________

☐ Check ☐ MC ☐ VISA ☐ AM EX

No. ____________________________ EXP. DATE __________

RETURN THIS FORM TO STEREOPHILE, P.O. BOX 364, MOUNT MORRIS, IL 61054

OR CALL 1-800-435-0715

---

Stereophile, June 1991
Subscribe Today and SAVE!

U.S. AND CANADIAN RESIDENTS

☐ 1 YEAR, $35  ☐ 2 YEARS, $65  ☐ 3 YEARS, $95
($2.92/issue)  ($2.71/issue)  ($2.64/issue)

Call toll free to order by credit card (800)435-0715
From Canada call (815)734-6309,
or
Send check, money order (U.S. dollars only), or credit card number to:

Stereophile
P.O. Box 364
Mount Morris, IL 61054

OVERSEAS $75/yr

Send to: Stereophile
P.O. Box 5529
Santa Fe, NM 87502

Name ______________________________
Address ___________________________
City ______________________ State _____ Zip ______
☐ Check/money order enclosed
☐ Bill me
☐ VISA  ☐ Mastercard  ☐ American Express
Card No. __________________________ Exp. __________

1406
We all know it’s impossible to reproduce live music. An obvious statement, no doubt, and one that holds every audiophile hostage to the never-ending search. As a musician, I find the situation especially frustrating. The constant reminder of live vs reproduced makes living with an audio system a serious compromise, regardless of price or quality. About three and a half years ago, however, I reviewed a product which I felt, and still feel, offers the first real glimpse of that impossible dream: the B&W 801 Matrix Monitor. Although it wasn’t perfect, I found this speaker provided more musical honesty than anything I had heard before. In this respect, it established a new standard by which others would be judged.

Well, B&W has done it again. With the introduction of the Matrix 800, they have redefined the liaison between music and machine, offering a product that again I feel is destined to become a standard of excellence. This is, in my opinion, the first speaker design to successfully meld the dichotomy of musical and sonic reference, without making any compromises. One may say that this is a contradiction, since “reference” implies an analytical quality rather than the ability to provide an emotionally moving listening experience. And in all other cases, I would have to agree. But not this time. The Matrix 800 has the uncanny ability to uncover the most minute flaws inherent in source material and electronics, while supplying a listening experience only rivaled by live music. Yes, there are more expensive speakers that will provide grander displays of audio spectacle, but not with the same magical mix of musical honesty and ultimate transparency as the 800.

With my beloved 801s relinquishing the throne to their new, more expensive cousins, the question must be asked: Do I still like the 801? You bet. Next to the 800, it remains my speaker of choice. The next logical step in this discussion is an apples/apples comparison between the two. A difficult task, since they are so entirely different in all respects. But if I were pushed to make an absolute comparison between these two products, I’d have to say that the 800 is the full realization of the seed planted by the 801. In other words, the 801 redefines dynamic loudspeaker design—the 800 redefines the art of musical reproduction.

**Physical highlights**

The Matrix 800 is a unique speaker—you’ll either love it or think it’s the ugliest thing since the Edsel. In contemporary surroundings, such as in the company of the art works of Morris Lewis or Pablo Picasso, a pair would be magnificent. But in a small room, decorated with English oak and pine antiques, such as I have, they stick out like the biggest, sorest rosewood thumbs imaginable. When I mentioned to my wife, Lynn-Jane, that perhaps a less obtrusive finish such as black ash would make them more domestically palatable, she came back with “That’s about as effective as rearranging the deck chairs on the Titanic!” We presently have a standoff between speakers and spouse. She hates the way they look but loves the way they sound (a true love-hate relationship). I guess I get to keep them.

Physically, the Matrix 800 stands just over 6’ tall, with quasi-pentagonal woofers enclosures located on top and bottom. Each bass module

---

1 The B&W 801 review appeared in *Stereophile* Vol. 10 No. 9, December 1987.
is the vertical mirror image of the other, with front-venting circular ports located on the very bottom and top of the vertical array. To one side, these woofer cabinets extend into two triangular points, facing sideways, with the opposite side offering a flush surface from top to bottom of the speaker. The midrange/tweeter enclosure is vertically sandwiched between the two woofer modules, and the three cabinets rest on a flat base constructed of heavy-gauge cast alloy filled with nonresonant Fibercrete (the same material used in the midrange/tweeter heads of the Matrix 801 and 802 speakers). There are four threaded metal cones provided, which screw into the bottom side of the base. All three cabinets (two woofer, one midrange/tweeter) are connected with a rear-mounted steel coupling bridge affixed to the central cabinet (which is acoustically decoupled via energy-absorbent mountings).

The two complete speaker assemblies are mirror images of one another, which can either be placed with woofer cabinet points facing inward or outward (toward or away from the opposing speaker). Both of these positions are valid, depending on the individual room acoustics, and will be discussed in greater detail further on in this review.

Although the Matrix 800 differs dramatically in design from any previous B&W product, it represents an application of current technology rather than the incorporation of any radical innovations. According to the people at B&W, the development of the 800 has given them the opportunity to use a significant amount of the data gathered during their ten-year experience with both versions of the 801. Their "Matrix" technology, incorporating an internal system of honeycombs within the cabinets, is employed within the 800's woofer and midrange/tweeter enclosures and effectively produces sonically inert cabinets.

Unlike the Matrix 801, the 800 has separate crossovers housed in the three separate cabinets. Each woofer enclosure has a low-pass crossover dedicated to the driver inside, and the central cabinet houses the mid/high crossover boards. All crossover components are laid out to minimize any possible interactions and crosstalk, and polypropylene capacitors are used exclusively. There is no internal wiring between high-, mid-, and low-frequency drivers or crossovers. All the connections between the different sections are accomplished externally,
via four pairs of WBT gold-plated binding posts (which are the finest I’ve yet come across). All internal wiring between binding posts, crossovers, and drivers is composed exclusively of van den Hul 2.5mm-square silver-plated OFC.

The 800 can be connected to the amplifier in a number of ways, but bi-wiring is suggested as a minimum by the manufacturer. To encourage this, B&W encloses a pair of Monster Power-Line cable jumpers for connecting the two woofers, on top and bottom of each speaker array. There are also pairs of solid metallic jumpers supplied for external connection between tweeter and midrange binding posts, so that all that is basically required is one source cable to the lower woofer binding posts, and one to the midrange or tweeter. Tri- and quad-wiring is also possible (I’ve tried both), as is bi- and tri-amping.

Just as with the 801, the 800 bass units are tuned to a fourth-order Bessel alignment (~6dB at 32Hz). However, the supplied bass-alignment line-level filter (aka “equalizer”) converts the alignment to a Butterworth sixth-order (~6dB at 19Hz). The theoretical benefits conferred by this not only include an extended bass response in a cabinet tuned to a higher fundamental, but also a rapid attenuation (36dB/octave) of any low-frequency information below 19Hz that might cause excessive woofer excursions and possible distortion. While the bass-alignment filter is, in my opinion, a necessity for accurate low-frequency reproduction with the 801 Matrix Monitor, I’m not so sure that the situation is the same with the 800. More on this later.

Before completing the first draft of this review, I bit the bullet, bought a ticket, flew to England, and paid a visit to B&W’s research facility in Steyning, West Sussex. Although the past six months’ auditioning had given me an opportunity to really get to know this product, I wanted to gain some insights into the design, technical background, and raison d’être of the Matrix 800. According to Robert Trunz, the Swiss President of B&W Loudspeakers Ltd., the 800 was the result of his desire to have a higher-sensitivity successor to the 808 monitor loudspeaker, incorporating the 801’s technology. It also had to be capable of producing the very high SPLs necessary to today’s pop studio requirements, while maintaining a high degree of musical finesse. The man designated for the job of designing this new product was Dr. John Dibb, a member of B&W’s engineering team, who is also responsible for the new Matrix 803, 804, and 805 speakers. Kenneth Grange, of the Pentagram Partnership, was ultimately responsible for the final visual and structural design. During my two days at Steyning, Dr. Dibb supplied me with an impressive amount of information concerning the Matrix 800’s design, as well as taking the time to decipher some of the technical information into a form that this musician could understand.

According to Dibb, initial one-box designs using multiple drivers, such as the preceding 808, were abandoned after listening tests proved disappointing. He mentioned that the idea of having bass units at substantially different distances from the room boundaries is not new, and “is based on the theory that the addition of two uneven responses can, with care, produce a more even result.” It is for this reason that “the lower bass unit on the 800 is slightly less than one third the height of the upper, so that cancellation and reinforcement effects from the floor have very few coincident frequencies.” The pentagonal shape of the bass cabinets is dictated by the need to minimize any internal standing waves produced by parallel surfaces; thus the unique shape of the woofer enclosures. While other designs were discussed, the B&W engineers finally opted for the angular shaping of the bass cabinets for reasons of structural strength and ease of manufacturing.

In the upper-frequency domain, Dibb suggested that the best results are “generally obtained when the edge of the baffle is close to the drive-unit, and when the unit dimensions are large in comparison to those of the baffle.” Of course, it would be best to have the tweeter mounted on a very small baffle, such as is the case with the 801. But since the tweeter had to be in close proximity to the midrange drivers, between the two woofers, this was not possible, and the width of the midrange/tweeter cabinet became critical. Calculations apparently dictated that a baffle with the width of 7.5” (190mm) would be the best compromise, and effectively keep the first reflective high-frequency effects out of the passband of the driver.

Despite several attempts at new midrange driver designs, the existing Kevlar-coned unit used in the 801 was ultimately chosen for the 800. Since output levels required in the 800 system, particularly in the 400Hz–1kHz band, would have pushed one driver to the limit, two
identical drivers in parallel were incorporated. Although B&W did try a symmetrical "D'Appolito" topology with a central tweeter flanked by upper- and lower-midrange units, imaging was felt to suffer, and the final configuration with tweeter atop two adjacent midranges was chosen. While both midrange drivers give an equal output at their lowest operating frequency (380 Hz), the lower of the two is attenuated at the top of its range, the upper being boosted by the same amount to give a flat response curve. This was done in order to achieve the best polar response, and prevent frequency-dependent imaging and phase problems between tweeter and lower-midrange unit.

The cones of the two 12" bass drivers are made from the same Cobex material used in the 801's unit. Soon after the introduction of the 800 speaker, a rubber woofer surround was introduced. Dibb mentioned that their work on the 803, 804, and 805 speakers, subsequent to the initial development of the 800, indicated that the "speed" of the bass attack is dependent on the amount of mechanical damping in the driver (mainly the surround). If the ratio of this to the electromagnetic damping of the driver is reduced, the relative speed of the bass and midrange is improved.

The 1¼" metal-dome tweeter was apparently conceived as a high-efficiency, high-power unit for professional pop music use. This driver is capable of producing 93 dB/W continuous (actually 96 dB, but it's padded down 3 dB to maintain lower coil temperatures), with a maximum compression on attack of only 0.5 dB. Dibb suggests that this accounts for the excellent transient response of the 800 speaker system. Ferrofluid cooling is incorporated in this new tweeter design, as it is in all of B&W's new 800 series speakers (including, now, the 801). The large diameter of this new driver means an increased directionality of high frequencies (relative to smaller tweeters), so B&W has incorporated both phase and "loading" rings around the tweeter that minimize high-frequency beaming, giving the unit a more constant directionality over its entire passband. According to the manufacturer, this tweeter is capable of producing 120 dB+ dynamic peaks at 4 m in a normal listening room.

As the power handling of the 800 is effectively double that of the 801, the APOC (protection circuitry) incorporated in the 801 was deleted from the 800. Dibb felt that past experience with the 801 suggested that APOC is largely superfluous, and that most domestic users will probably never see the protection system operate. He pointed out that the people at B&W were becoming more and more aware of the deleterious sonic effects of various obstacles in the signal path, and that it would not be worth risking any possible audible effects of relays or other such devices for the "sake of one lunatic who might pump enough power in to damage the speakers." (We all know that no Stereophile reader would think of doing such a thing!)

The 4 ohm input impedance characteristic was chosen for two principal reasons. First, the B&W engineers felt that most good amplifiers (with which this system will, no doubt, be used) would deliver their maximum power into 4 ohms or less. The second refers to the ideal situation where the driving amplifier runs out of volts and current at the same time, thereby delivering the maximum power to the speaker load. This, according to Dibb, is more likely to occur with a 4 ohm load.

Setup

If you're the type of person who loves to tinker with your car every weekend, and don't mind having to remove half of the engine in order to change the plugs, you'll love deciphering the 800 owner's manual and assembling these monsters. But if you're like me, this could be a big pain. The 800 comes in six large crates, with no indication of which to unpack first or where anything is supposed to go. The manual is confusing, and often incorrect, which may make you question your ability to read English ("this screw just doesn't fit into that hole!"). Luckily, in my case, Victor Goldstein (consultant to B&W), Chris Browder (Executive Vice President of B&W Loudspeakers of America), as well as two members of our musicians' listening group (Al Merz, Ed Kelly) came to the rescue. Victor had set up several pairs of 800s before these, and knew pretty much what to do, while the rest of us looked on in utter disbelief. I recommend that at least two people be available when you assemble your 800s (lifting the midrange/tweeter and upper woofer modules into place requires a combination of brute strength and finesse); better yet, let your dealer do all the work. It took five of us the better part of a day (nine hours) to unpack, assemble, and position my review pair.

Stereophile, June 1991
Initially, the speakers were bi-wired with Straight Wire Maestro speaker cables, as well as similar jumpers between woofer modules. There were also short Maestro cables between midrange and tweeter binding posts, which I replaced a few days later with the supplied solid jumpers. I also tried the Monster Powerline woofer jumpers, but found the Straight Wire configuration throughout to be superior. Electronics initially consisted of Esoteric and Krell digital drives, Theta Pro Generation II (balanced) D/A converter, Mark Levinson No.26 preamp, and Krell KSA-250 power amplifier (I was in the middle of writing my January review of the KSA-250 when the 800s arrived). I tried both the supplied B&W bass-assignment filter and mono units from the Anodyne Group in North Carolina, and immediately preferred the Anodyne (a pair of mono MaughanBox filters from ListenUp Audio in Denver subsequently arrived, and were extensively auditioned). Three days before press deadline, I received a pair of prototype mono bass-assignment filters from Krell Industries.

Other components used during the course of the reviewing process (six months, and approximately 600 hours of listening) were: Rotel RCD-855 CD player, Krell KBL preamplifier, Mark Levinson Nos.23 and 23.5 power amplifiers, and Krell KMA-300 power amplifiers. Interconnects included Magnan VI (balanced), Madrigal HPC (balanced and single-ended), Straight Wire Maestro (balanced), Kimber KCAG (balanced and single-ended), Krell Cogelco (balanced), AudioQuest Diamond (balanced), and Purist Audio Design Maximus (fluid-filled, balanced). Speaker cables included AudioQuest Clear Hyperlitz, AudioQuest Sterling Hyperlitz, Krell Path, and Kimber AAG and 8AG. I am presently using a combination of AudioQuest Clear (bass) and Sterling Hyperlitz (mid/high) speaker cables in quad-wired configuration, although Straight Wire has just sent enough Maestro to allow me to try it with their product. Although I am principally using Magnan VI balanced interconnect, Straight Wire Maestro, the new AudioQuest Diamond, and the very unusual Purist Audio Design Maximus interconnects are being phased into the system in stages. I should also mention that I was hoping to receive a Jadis Defy 100Wpc stereo tube amplifier before the deadline for this review, but this did not materialize. This is unfortunate, because I’ve heard the Matrix 800 with Jadis equipment elsewhere, and found the results to be outstanding.

Sonic impressions
My first exposure to the Matrix 800 speaker was somewhat of a shock...a very negative shock. It was at the 1990 Stereophile High End Show in New York, where the US debut of this mysterious new super-speaker took place. I had already read a review of the 800 in the German publication Audio, which had proclaimed it to be the best of the best. So, naturally, I was hoping for something that would blow me over. It blew me over, all right, but in the wrong direction. Tubby, overbearing midbass, detached and opaque midrange (or lack of same), and recessed high frequencies greeted my ears. A major disappointment. The two speakers were set up in a large, heavily acoustically damped exhibit room, and they sounded terrible. By the third day of the show, much of the room treatment had been removed, with significant sonic improvement. Much better, but still no cigar.

It wasn’t until I heard the same speaker in Brussels, Belgium, during a National Symphony European tour, that I began to realize that this was a truly great product, and that the New York experience had been an aberration. Since that time, I have auditioned 800s in several venues around the world, and have come to the conclusion that this speaker is ruthlessly revealing of everything upstream, be it electronics or source material.2

The 800s work surprisingly well in my small listening room (15’4”W by 16’3”L by 6’10”H), in spite of the low ceiling which allows about 4” of clearance above the top of the speakers.3 Although B&W conditionally recommends that the speakers be placed well out from the rear wall, angled in toward the listener (to prevent shifting of the image with head movements), with woofer points outward (away from the opposing speaker), my experience, so far, would suggest that there is no set

---

2 I found out, after the fact, that the New York B&W 800 exhibit used out-of-the-box Jeff Rowland electronics and Straight Wire speaker/interconnect cables, all of which, in my experience, sound absolutely dreadful until after several hours of burn-in. I’ve also discovered that this speaker does not need, or like, highly acoustically damped rooms. Best results are obtained in average listening rooms with little or no sonic treatment.

3 In point of fact, however, the room is effectively larger than meets the eye, since an open door between the two speakers into a second, smaller room affords a larger bass-loading area. There is also an open staircase up to the main floor on one side of the listening room, further extending the bass-loading area throughout the entire first floor.
rule; experimentation is of utmost importance. I have the two speakers set approximately 3½' from the rear wall (which is lined by cabinets full of LPs and CDs), with woofer points facing inward, placing the central midrange/tweeter cabinets 6½' apart, on center. Each speaker is about 2½' from the side wall. The two speakers are angled inward, slightly more open than total convergence at listening position, which is 9½' from the drivers. Although several other configurations were tried, this appeared to create the best balance of soundstage dimensionality, along with the fewest room/speaker interface problems. I have found, both in my listening room and at the listening room at B&W's Steyning research facility, that placing the woofer points outward causes some ringing that may be due to reflections from the midrange drivers along the concave cavity between woofer enclosures from the room side walls. There is a slightly wider soundstage with the points out, but an upper-midrange emphasis in this position makes everything sound a bit forward and hard in my room.

Quad-wiring appears to improve all areas of performance (soundstage dimensionality, transparency, and extended response at both frequency extremes). Quad-wiring is easy: simply run four speaker cables per channel from the amplifier to each of the four pairs of binding posts (two woofers, midrange, and tweeter) of each speaker. Of course, so much high-quality speaker cable can do significant damage to the bank account, but the sonic improvement is well worth the bucks. Tri-wiring (separate cables to midrange and tweeter, and single cable to lower woofer with jumper to top woofer) does not work nearly as well. In this configuration, the upper midrange is too prominent, causing the speaker to sound unnaturally forward. I have not yet tried to bi-amp the 800s. Past experience has shown that identical amplifiers are necessary for correct top-to-bottom balance on any good speaker, and I don't yet have a pair of identical amplifiers. Furthermore,

\[4\text{ Bass performance is particularly improved with separate wiring to each woofer. Several people who are technically more knowledgeable than I have suggested that this is probably due to a decrease in the effective output impedance of the amplifier.}\]
this speaker will probably be used more often with a single amplifier, so this review will reflect that situation.

The issue of whether or not to use a bass-alignment filter (either the one supplied with the speakers, or an after-market product) is a gray area, since individual room acoustics, wiring configurations, and your personal listening tastes are involved. Unlike the 801 and 802 speakers, the 800 does not require equalization to obtain excellent bass attack and slam. In fact, when I asked Dr. Dibb about this point, he felt that unless the particular listening space is very bass-shy, addition of an equalizing filter may not be desirable. I found it interesting that the people at B&W in England generally prefer not to use any bass equalization with the Matrix 800, since their experience (and mine) suggest that addition of such a device can cause significant deterioration of midrange clarity despite the filling out of the very bottom octave of bass.

All bass-alignment filters are not the same. The B&W unit supplied with the speakers is not acceptable, adding an obvious sonic haze while dulling mid- and high-frequency attacks. This filter appears to do the least sonic damage when placed in a preamplifier tape loop, rather than between preamp and power amp. Three manufacturers in the aftermarket market offer high-quality bass-alignment filters. The first contestant, a dual-mono design from Anodyne Acoustics, does considerably better than the stock filter, but has a tendency to soften transients, producing a more than natural midbass bloom. On the plus side, however, this filter appears to extend soundstage depth, which will no doubt appeal to many listeners. This filter is supplied with both single-ended and balanced connectors, and sounds best between preamp and power amp. The second contestant, the MaughanBox 800 MB-11, is built by ListenUp Systems, and comes in a similar configuration to the one from Anodyne. ListenUp, however, has opted to modify the speaker manufacturer’s recommended bass-equalization curve (7dB boost at 20Hz vs. the specified 6dB boost at 24Hz), claiming that this will remove some of the bass boom often occurring in many rooms with the 800 at 30–60Hz. I’m not going to argue with their premise, other than to say that in our room, with such an equalization, this filter produces a noticeable midbass leanness and dry (vs. reverberant) acoustical perspective. Extreme low bass does benefit, but at the expense of pitch definition in the contra octave. Soundstage width and depth are marginally increased, but height is truncated.

The third product offering comes from Krell Industries. I hesitate to go into great detail with this model, simply because I have a prototype sample which may or may not be identical to production units. I’d have to say, after initial listening, that this equalizer holds the best hope, so far, of not screwing up the midrange and highs.

While on the subject of bass response, it might be interesting to note that the addition of a second woofer actually decreases midbass boom. Upon disconnection of the top woofer, bass response becomes less even and tight, and a significant amount of spatial ambience is lost. One might assume that two woofers would exacerbate any room/bass interface problems, but it appears that placement of the second woofer is indeed critical, as Dibb’s theory suggests. Perhaps it is for this reason that the 800 works so well in my small room. Of all the speakers I’ve had in this same listening area over the past eight years, (Quad electrostatics, KEF 105/2s, Martin-Logan Monoliths, Infinity RS-1Bs, B&W Matrix 802s and Matrix 801s), none have provided as much bass clarity as the Matrix 800, even though it barely fits into the space. My only caution concerning room placement with this speaker is that physical size of the room is not as important as placement within the room.

About two weeks after first installing the Matrix 800s I noticed a significant deterioration in clarity. Bass became increasingly indistinct, and the midrange slowly turned to mush. Over the course of a week, these magnificent speakers had gone from the musically sublime to the sonically hideous, making me a total nervous wreck. Was I going deaf, or had my whole system turned to rubbish? Regardless of electronics or program material, the sonic murkiness became increasingly worse, to the point that it was almost unlistenable. Finally, during a severe attack of Audiophilia Nervosa Review- us Interruptus, I phoned B&W in an attempt to get some help. Although they had not heard of this problem previously, they suggested that I inspect the woofer mounting screws, to make sure that all were securely tightened. All turned out to be very loose; upon tightening, the problem disappeared, with astonishing Jekyll/Hyde results. Dibb guessed that the loose screws
allowed the seal around the woofers to open, thus creating an additional acoustical vent, and changing the Q of the bass cabinets. He further postulated that this prevented the tuned reflex port from properly damping woofer excursions, creating the very poor bass quality and transient response. Apparently the combination of high playback levels and climatic changes during overseas shipping had forced the woofer mounting screws to loosen. Since that time, all subsequent woofer mounting screws have been secured with an adhesive, and further plans for improved stability are in the works. I’ve noticed that, unless the screws on the review pair are tightened monthly, the problem tends to recur.

I have never been a fan of speaker grilles. The 800 grilles, however, are noticeably different, since a radiusd convex curve is created at the front edges of the midrange/tweeter enclosure when installed. Dibb maintains that this radius is necessary to optimize diffraction, and he may be correct. But I find that these grilles cause far greater musical obstruction and loss of transparency than is gained by lowering diffraction artifacts. Of course, my opinion is not the only one, and a few other listeners did not support this argument. Andrew Litton, conductor and fellow audiophile, strongly suggested that lateral imaging was superior with grilles installed, and the overall sound was more “coherent,” in spite of a “small” loss of transparency. Lynn-Jane agreed with Litton, describing the speakers with grilles as “fuller”- and “sweeter”-sounding. Other fellow musicians, all colleagues of mine from the National Symphony (Bob Kraft, bass trombone; Al Merz and Kenneth Harbison, percussion; Ed Skidmore, double bass) unanimously preferred the speakers sans grilles, claiming much better transparency, ambience, and upper-midrange clarity. Removal of the woofer grilles also seems to make a big difference in clarity and speed of bass attack. The engineers at B&W thought that the grille fabric itself may add a minute but unwelcome resistance to the front-venting reflex port. There is no doubt that the speakers sound dramatically different in each case, and it all boils down to a matter of personal taste.

But there is no personal taste involved when it comes to totally deadpan sonic honesty. In this respect, the Matrix 800 unquestionably redefines the phrase “with garbage in, you get garbage out.” Not to say that any of the electronics, interconnects, and speaker cables I have at home fall into the garbage category, unless you consider such names as Krell, Mark Levinson, Theta, Esoteric, Straight Wire, AudioQuest, Kimber, et al to be of such quality. Unfortunately, this very attribute could turn out to be the Achilles’ Heel of the 800. As Ed Skidmore so eloquently noted, “these speakers are analogous to looking at yourself in the Howard Johnson’s mens’ room mirror on the New Jersey Turnpike at three o’clock in the morning. Those awful yellow-green fluorescent lights show you more than you really want to know.” In this sense, the Matrix 800 can best be described as the ideal audio microscope, examining everything it sees, magnifying that image, and delivering the truth, warts and all. Even the slightest system change, such as replacing one pair of interconnects, or a minuscule variation in the AC mains line voltage, has the potential to make or break the sound with these speakers. There are times, late at night, when the sound is absolutely glorious. The next morning, the same setup can sound quite ordinary. Good recordings will sound better than you ever imagined, but give this speaker cold, out-of-the-box electronics or cables, and the results can be unlistenable. This attribute is a double-edged sword, making this speaker the choice only for those listeners willing to invest the time and expense necessary to get the best out of such a high-performance thoroughbred.

Even though the 800 is very efficient, with a 4 ohm impedance and 93dB sensitivity, it loves power. I would recommend a minimum of 200Wpc, and more, if the budget allows. Both the Mark Levinson No.23.5 and Krell KSA-250 are perfect matches for the 800, although it definitely likes the dynamic punch of the latter. Of course, the Krell MDA-300 (with 600W into 4 ohms) is fabulous but it is certainly not necessary for excellent results. I don’t know of any other speaker that will give as much sonic excellence with a single amplifier. In that respect, the 800 is a bargain.

Musical results

From the moment I first heard the Matrix 800s in our home, I knew that there was no way back. It is impossible to adequately describe

5 Andrew is, at present, music director of England’s Bournemouth Symphony Orchestra, and an internationally respected conductor. As a very knowledgeable audiophile and member of our musicians’ listening group, his input is invaluable.
what these speakers do to the listening experience short of saying that, after this, all others sound lifeless and compressed. "Open," "spacious," "transparent," "dynamically unrestrained," are only a few of the terms that I can conjure up to attempt a sonic description. Not unlike the first time I played in Carnegie Hall: the sense of immediacy with the musical performance became overwhelming.

"Dance of the Seven Veils," from Richard Strauss's Salome (Antal Dorati/RPO, Chesky CD36) was the first piece auditioned after initial setup, and the results were stunning: a huge, wall-to-wall soundstage, high and deep, with dynamic presence approaching the real thing. Every instrumental section of the orchestra was clearly defined in space, almost as if I could jump out of my chair and touch the performers. A totally open sound, without any barriers between listener and musicians. Tight, clean bass transients, without any trace of boominess. But perhaps these super speakers' most impressive asset was the way in which they reproduced the ambience surrounding each instrument, defining the material density of each instrumental color in a vibrant sonic image.

In recording after recording, the honesty of these speakers came through, making me sit up and take notice. Everything in the source material was revealed with startling clarity. Unfortunately, this uncovered a multitude of sins, both sonic and musical. Unwanted noises such as chairs squeaking on stage during recording sessions, people talking, doors closing, and even traffic outside were suddenly apparent. Overly miked recordings, tolerable before, became unlistenable. In the musical realm, every aspect of the performance was made more obvious. Sloppy ensemble playing and wrong notes were suddenly unveiled. Key noise and breathing from the brass and woodwinds were, for the first time, apparent. As if a layer of fog was lifted from the musical performance, every individual musical line was now clearly delineated.

The overall sonic impact of the Matrix 800 is a study in perfection. Products such as the Wilson Audio WAMM and the Infinity IRS V will definitely put more sound into a larger space. But I do not believe that any other speaker, regardless of cost or size, offers the same magical mixture of ultimate clarity, dynamic impact, and musical integrity supplied by the 800. On the top end of the dynamic scale, the Matrix 800 is totally effortless, with never a sense of strain or sonic compression. Of course, some of the other heavy hitters in the speaker world will transmit the same volume of sound, but not with the 800's speed and control. The leading edge of attack (in other words, what happens immediately before and after a musical transient) is so necessary to the overall sonic impression. A bass tuba transient will move much more air than a bassoon; a double-bass attack will have more sonic weight than a violin. And when a full orchestra is involved, the speaker must be able to reproduce each separate instrumental transient accurately, en masse, or the entire sonic picture will be compressed and dull. This is where the 800's amazing dynamic speed and ease are apparent. Every instrumental and vocal attack is clear, precise, and transparent, with the proper weight and focus, just as in live performance.

The 800 is equally impressive on the other end of the dynamic scale. Even during the loudest climaxes in vocal and orchestral music, this speaker retrieves the finest dynamic nuances, allowing every musical line to be clearly heard. All of the softest "sub-dynamic" attacks heretofore lost in playback are now clearly reproduced, allowing the listener to hear into, rather than at, the performance. So while this speaker will pin you against the back of your chair with a 100dB+ wavefront, it will simultaneously retain the low-level resolution formerly associated with the finest electrostatic designs. It can speak very softly, but carries a big stick.

If you value accurate soundstaging, this is your ideal speaker. Many others give impressive displays of depth, width, and even height. But nothing, so far, equals the natural sense of ambience and musical reconstruction within the soundstage. I use the term musical, since many similar products rely on frequency aberrations to supply dimensionality. The 800 does not, and in fact does something else that I believe is a first: accurate rendition of size within the soundstage. As an example, the Mercury Living Presence reissue CD of British and American Band Classics (Frederick Fennell/Eastman Wind Ensemble, Mercury 432 009-2) features a group of approximately 44 musicians, seated in tight block formation, in five rows. All in all, a very compact ensemble. With every other speaker, it has always come off sounding like a big wind band, spread out.
on the stage. But the Matrix 800 portrays it accurately: a small group playing on a very large stage. Conversely, the Vienna Philharmonic spreads from wall to wall, and 50' behind the speakers in the CBS recording of Gustav Mahler's Symphony 3 (Lorin Maazel, CBS M2K 42403). The horn section is solidly placed well behind the speakers, and above stage level (the VPO, like most other European orchestras, plays on tiered risers), with the strings appearing far forward, at ground level.

Harmonically, the 800 is dead on. Not only are the harmonic structures of individual instruments and voices amazingly well reproduced, but the pitch of each is also clearly delineated. One might not think that this is important, but pitch clarity allows the listener to pick out individual musical components within complex passages (such as one voice in a choir of a hundred), and hear, for better or worse, each performer's intonation. This is one of the things that I have always been aware of in live performance, but up until now had not been able to retrieve from recorded source material.

Every musician who has heard these speakers has come away in awe. The harmonic accuracy, overall clarity, and realistic rendition of the musical impact is without peer. Andrew Litton, after hearing a playback of his Tchaikovsky Symphonies 1 and 2 with the Bournemouth Symphony Orchestra (Virgin Classics VC 7 91119-2) proclaimed this to be the first time that he had ever heard a performance as it sounded in the hall, in proper perspective, with all of the impact intact. Interestingly enough, one is not aware of the spectacular bass response, the open and clear midrange, or the smooth high end. Nor does one single out the incredibly life-like soundstage, extending far beyond the speaker and room boundaries. Why? Because listening to this speaker makes you forget you're hearing sounds through a mechanical device. When you hear music through the Matrix 800, you're not hearing hi-fi—you are at the performance. Above all else, this speaker brings the human essence behind the performers to life. And that is what musical reproduction is all about.

Shortcomings
There are none.

Conclusion
The B&W Matrix 800 redefines the art of loudspeaker design. To this end, it goes far beyond anything else currently available, regardless of price or size. While I can't imagine anyone not being impressed with the sheer dynamic capabilities and enormous soundstage of this speaker, it is far too demanding of time and ancillary electronics for the casual listener. Musically, it has no peers. The B&W 800 is the ultimate musicians' reference transducer, retrieving every nuance of the recorded performance. In fact, I'm putting my money where my music is, and buying the review pair. So if you want the best, and are searching for that elusive dream of the absolute, there is nothing, short of the real thing, that will bring you closer to live music.

JA offers some measurements
Normally, I ask reviewers to ship the products to Santa Fe for measurement once their listening sessions are over. In the case of B&W's immense 800, however, the Mountain—in the shape of Robert Harley, Stereophile's computerized test gear, and myself—decided it would be more convenient to visit Muhammad in his Arlington, VA hideout.

As explained earlier, Lewis's listening room is a small basement, with a solid floor and solid walls apart from that behind the speakers. This wall is of drywall construction, with a central doorway leading to a similarly sized exercise room, meaning that the loudspeakers both "see" a much larger space and are effectively positioned a third of the way along the long dimension of that space. Certainly, the prodigious levels of low bass that Lewis managed to produce from the 800s seem unreal for such a small room.

The listening seat is a sofa in front of the rear wall, and both this fact and the proximity of the sidewalls to the speakers led me to expect confused imaging from the 800s, with a somewhat shallow soundstage.

I was completely wrong. These speakers may be ugly as all get-out, but acoustically they're totally invisible. Yes, central imaging was a little broader than the best I have experienced (it was better with the grilles in place), but I could not imagine anyone not being impressed with the sheer dynamic capabilities and enormous soundstage of this speaker. It is far too demanding of time and ancillary electronics for the casual listener. Musically, it has no peers. The B&W 800 is the ultimate musicians' reference transducer, retrieving every nuance of the recorded performance. In fact, I'm putting my money where my music is, and buying the review pair. So if you want the best, and are searching for that elusive dream of the absolute, there is nothing, short of the real thing, that will bring you closer to live music.

6 The first time I visited J. Gordon Holt's old Sara Fe listening room, in early '86, the venerable JGH had a pair of Martin-Logan Monoliths set up in this exact fashion—seat against the wall, speakers a third of the way along the room's long dimension, listener therefore positioned close to the speakers—and I was impressed then with the sound produced. The speakers have plenty of room to "breathe," but the listener sits in the vividly imaging nearfield.

Stereophile, June 1991
which is something to lay at the feet of the too-
close room boundaries. But the soundstage
was wide and deep, with a sense of scale that
I have only previously experienced from
Infinity IRS Betas. Orchestras sounded as large
as they do in real life; contrariwise, solo instru-
ments and voices sounded as small as they
should-listening to a solo clarinet recording
on these behemoths was one of the most realis-
tic reproduced-sound experiences I have
encountered. Coupled with that ability, the
800s appeared to have no coloration, as well
as offering a sense of dynamic ease that I have
rarely heard, as LL mentioned, loud instru-
ments failing to obscure quieter ones—again,
as in real life. The upper-bass to lower-midrange
transition was also seamlessly managed, which
I assume to be due to the staggered woofer-
boundary arrangement. The 800 is quite
definitely a Class A speaker!

Enough of the subjectivity; how did they
measure? Impedance, shown in fig.1, was to the
4 ohm spec, with a minimum value of 3.4 ohms
in the upper bass at 118Hz. A more detailed
examination of the impedance at low frequen-
cies revealed the port tuning to be low, cen-
tered on 23Hz, with a maximum impedance
value of 16 ohms at 44Hz. Using a χ/4-octave war-
tle tone centered on 1kHz gave an approximate
sensitivity of 94dB/W/m, which is very high.
Checking the drive level at moderately loud
listening levels in Lewis's room revealed that
the KSA-250 was merely cruising, average signal
levels rarely rising above 1V—½W! Given the
800's relatively high impedance value in the tre-
ble, it would seem that, provided the amplifier
is capable of driving 4 ohm loads, the 800 is an
easier load to drive than its physical bulk would
imply.

All the acoustic measurements were per-
formed with the grilles removed, as that was
the way LL preferred to audition the speakers.
The 800's impulse response 44° away on its
tweeter axis is shown in fig.2, and offers a
degree of ultrasonic ringing from the tweeter
as well as a relatively lazy lower-frequency
decay from the high-order crossover. Note the
multiple reflections of the impulse just after the
6ms mark, which are from the floor, sidewall,
and ceiling of Lewis's listening room, respec-
tively. These were windowed out in order to
calculate the speaker's anechoic frequency
response, which is shown, averaged across a
30° horizontal angle on the tweeter axis, in
fig.3. (Because of this windowing, the fre-
quency resolution of this graph is no better
than 300Hz; unfortunately, the bulk of the
speaker and the limited size of Lewis's room
meant that this was the best that could be
done.) Noticeable is a slight excess of energy
in the top octave, as well as a broad suckout in
the crossover region on this axis, which is some
46° from the floor, a little high for a typical lis-
tener. (Lewis sits with his ears on the upper-
midrange axis, 38° from the floor.)

Laterally, the 800 shows good, even disper-
sion up to 15° off-axis, though some brightness
appears at 15° or more off-axis on the "pointed
side." In conjunction with the proximity of LL's
sidewalls to the speakers, this probably explains
why he preferred the 800s with the points
pointing in rather than out. Fig.4 shows how
the 800's response varies with different micro-
phone height: the rearmost curve, taken 15°
above the tweeter axis, shows the crossover
suckout accentuated, implying that the speaker
shouldn't be auditioned by a standing listener,
who will hear a rather uninvoking balance.
The next-to-front and front two curves are
taken on the upper- and lower-midrange axes,
respectively, showing that the presence region
does fill in a little, but not completely, for a lis-
tener sitting below the tweeter axis. Frankly,
I was puzzled by this, as the speaker didn't sound
polite, or recessed, or any other subjective ad-
jective that could be placed at the feet of a lack
of energy in this region. The mild top-octave
boost only manifested itself in the form of a
slight exaggeration of tape hiss and digital quan-
tizing artifacts. Musically, it seemed irrelevant.

Fig.5 is a composite of five different mea-
 surements, showing the individual responses of
one of the ports, one of the woofers, the mid-
range units, and the tweeter, with levels
approximately matched. (The first two curves
and that of the midrange below 600Hz were
taken in the nearfield, with the microphone
almost touching the drive-units' dust-caps; the
tweeter response and the midrange response
above 600Hz were taken on the HF axis at a 44°
distance. The bass- alignment filter was not used
for these measurements.) Moving from low fre-
 quencies to high, the port output can be seen to
cover the low bass, with the notch in the
woofer's output confirming the port tuning at
23Hz. Even without the alignment filter, the
800 should give good low-bass output to 30Hz
or so. The crossover from the woofers to the

Stereophile, June 1991
midrange units can be seen to lie around 300Hz, with the midrange/tweeter crossover around 3kHz. The drive-units appear to be well-behaved out-of-band, the notch and subsequent peak in the woofer's response between 400 and 600Hz possibly being an interference effect due to the nearfield measurement technique. The notch in the tweeter response at 20kHz is also an interference effect, possibly from the complicated semicircular-profile "doughnut" surrounding the tweeter on the baffle.

Fig.6 shows the cumulative spectral-decay,
or "waterfall," plot for the B&W 800, taken on the tweeter axis at a 44″ distance. The cross-over suckout can be seen to be associated with a mild degree of resonant behavior above it (shown by the cursor position just above it at 4.26kHz), while a second, still mild, resonant ridge can be seen an octave higher around 8kHz, this perhaps due to the absence of the diffraction-control grille. Apart from these slight aberrations, the plot is quite clean. Examining the speaker's various enclosure walls with a stethoscope revealed a very "dead" construction, with almost no energy emitted from any surface other than the drive-units—which is how it should be! This lack of spurious, coupled with the speaker's high sensitivity, undoubtedly contribute to its sense of subjective ease.

Finally, as shown in fig.7, the bass-alignment filter offers only a moderate degree of LF boost, reaching a maximum of 5.5dB at 24.5Hz, with a steep filtering action below 20Hz. Omitting the filter to get the maximum midrange transparency of which the 800 is capable will suppress the speaker's low bass by only a small amount—but not necessarily always an unimportant amount.

All things considered, this basic set of measurements shows the 800 to be a well-engineered, low-coloration, full-range loudspeaker design. What they do not reveal is the astonishing transparency that Robert Harley and I experienced in Lewis Lipnick's listening room. The only real-world loudspeakers that I think compare with the 800 are the Apogee Diva, Infinity IRS Beta, Thiel CS5, Wilson WATT/Puppy, and possibly the Avalon Ascent and Duntech Sovereign, which makes the $15,000 price tag seem more reasonable.

—John Atkinson

---

**AUDIO RESEARCH DAC1**

**DIGITAL TO ANALOG CONVERTER**

Robert Harley

![Audio Research DAC1 D/A converter](image)

Specifications: Frequency response: 0.01Hz–20kHz ±0.2dB, S/N ratio: 100dB (unweighted 20Hz–20kHz). Distortion: 0.002% at 1kHz (level not specified). Channel separation: 100db at 1kHz. Phase linearity: ±0.5°, 20Hz–20kHz. Converter resolution: 18 bits. Input sampling frequencies: 32kHz, 44.1kHz, 48kHz. Three digital inputs: two coaxial on BNC jacks, one selectable between coaxial (BNC) and AT&T ST-type glass fiber-optic. Analog outputs: one unbalanced stereo pair on RCA jacks. Output impedance: 30 ohms. Power consumption: 25W. Warranty: 3 years, limited. Dimensions: 19" W by 5.25" H by 10.25" D (handles extend 1.6" forward of front panel). Weight: 12 lbs (net), 20 lbs (shipping). Price: $2995. Approximate number of dealers: 54. Manufacturer: Audio Research Corporation, 6801 Shingle Creek Parkway, Minneapolis, MN 55430. Tel: (612) 556-7570. Fax: (612) 556-3402.
The past 12 months have seen some remarkable developments in digital playback. Standards of digital musicality are far higher than they were a year ago, both on an absolute performance basis and in terms of what you get at various price levels. No other component category has seen such tremendous gains in value for money or number of new products introduced. It seems hard to believe that since Vol.13 No.6 (12 issues ago), we've reviewed such noteworthy digital processors as the Meridian 203, Proceed PDP 2, Stax DAC-X1i, Theta DSPo Basic, Wadia X-32, Esoteric D-2, PS Audio SuperLink, and VTL D/A. Each of these converters brought a new level of performance to its price point—or, in the case of the Stax and VTL, established a new benchmark of ultimate digital performance.

Just as these units provided stiff competition for previous products, so too will they come under the assault of improving technology. The art of digital processor design is so young that we can continue to expect further improvements coupled with lower prices as designers move up the learning curve.

Despite my high expectations that digital converters would continue to improve dramatically and drop in price, I was nevertheless taken aback by a product I consider to be a quantum leap forward in affordable digital processor musicality: the Audio Research DAC1. Priced at $2995, the solid-state DAC1 in many ways represents a serious challenge to the best digital playback currently available—regardless of price.

The DAC1 is the first digital product from the 20-year-old Minnesota company that has continually pushed the state of the art in music-playback technology, especially in preamplifier design. Audio Research's goal was to build a digital processor that incorporated their thinking in line-stage design and utilized the best digital/analog converter available, while keeping the price low enough to appeal to a wider range of audiophiles.

As we shall see, they have more than fulfilled their vision.

**Technical description**

The DAC1 is a straightforward unit, both in design and operation. Rather than include lots of features and design techniques that add to the unit's cost, ARC concentrated their build money on the essentials.

The front panel is Audio Research's traditional 19"-wide brushed aluminum with black handles, but sans rack-mounting holes. Three toggle switches are provided in a black recessed central area: one selects between the DAC1's three digital inputs, one inverts absolute polarity, and the third turns the unit on and off. Two green LEDs indicate if power is applied, and when the unit has locked to an incoming digital signal. The DAC1's simplicity and styling make it look very much like an SP-11 power supply.

Like the DAC1's front-panel layout and appearance, the chassis is also unmistakably Audio Research. The black top panel, ventilated by many closely spaced holes, screws into the chassis just like on Audio Research's preamps. The rear panel holds an IEC power-cord jack, a pair of gold-plated analog output jacks, three BNC coaxial input jacks, and a single AT&T ST-type glass fiber-optical input. A small toggle switch selects between coaxial and optical on digital input #1. Digital inputs 2 and 3 are coaxial only.

There is a move underway by the Academy for the Advancement of High End Audio (AAHEA) to standardize the optical and coaxial digital interface jacks and signals on digital data sources and outboard decoders. All agree that the industry-standard TOSLINK plastic optical input found on mass-produced equipment is inadequate for high-end applications. However, the AT&T glass fiber interface, first used by Wadia and found on just a few products, is quite expensive, especially for lower-priced high-end products. There is also general agreement that RCA jacks, which were never designed to handle signals in the tens of megahertz region, shouldn't be used for digital data. Getting everyone to agree on a replacement, however, is tricky. BNC jacks seem to be gaining popularity; even if no formal standard is agreed upon, BNCs may become the de facto standard.

Although the DAC1 is a departure for the venerable Minneapolis company in that it's their first digital product, the unit's design and execution reflect Audio Research's 20-year history of component building. The same parts quality, layout, and design emphasis that have made previous ARC products so successful (both musically and commercially) are apparent in the DAC1. These ARC hallmarks include an elaborate and complex power supply, simple audio signal path, all discrete implementa-
tion, the finest passive components, and wide
printed circuit board traces with careful layout.
I find a certain sense of beauty and harmony
when looking inside ARC products. They give
the impression of being perfectly executed,
with no detail left to chance. This meticulous
approach is readily apparent in the DAC.

The power supply comprises three trans-
formers, five discrete regulation stages, and two
IC regulation stages. An AC line filter cleans up
the incoming AC before the transformers. One
transformer supplies the digital input and di-
tal filter; another powers the DAC's ±15V rails,
and the third supplies the analog output stage's
±20V rails. The two IC regulation stages sup-
ply the less critical digital input stage and out-
put relay muting. The more expensive discrete
regulation is reserved for analog output stages
and the DAC. Discrete regulation is far more
expensive, consumes a greater pcb area, and
is much more difficult to implement than a
three-pin IC regulator and a couple of caps.
This unique topology is an outgrowth of Audio
Research's long history of preamplifier circuit
design. The discrete regulation is quite elaborate:
it takes up nearly a quarter of the pcb area.
Further reflecting ARC's emphasis on the impor-
tance of the power supply, most caps in the di-
crete regulation stages are Wima polycarbonate
types, and resistors are 1% metal film. The ana-
log and DAC power supplies use a newly devel-
oped, patent-pending Decoupled Electrolytic
Capacitor (DEC) circuit that reportedly enables
critical bypass capacitors to operate more effec-
tively in the middle- and high-frequency ranges,
where the ear is most sensitive.

The DAC's power supply—especially the
discrete regulation stages—is quite impressive.
I suspect that the unit could have been made
significantly less expensive by using the more
common IC regulators and electrolytic filter
caps. But at what sonic cost?

Like many D/A converters, the DAC's circuit
topology includes the ubiquitous Yamaha
YM3623B S/PDIF decoder chip\(^1\) and NPC 8x-
oversampling digital filter. Unlike most other
digital processors, however, the DAC employs
what is far and away the best-sounding (and
-measuring) D/A converter extant: the UltraAna-
log D18400 dual-channel DAC. The D18400 is
a combination of monolithic and discrete com-
ponents encapsulated in a 3" by 2" module.
The only better DAC I know of is UltraAnalog's
D-20400, a 20-bit converter, variations of
which are used in the Stax and VTL converters.

It's fair to say that the UltraAnalog DACs per-
form like no others: the exacting manufac-
turing process and calibration procedure is unique
to UltraAnalog. Each module is driven with
100,000 digital code transitions and the result-
ant analog output signal measured and
recorded. A computer then calculates the exact
resistor trim values necessary to achieve near-
perfect values for each "rung" in the resistor
ladder. A technician then installs discrete metal-
film resistors of the correct value. Because the
D18400 is factory-calibrated to such a tight
tolerance, no Most Significant Bit (MSB) trim-
er is needed in the digital processor's adja-
cent circuitry. Obviating the need for an MSB
trimer has many advantages: no calibration
is required after the digital processor has been
built, there is no chance of accidental misalign-
ment, and the unit will stay in calibration regard-
less of time, temperature, or other conditions.\(^2\)

Such performance doesn't come cheaply,
however. The cost of these DAC modules is
many times that of conventional IC DACs—a
fact reflected in the retail prices of other pro-
cessors that use the UltraAnalog units. The
DAC, however, is by far the lowest-priced con-
verter using UltraAnalog DACs. This was accom-
plished by using a single dual-channel DAC
rather than run two of them differentially as is
done in the Stax DAC-XII and Kineregics KDP-
100 Ultra. Audio Research's goal was to build
a digital processor that could take advantage of
the UltraAnalog DAC's remarkable perfor-
ance, yet still be affordable.

Further reducing cost, the DAC modules
used in the DAC are the 18-bit version rather
than the 20-bit type. ARC felt the 18-bit part
offered sufficient resolution and musically
satisfying results. Remember, designing an
audio component to a price involves weighing
the relative sonic merits of a huge number of
variables. If ARC had used the 20-bit DAC, per-
haps the power supply, for example, would
have to have been less elaborate—a trade-off the

---

1 The Yamaha receiver chip produces between 2 and 5 nano-
seconds of clock jitter in a standard implementation. The DAC
uses a jitter-reduction technique with the Yamaha chip to
reduce the amount of jitter in the recovered clock.

2 See my review of the Stax DAC-XII in Vol. 13 No. 8 for a more
detailed description of the UltraAnalog DAC, its calibration
procedure, and why such performance is important in D/A con-
verters. There is also a discussion of converter linearity and
MSB trimming in this month's "Follow-Up" of the Wadia 2000
and X-3.2 converters.
designers felt was unacceptable. Alternatively, they could just as easily have left out the very expensive AT&T fiber-optic input and put the savings into a 20-bit DAC—the latter makes the unit more marketable, the former makes the product more musical. In addition, a well-made DAC with true 18-bit resolution is far superior to a 20-bit unit that might perhaps have poor low-level performance. One should evaluate a product's overall design and performance rather than any single parameter. You can be sure that the designers weighed many options before deciding on the final circuitry and parts. Incidentally, we should acknowledge the role of critical listening in high-end product design when determining what parts and techniques produce a more musically satisfying result.

The analog stage occupies the rear right quarter of the pcb. Each of the two (left and right channel) high-current, discrete stages use J-FETs at the input and MOSFETs at the output. As with all ARC products, the semiconductors in the DAC1 undergo extensive in-house selecting and sorting. The TO-220 output transistors are numbered and have colored markings on them, indicating the testing process they have undergone. Each channel has an 8-pin DIP op-amp used as a DC balance servo. The third-order output filter is in the feedback loop of one of the gain stages. De-emphasis is performed in the digital domain, as is polarity inversion. A pair of muting relays shorts the signals to ground so no output appears at the RCA jacks until the unit has stabilized, thus keeping noise and glitches out of your system.

The analog stage design and implementation reflect Audio Research's tradition of preamplifier design. As previously mentioned, all analog-stage DC is supplied from discrete regulation stages, fed by a dedicated transformer. Resistors are 1% metal-film types, and the two capacitors in the signal path are polypropylene and polystyrene.

The DAC1's parts and build quality are extraordinary—even more so considering the $2995 price tag. In addition, the execution is similarly superb: the pcb is double-sided, with wide, heavy traces; careful layout has eliminated virtually all internal wiring; and the unit exudes craftsmanship and precision. The overall fit'n'finish is beyond reproach.

The music

"Do you think Bob has enough digital proces-

sons?" JA asked T.JN rhetorically as they scanned my equipment racks during a recent listening session. Yes, I do keep several digital processors on hand for comparisons with newly introduced challengers—all in the line of work, of course.

The DAC1 was auditioned with the VTL 225W Deluxe monoblocks driving Hales System Two Signatures with the Muse Model 18 subwoofer via 3' runs of bi-wired AudioQuest Dragon/Clear bi-wire speaker cable. The preamp was either an Audio Research SP-11 Mk.II or the passive EVS Stepped Attenuator, while interconnects were AudioQuest Lapis (preamp to power amps) and AudioQuest Diamond (processor to preamp). I drove the DAC1 with the Esoteric P-2 transport via Aural Symphonics Digital Standard or TARA Labs Digital Reference.

In a fortunate coincidence, I happened to get a Wadia WT-3200 transport (reviewed this issue) about the same time the DAC1 was delivered. The WT-3200 is one of the few transports to provide a glass fiber-optic output (the Barclay and the Wadia WT-2000 are the only other ones I'm aware of), allowing me to audition the DAC1 with both coaxial and glass optical input. This situation also gave me a chance to listen at length to the differences between coaxial and glass interfaces. The glass-fiber interface and its sonic characteristics are also described in the WT-3200 review elsewhere in this issue.

The dedicated listening room has a pair of Phantom Acoustics Shadows, an active low-frequency control system, in the corners behind the Hales Signatures. All AC power to the preamp and processors under audition was conditioned by a magazine-owned Tice Power Block and Titan. Levels were matched between processors under audition to within 0.2dB at 1kHz. Other digital processors available for comparison included the Meridian 203, Proceed PDP 2, Theta DSPro Basic, Wadia X-32, VTL D/A, and a Wadia 2000.

What first struck me about the DAC1's presentation were its liquid textures and resolution of layers and layers of fine detail. This is one area where good analog clearly beats even the best digital. The DAC1, however, didn't exhibit the loss of fine detail endemic to so many digital processors, instead sounding quite analog-like. Similarly, instrumental textures and shadings lacked the hardness and glare that often plague digital playback. There was a gentleness
and ease to the presentation that I found particularly musical. Instruments and voices had a natural silky quality rather than a metallic or dry character. More on this later.

The DAC1 also distinguished itself in its remarkable ability to clearly differentiate individual threads within the musical fabric. There was a complete lack of homogeneity and fusing of instrumental lines. Instead, each instrument was clearly delineated, both spatially and texturally, in the presentation, allowing its musical contribution to emerge. Percussion instruments, for example, had lives of their own rather than blending in with the rest of the music. The DAC1 revealed massed voices and strings to be made up of individual elements: each instrument's contribution was audible within the ensemble, infusing the presentation with a lifelike quality. In this regard, the DAC1 was clearly superior to the VTL D/A and approached the Wadia 2000's remarkable performance. (See the "Follow-Up" in this issue on the latest versions of the 2000 and X-32 processors.)

The more I listen to and evaluate audio components, the more I find this quality vital to musical realism. It is just this presentation of instruments as individual entities rather than as a synthetic continuum that intrigues the listener and draws him or her into the musical performance.

A related presentation aspect is the ability to reveal layers of detail without becoming aggressive or forward. The DAC1 was a champ in this area, resolving tons of detail yet remaining laid-back and inviting. Detail was never hyped or etched, but subtle, finely woven, and immensely musical. There were layers and layers of musical information, seeming to have many degrees of gradation between the salient and the subtle. The deeper one listened, the more information one could discern. This is contrasted with lesser processors in which the listener encounters a much higher threshold beyond which there is just no more music. Again, this is an area where analog clearly excels—and one which the DAC1 more closely emulates.

The soundstage was quite well developed, with excellent portrayal of size and depth. Reverberation was clearly resolved down to the lowest levels, and seemed to envelop instrumental images without fusing with them. The DAC1 had the ability to open up and reveal the size and acoustical characteristics of the hall. In addition, the sense of three-dimensional layering was superb. There was a clear feeling of instruments existing independently, gently enveloped by the room decay. The quite remarkable spatial qualities of Clark Terry Live at the Village Gate (Chesky JD49) were fully realized through the DAC1. My listening room temporarily became the Village Gate, with the band existing in three-dimensional space before me.

Although there was a sense of air around instrumental outlines, the DAC1 was nevertheless bested by the Wadia 2000 in this regard. The 2000 seems to present a halo of palpable air and space around an instrument in the soundstage, adding to the impression of realism. The DAC1 was still quite good, however, and clearly superior to any competition in its price range.

Another strength of the DAC1 that contributed to the ability to hear such nuances was its remarkable soundstage transparency. There was not a hint of opacity, thickness, or congestion that could cloud the presentation. The DAC1 revealed a pristine clarity rare to hear from digital playback. In this regard, the DAC1 is perhaps the best digital converter I've heard.

Soundstage width was quite good—better than the VTL—with images and reverberation appearing beyond the loudspeaker boundaries. This contributed to the DAC1's sense of openness and air. In addition, the presentation retained its width well back into the soundstage, further conveying an accurate sense of size and space.

Before getting to my criticisms of the DAC1, I'd like to discuss perhaps the DAC1's best—and most musically important—attribute: its glare-free and natural presentation of instrumental textures. There was a lushness and liquidity in the midrange that made the presentation so much more involving. Through the DAC1, there was no glare, grain, or hardness—just the natural shadings and textures of the instrument itself. Listen to any acoustic instrument—especially piano, violin, and voice—and hear the remarkable portrayal of natural timbres. The DAC1's rendering of instrumental textures was the antithesis of sterile, cold, or "digital." There was a lifelike warmth and silkiness in the mids, but they were never colored or "euphonic." Indeed, I believe it is the DAC1's lack of coloration that allows natural instrumental timbres to emerge.
always had the feeling that the DAC1 got out of the music's way, allowing it to communicate with the listener. Different recordings took on different characteristics without being overlaid with a common sonic signature.

The DAC1 was clearly superior to all other processors in this regard, save the VTL. A significant part of my high regard for the VTL is just this lack of hard textures and brittleness. Having auditioned three processors with the UltraAnalog modules, I'm starting to see a trend: they all have unsurpassed midrange liquidity, a sense of ease, and resolution of fine detail.

Another characteristic the DAC1 shares with its UltraAnalog-based cousins is a leanness and lack of dynamic impact in the bass. I don't know if it's the UltraAnalog converter itself or the products in which I've heard it, but the DAC1's low-frequency rendering wasn't up to the standards set by the rest of its performance. Compared to many other processors in my system, I found the DAC1 lean and lacking LF weight. The entire bass region, with the exception of the lowermost octave, was somewhat threadbare. This reduced the sense of body to instruments whose principle energy is in this range (acoustic and electric bass, for example). The extreme bottom end seemed to have more energy than the mid- and upper bass, with bass drum and organ pedal tones reproduced with more weight. The recent addition of the Muse subwoofer to my system really sheds light on what's going on in the bass.

By comparison, the VTL had a fatter, warmer bass rendering that was welcome on some music, but the DAC1 had better articulation and pitch definition. The Wadia 2000, however, was clearly the best in this department. It has an exceptional low-frequency drive and dynamic impact that was in sharp contrast to the DAC1's lightish, less visceral presentation. The sense of power, rhythmic drive, and energy was clearly greater with the Wadia 2000. Listening to the guitar and bass recording on the Stereophile Test CD, the DAC1 was missing the warmth and body of the bass. The VTL was perhaps overly ripe, while the 2000 most accurately conveyed the instrument's extension and best resolved pitch.

This is a minor complaint, however, in light of the DAC1's exemplary sonics. How musically significant the DAC1's LF shortcomings will be is dependent on one's system and musical and sonic tastes. My only other complaint with the DAC1 was a very slightly edgy treble presentation. There was a measure of hash and grain to cymbals and vocal sibilance compared with the Wadia 2000. Although the delicate lower-frequency component of cymbals—what gives it the sound of brass being struck—wasn't obscured, the top octave had just a trace of tizziness. It may be possible that the 2000's rolled-off treble made hashy recordings more euphonic while the DAC1 more accurately presented what was on the CD. At any rate, I preferred the 2000's treble.

Both the DAC1's bass and upper-treble performances became substantially better, however, when driven by a glass-fiber optic signal from the Wadia WT-3200 transport. The bass extended deeper, took on more authority, and became more dynamic with the 3200's glass output. The difference was not subtle: using the front-panel switch to select between the two interfaces threw the differences into sharp relief. The DAC1's LF presentation still didn't approach the 2000's, but was significantly weightier with the glass interface.

In addition to improving the bass performance, the entire presentation was superior, I felt, with the glass-optical signal. Hall ambience increased, instrumental outlines became more vivid and distinct, and there was an increase in soundstage transparency. The glass interface also provided a smoother, more coherent treble. Cymbals took on a softer, gentler character, and sibilance was notably reduced. When JA heard the comparison between glass and coax with the Wadia X-32, he noted that sibilance seemed to be detached from the vocal image with the coaxial interface, and more a part of the voice with the glass interface.

Audio Research's decision to include that AT&T glass-fiber optic was a wise one. Although very few transports have glass fiber-optic output, the DAC1's performance significantly improved with the WT-3200's glass-fiber output. I think more and more manufacturers will jump on the glass-fiber interface as they discover its sonic merits.

Given this experience, I strongly recommend the DAC1 be driven by a transport with a glass-fiber output. Remember, this isn't the standard TOSLINK output designed for plastic optical interconnect—they are worse than coaxial—but the AT&T ST-type interface. The Wadia WT-3200 is an excellent companion to
the DAC1: the 3200 has superb sonics in its own right, is reasonably affordable, and its glass-fiber interface allows the DAC1 to sound its best.

A good test of digital processor quality is to switch back to LPs after a long digital listening session. The degree of relief one experiences is inversely proportional to the digital processor's musicality. No, the DAC1 isn't analog, but it was able to provide hours of fatigue-free and musically satisfying listening.

Isn't it ironic that the "miracle technology" of digital audio uses an arguably primitive and near-obsolete format as the standard for which to strive?

**Measurements**

It's always reassuring to find excellent bench performance in a product that has first proven itself in the listening room. Conversely, products that sound good and measure poorly are cause for consternation: measured performance aspects that allegedly affect certain musical qualities are questioned. I had no such concerns, however, after measuring the DAC1: it exhibited excellent performance on the bench.

The DAC1's output level was the lowest I have measured, producing 1.74V when decoding a 1kHz, 0dB full-scale signal. This resulted in not quite enough level when driving the VTLs through the passive EVC Stepped Attenuator. Owners of passive attenuators are therefore advised to audition the DAC1 in their systems before buying to determine whether the sound will be loud enough. There were only a few instances where I wanted more level, however.

The CD standard is 2V output level, but many processors put out much higher voltages. The VTL, for example, puts out 3.26V, while the Theta DSPRO Basic produces a whopping 7.2V. When making comparisons between processors, these differences must be accounted for. Level matching to less than 0.5dB is essential. Beware the trap of matching levels with a 1kHz tone that has not been pre-emphasized, then playing CDs recorded with pre-emphasis. Although their respective levels may be matched with the de-emphasis circuit out, they may not be matched with the de-emphasis circuit switched in.

Frequency response, shown in fig.1, was ruler-flat, with an insignificant 0.15dB rolloff at 20kHz. Note, however, how the left and right channels have exactly the same output level, the two traces nearly appearing as one. This is the best interchannel amplitude tracking I've measured.

Not surprising in light of the DAC1's digital domain-performed de-emphasis, the unit exhibited no de-emphasis error (fig.2). Interchannel crosstalk was low, measuring −115dB at 1kHz, dropping to −96dB at 16kHz (L–R). The R–L was slightly better; achieving a remarkable −120dB of isolation at 1kHz, dropping to 111dB at 16kHz. These curves are shown in fig.3.

Looking at the DAC1's spectral content when decoding a dithered −90.31dB, 1kHz sinewave (fig.4), we can see an extraordinarily low levels of noise, harmonics of the 1kHz signal, and power-supply–related junk at 60 or 120Hz. In addition, a hint of the DAC1's low-level linearity is provided by the fact that the traces just reach the −90dB horizontal division. What is also remarkable about this plot is the nearly exact tracking between channels, indicating the two channels within the UltraAnalog DAC are performing identically.

Plotting the departure from linearity (fig.5) reveals much more detail the excellent performance indicated in fig.4. Linearity error was virtually nonexistent, the trace remaining straight to −100dB. The apparent error below this level is due to noise swamping the extremely low signal level. This is extraordinary performance, and, along with the Stax DAC-X1t and VTL, the best performance I've measured. DA converters don't get any better than this. It should be noted that this performance is intrinsic to the DAC and not dependent on external adjustment. Consequently, this linearity will not drift over time or become misaligned.

The DAC1 produced a 1kHz, full-scale square-wave with a shape typical of the linear-phase NPC digital filter chip with a slight leading edge overshoot and ringing (fig.6). A −90.31dB, 1kHz sinewave as decoded by the DAC1 is shown in fig.7. Although the three discrete levels (0, +1, and −1) are less distinct than seen with the Stax, the waveform reveals the signal transitions to be of equal-amplitude steps, overlaid by a small amount of audio-band noise.

Fig.7 shows the spectrum produced when the DAC1 is decoding an equal-amplitude mix of 19kHz and 20kHz at full scale. The 1kHz intermodulation product, sometimes seen in other processors, is notably absent. Looking at a positive-going impulse revealed the DAC1 to be non-inverting when the front-panel

---

Stereophile, June 1991
switch is in the “normal” position, inverting when in the “invert” position. Output impedance was quite low, measuring 29 ohms at 17Hz and 1kHz, dropping slightly to 24 ohms at 20kHz, in line with the specified output impedance of 30 ohms. No measurable amount of DC offset was present at the output jacks.

Overall, the DAC1’s bench performance was exemplary. Incidentally, there was no measurable difference in the DAC1’s performance whether driven by a coaxial or optical signal.

**Conclusion**

If the Audio Research DAC1 were priced at $7000, it would be a strong contender in the ultra-high-end digital processor competition.
Both: Warranty: five years, limited and transferable. Approximate number of dealers: 38. Manufac-

WILSON AUDIO WATT SERIES 3 LOUDSPEAKER & PUPPY STEREO SUBWOOFER

John Atkinson


Stereophile, June 1991
"No pain; no gain." Thus goes the June 1991 offering from the Cliché-of-the-Month Club—(800) MOT-JUST—a saying that seems particularly appropriate for audiophiles with aspirations. High-performance loudspeakers fall into two categories. First are those exasperating thoroughbreds requiring endless Tender Loving Care and fussy attention to system detail to work at all. Take the Avalon Eclipses or the Infinity IRS Betas, for example: when everything is just fine, you put on record after record, trying to get through as much music as possible before the system goes off song again. On the other hand, speakers like the Vandersteens, Magnepans, B&W 801 Matrix, and KEF R107/2 appear to sound excellent even as you unpack them, before you've even put them in what you think might be the optimum positions in your listening room.

The question is: Are such unfussy designs really high-end? I mean, if they were truly high-performance speakers, shouldn't the owner have to suffer even just a little to reach musical nirvana? "A little pain; some sonic gain!" goes that other familiar saying.

You all know where you stand on this vitally important question. Me, I prefer to sit and construct the following graphical analogy. Draw a vertical axis and mark it "Absolute Performance." (The units are "gb." ) Now draw a horizontal axis and label it "Setup." (The units are "dU" for "deci-Ungers." ) Okay, sketch out an inverted V-shape. This curve, something like an engine's torque vs RPM curve, represents the manner in which a system's or component's performance changes according to how it is set up.

You should now have a graph which looks like my fig.1. If the apex of the inverted V rep-

1 Wilson Audio Specialties is moving to Utah this summer. We'll publish their new address and telephone number in a forthcoming issue.

2 For "goosebumps," I had wanted to use the American unit of musical performance, the "Gordon," on the grounds that it was Stereophile's J. Gordon Holt who first pointed out back in the '60s the fact that to be judged good, a component had to be capable of raising goosebumps on the listener's arm. But as Richard Lehmann pointed out that the "gb" is the accepted international standard unit, I'll stick with it for the purposes of this essay.

3 10dU = 1 Unger, which of course represents too large an amount of setup care for everyday purposes. I'm surprised that neither the home-furnishing industry nor Consumer Reports has adopted the dU (now in widespread use in Europe), both preferring instead to rely on purely subjective measurement techniques.

Wilson Audio WATT 3/Puppy loudspeaker system represents the maximum sonic performance of which the system is capable, you can see that moving in either direction along the setup axis results in a less satisfying sound. Arbitrarily replace one component with a more expensive one: unless you've started from a position deficient in deci-Ungers, the result is a global reduction in gb. Be particularly sloppy in how you set your system up: you can immediately see from fig.1 that the sound quality will suffer accordingly.

Now look at fig.2, which shows the characteristic curves for two high-end loudspeakers, A and B. (Rather than measure the gb/dU curves, I used the manufacturers' data. I don't see that it makes a difference for illustration purposes.) Though A is capable of an extraordinarily high
gb performance, its extremely sharp curve shows that even a change of a mU in setup will knock it significantly off-song. In fact, it's probably unlikely that A's owner will ever achieve its maximum gb. However, while B's performance curve doesn't quite reach the pinnacle represented by A, note that even quite large changes in setup have only a small effect in gb. Note also that for quite a large range of dU, loudspeaker B actually gives a higher gb than loudspeaker A, despite its theoretically lower absolute performance limit.

Mathematically inclined readers will have already appreciated the fact that the fundamental difference in character between loudspeakers A and B can be described as a single quotient, proportional to the "sharpness" of the gb/dU curve. If you take the inverse of the difference in dU between the -6gb points on this curve, you get a dimensionless quantity which I shall call "Q," for "Quality Factor." While loudspeaker A has a high Q, loudspeaker B has a low Q, meaning that B is much less fussy when it come to setup. I hope that one day it will become common practice for high-end manufacturers to state their components' subjective performance Q-factors in the specifications. Life would then become a lot easier for audiophiles. In the meantime, you have to rely on the dedicated efforts of reviewers like myself to determine such necessary data. (I welcome your input on the Q ratings for the components listed in Stereophile's semiannual "Recommended Components.")

Which brings me to Wilson Audio Specialties' WATT/Puppy combination.

What?

I doubt there is an audiophile in the world unfamiliar with the Wilson Audio Tiny Tot (WATT). Introduced at the 1986 Winter CES, this diminutive two-way immediately attracted attention for the superb quality of its construction, the tangibility and accuracy of its soundstaging, and the lightweight nature of its bass when positioned on stands away from room boundaries. This was to be expected, however, given that David Wilson, of $88,000 Wilson Audio Modular Monitor (WAMM) fame, had wanted to develop a small nearfield monitor for location recording, the bass output of which would normally be augmented by the close proximity of a boundary in the shape of the mixing console. Nevertheless, the WATT—which couples a much-modified Focal T-120 inverted-dome tweeter with a doped-pulp-cone woofer from the Norwegian SEAS company in a cast mineral-loaded, methacrylate-resin enclosure with optional wooden side panels—rapidly developed an audiophile profile. In his 1988 Stereophile review,4 Martin Colloms mentioned the WATT's superb resolution of detail, transparency, focus, and depth as being revelatory, coupled with a build quality which he instanced as being "the most perfect exposition of cabinet construction." However, he had to weigh this performance against the speaker's lightweight bass, erratic response in the vertical plane, and awkward impedance, which dropped to a very low value in the lower treble, necessary to control a dustcap resonance in the woofer.

Wilson's development of the "Gibraltar" stand, which in effect extended the front baffle area downward to the floor, helped the speaker extend its bass response, while many users coupled the WATT with subwoofers, the Entec SW-5 in particular, to give a full-range system that preserved the speaker's remarkable qualities. (Wilson recommended that the WATT still be used on its Gibraltar stand rather than sitting on the Entec.) In 1989, at serial number 515, I believe, the Series 2 WATT followed, with a smoother midrange balance, a more extended,

less overdamped bass, a slightly higher overall sensitivity, and a less cruel impedance. Then, in the summer of 1990, David Wilson launched the Puppy, not so much an independent sub-woofer as a dedicated woofer to turn the WATT into a full-range three-way system. (This time, the WATT does sit on the woofer.)

When I interviewed David Wilson in 1990, I asked him to give me a thumbnail characterization of the Puppy’s design goal: “The Puppy is designed to take what was originally intended to be a highly compact, location reference speaker and convert it into a three-way system which can be put into a domestic or professional environment . . . It is intended to extend the low-frequency response of the WATT, expand its dynamic capabilities, flesh out in a highly coherent way the lower mid-range, the ‘warmth’ region, and to actually improve the linearity of the overall system.”

And how low would the Puppy go? “We knew [the Puppy] would be that size because the WATT likes to be at a certain height for most listening environments, and you don’t want the woofer to be grossly wider than the WATT, you don’t want it to be grossly deeper. . . . To get 20Hz out of a system that size, you’d probably end up using a single, small, very-high-compliance woofer with a fairly massive cone, a fairly small magnet, and what you would get would be a measured 20Hz output at low levels. It would be sluggish, inefficient, and wouldn’t have good power-handling capacity; its dynamic characteristics would not at all match those of the WATT.

“I consider that too high a price to pay for 20Hz. So . . . how low do you have to go for most listening? For a sensitive listener to achieve musical satisfaction out of a wide range of music, the consensus was that if you could achieve 40Hz with absolute authority, then that probably would be enough. So in my mind, I established 40Hz as an acceptable low-frequency extension . . . . The Puppy has its -3dB point, measured at the port, of around 30Hz. 35Hz is no problem with it. 32Hz is quite reachable in most rooms. We don’t get the 20, we don’t get 24, but we get a real nice 30—more than we had originally bargained for—and the overall performance envelope is broader than we had expected.”

The final configuration David chose for the Puppy was to use two 7.5” Dynaudio woofers—units with large magnets and large-diameter voice-coils—in a ported enclosure, the small, 2.75”-deep, oval vent being on the unit’s rear. Like the WATT, the Puppy’s front baffle is covered with a rubber blanket, to minimize reflections of the drive-unit outputs from the cabinet edges, with a cellular-foam grille held on by Velcro. The cabinet is made from fiberboard, with a complex internal construction using multiple crossbraces to maximize rigidity in the Puppy’s intended passband. The 24” height of the Puppy is intended to place the WATT at the optimum listening height, and three small adhesive-backed pads on the Puppy’s top surface provide appropriate mid-range decoupling. (Care should be taken in moving the WATT when placed atop the Puppy, as these pads tend to slide around.)

Four sets of 5-way binding posts can be found on the Puppy’s behind: one pair for normal connection to the amplifier; one pair for the necessary high-pass filtered output to drive the WATT; a third for direct connection to the woofers if the owner wants to bi-amp the system with an external electronic crossover (Wilson Audio prefers the normal passive mode); and a final pair to hold a jumper which must be in place for normal use. A short length of MIT cable—the Puppy “Tail”—is supplied to connect the WATT to the Puppy and passes through an internal channel to emerge on the Puppy’s top surface.

The Unger quotient

This review actually began last Fall, at that time of the earlier WATT 2 and Puppy system. Wilson Audio had supplied both a pair of Puppies, finished in black laminate, and a pair of WATT 2s (serial numbers 963/964), finished in gloss black paint. For a number of reasons, I was late starting the review and didn’t get around to setting the speakers up until December. My first impressions were favorable. But then at the 1991 WCES in January, Wilson Audio announced the Series 3 WATT, which was said to feature an improved midrange/woofer and a revised crossover. I therefore put the review on hold while I waited for the WATT 3.

Finally, not only did a review pair of WATT 3s arrive (serial numbers 1243/1244), beautifully finished in a gloss gray-painted finish, but

5 Vol. 13 No. 6, June 1990, p. 78.
6 The speakers are supplied with their finish protected by clear acetate film.
so did Wilson Audio's David Wilson and Tierry Budge, to set them up in my listening room. I had already approximately determined the optimum positions for the Puppies in my room, playing with the distance to the rear- and sidewalls to balance the ultimate bass extension against mid- and upper-bass definition. But to watch David and Tierry find the ultimate positions for the two WATT/Puppy combinations was to witness an exercise in attention to detail. They stayed with my approximate 33" placement with respect to the rear wall, but moved each speaker laterally until they were happier with the overall bass/midrange balance of each. This gave slightly asymmetrical sidewall-speaker distances of 58" (left) and 51" (right), with each speaker toed-in a little toward the listening seat so that the listener could just see each WATT's inner sidewall. A tape measure was then produced to move the seat until left and right ear-to-speaker distances were identical.

Now came that part of setup that even the Odd Couple's Felix Unger could not fail to be impressed by. Having determined where the speakers should be to within a matter of inches, David and Tierry affixed the spikes to the Puppies, then laid out masking tape on the rug around each Puppy's perimeter, marking the tape at the front with $\frac{3}{4}$" spaced lines. For left and right speakers in turn, David would then listen to a track in mono from one of his piano recordings (Ragtime Razzmatazz) a number of times, with that speaker moved by $\frac{3}{4}$" between each audition. This recording has a rich left-hand register, giving a full spectrum in the frequency region where the distance between the speaker and the sidewall results in a characteristic comb filtering. By listening to the manner in which this comb filtering interacted with the sound of the piano's lower midrange, David was able to zero-in on the exact position giving the most musical midrange balance, a subjective process he calls "voweling." The final setup stage for each speaker was to compare the two best positions, the marks on the tape being essential in order to repeat identical placements in this process.

The entire setup took about an hour of intense concentration on the part of David and Tierry, and at the end of it I was keen to hear recordings I knew well. But I have to say that, even before it began, the WATTs and Puppies were producing a superbly musical sound. The iterative "voweling" process merely determines the apex of the speaker's performance curve. But the broadness of that curve means that this is a speaker system that will always sound good, even when not perfectly set up. But that extra care is well worthwhile. Isn't the excellent the enemy of the good?

A word is in order on the WATT handbook.
Comprehensively illustrated with the subjective changes to be expected from different room placements and treatments, the book offers excellent advice for any speaker, not just the WATT. Unusually, contour maps for both horizontal and vertical planes (in gauss) are given for the WATT's stray magnetic field, something I have never seen before.

**dB or gb?**

The main system with which the WATTs and Puppies were auditioned consisted of a Linn Sondek/Lingo/Ekos/Troika setup sitting on an ArchiDee table to play LPs, a Revox PR99 to play 15ips master tapes, and the Stax DAC-XII processor driven by Meridian 602 and Wadia WT-3200 transports to play CDs. Preamplification first consisted of the Expressive Technologies transformer hooked into a Mod Squad Phono Drive EPS and a Threshold FET tone line stage, this combination then replaced by the French YBA 2 preamplifier. The power amplifier used was almost exclusively the Mark Levinson No.23.5, connected to the preamplifiers via 15’ lengths of AudioQuest Lapis unbalanced interconnect. Speaker cable was first doubled 5’ lengths of AudioQuest Clear, then 2m lengths of AudioQuest’s new Dragon.

Before I get down to describing the WATT’s and Puppy’s musical merits, pink noise reproduced by just one loudspeaker sounded extremely smooth throughout the midrange and treble at the 2.5m listening position, with just a slight degree of HF emphasis and a rather loose upper-bass region. Vertically, the WATT was perhaps best-balanced with the listener’s ears at or just above the tweeter axis; *ie*, some 37” from the floor. Above that, a peak in the mid-treble can be heard; sit so you are at WATT woofer level and the midrange becomes very peaky.

The WATT sitting on the Puppy passed the knuckle-rap test with flying colors—it was like nothing so much as tapping a rock. Nevertheless, a check with a stethoscope revealed that the region of the WATT’s side-panels level with the rear tubular alloy handle were not as non-resonant as the rest of the enclosure, giving some output in the 400–500Hz region. Subjectively, however, this is very likely irrelevant. Though the Puppy cabinet is more lively than that of the WATT, what resonances it does have are well above the region where it is handling any signal, making it unlikely that they will be excited to any significant extent.

But no matter how useful pink noise and test tones are in checking out what a speaker may be doing wrong, it is its performance on music that is all-important.

The first record I reached for was a test pressing of *Stereophile’s Intermezzo* LP. Canadian pianist Robert Silverman turned in a world-class, risk-taking, goosebump-raising performance of this Brahms sonata, particularly of the second *Andante* movement, where he makes time stand still. The Steinway in the Santa Barbara church had had a majestic character to its sound, coupled with a superbly even note-to-note balance. Both aspects came over superbly well on the Wilson system. The piano sounded correct, both tonally and dynamically. From my experience of similar units in other speakers, I had worried that the WATT’s use of a Focal tweeter would have rendered the upper register of the piano too bright. But this wasn’t the case; the sound was smooth without being mellow, detailed without being thrust forward at the listener. Evidently the extensive modifications that Wilson performs on this unit have a significant subjective effect. There was a slight emphasis of LP spits and pops, and tape hiss was a little more audible than usual, but this excess of top-octave energy was not musically important.

I said that the piano sounded tonally correct. Well, that wasn’t entirely accurate, as a thickening in its tenor register was present. Now, my room does have a problem itself in this region—*I* couldn’t get the Thiel CS5’s mid- to upper-balance correct either—but Sam Tellig also felt in our April issue that the WATT/Puppy had an audible “hump” in this area. While this hump wasn’t musically unpleasant—and there certainly wasn’t any tendency for notes to overhang—the slight excess of energy in this region does represent a departure from strict neutrality. (I understand that some audiophiles have reversed the Puppy’s polarity in an attempt to control the hump. David Wilson points out, however, that this severely disturbs the coherency of the crossover between Puppy and WATT.)

Lower down in frequency, the midbass was clean, with extremely good articulation. The track “Love Letter” on Bonnie Raitt’s *Nick of Time* (Capitol CDP 7 91268 2) starts with exposed kick-drums beats and back-beat snare-drum. While the kick drum had good weight,
the manner in which its sound started and stopped was excellent. And when the nasal-sounding bass guitar joined in, the similarly pitched sounds of the two instruments did not interfere. This "quick" ability extended to timpani and classical bass drum. On a recording I made of Elgar's *Dream of Gerontius* in England's Ely Cathedral back in 1984, there is a cataclysmic single bass-drum stroke accompanied by a double timpani beat—the score (figure 120) is marked *ff sforzando*!—just before the penitent Gerontius utters "Take me away" after being ushered into the presence of God by the Angel of the Agony. When I made the recording, the impact of this climax was such that it felt like a pressure front passing your body, sucking the air from your lungs. I rarely hear this from loudspeakers, the recorded impulse seemingly exciting everything they do wrong in the bass. The WATTS/Puppies hung on to that wavefront, the bass drum sounding like a sharp thunderclap but with the timpani double beat still distinguishable. I have to say that I have never heard this degree of bass-transient coherence from a reflex design before.

Down in the low bass, the Puppies did run out of steam. Despite their authority in presenting the midbass power of orchestral music, they really can't deliver the full measure of the organ's lowest registers. But they do try. And coupled with the system's excellent dynamics, it was only rarely that I felt the need for that extra half-octave. But then, during the Dorian *Pictures at an Exhibition* transcription (DOR-90117), it would have been nice to have had it.

Perhaps it was in the region of articulation, of musical dynamics, that this system impressed the most. Quiet passages were not veiled, but as this absence of smearing was not due to detail being artificially thrown forward, when the music got loud it remained unfatiguing. With the Silverman *Intermezzo*, for example, the big chords at the start of the sonata reached 100 dB spl flat at the listening position, but without making me feel like turning down the level.

The soundstage presented by the WATTS and Puppies was big, relatively deep (though not as deep as that thrown by the KEF 107s I reviewed in May), and sharply defined. Just before the *Gerontius* passage mentioned earlier, for example, an unaccompanied double choir antiphonally requests God to be merciful and to spare Gerontius's soul. The WATT/Puppy soundstage is of such delicacy that you can hear each of the eight voices as they enter, superbly delineated in the recorded acoustic. The imaging tests on the Chesky Test CD (JD37) confirmed the imaging excellence of the Wilson system, though the images that are supposed to be to the left and right of the left and right speakers, respectively, instead moved back behind the speakers at the extreme positions. The LEDR "Up" and "Over" tests also reproduced with impressive image height, though they were a little more unstable than with the best speakers I've heard with this test.

Relatively effortless dynamics coupled with superb transparency made my time with the WATTS and Puppies rewarding. Their ability to decipher the subtleties of what was ahead of them in the reproduction chain, be it equipment or recordings—they made it so easy to hear that the admittedly excellent-sounding Klavier recut of the classic Fremaux Massenet *Le Cid* LP (KS522, available from Acoustic Sounds) was still not as good as the 1977 HMV Greensleeve reissue of the 1971 Studio Two original (ESD 7040), but without having it thrust at you, without the system shouting "Are you deaf? It's different!"—made critical listening a joy rather than a strain.

It was, in fact, in the catholic nature of their overall performance that the WATTS and Puppies proved their worth. They were as good at playing one of the superbly natural Wilson chamber music recordings—check out the Beethoven and Enescu violin sonata album, W-8315—as they were handling a full symphony orchestra playing flat out, the Chesky reissue of the 1962 Horenstein Brahms Symphony I (CD19), for example (possibly the finest Brahms I available, regarding both performance and sound). In many listening sessions, I put on a record to listen for a specific performance aspect, but found myself listening through to the end of the work. And then perhaps putting on a musically related disc rather than one to do with the review. One night, for example—I forget the exact audiophile reason why—I reached for the EMI CD of Nigel Kennedy play-

---

[7] Purists may shudder, but to capture the full dynamic range of this immense work, I used dBx noise reduction with my Revox A77. There don't seem to have been any ill effects due to this lack of high-end purity; in fact, comparison with commercial recordings, such as the in-many-ways-excellent Richard Hickox/LSO performance on Chandos (CHAN 86441-42), reveals just how much gain-riding professional engineers use to fit such a work within the CD's dynamic window.
Then for the 1978 Ida Haendel with Boult (EMI ASD 3598). Then for the 1932 with the composer conducting and the soloist a youthful Yehudi Menuhin—"[A] wonderful boy," said Elgar; "So trusting and casual a composer" said Menuhin (HMV Treasury HLM 7107). From stereo CD to stereo LP to mono 78 transcribed on to LP, all with the technical aspects of their sound open for inspection by the listener but not so as to interfere with the music.

Tony Randall or Jack Lemmon?

It would seem appropriate to compare the WATT 3 with the older series 2 design. This didn't turn out to be as straightforward as it sounds, due to an attack of "reviewer's luck." Right from the start, one of the WATT 2s had sounded a little more subdued in the highs than the other. Then, after I set the 2s up again following the arrival of the 3s, first that same speaker started to emit buzzing noises, then its tweeter died completely. Apparently, one batch of Focal tweeters suffered from the faceplate separating over time, with this sonic result. Wilson sent me a replacement tweeter kit, complete with detailed instructions and special solder, and an hour's careful work saw the speaker back in operation.

As I was only interested in the differences between the speakers for these comparisons, it seemed appropriate to eliminate the Puppies' effects. Both pairs were therefore driven directly by the Mark Levinson No.23.5, still sitting on the Puppies but with the latter's inputs shorted with lengths of cable.

Tonal, the differences were relatively small, which is not to say that they're unimportant. Though the WATT 2 had a warmer midrange and a slightly less emphasized top octave than the 3, it was noticeably more uneven in both the upper midrange and low treble. On Stereophile's Poem CD, the declamatory flute arpeggios in the final movement of the Prokofiev sonata were both less well-balanced from low to high notes and also more shrill, for example. Both speakers had mid- and low bass missing in action, which lent piano reproduction a rather "toy"-like aspect, though the low midrange was tonally accurate on both. Noticeable on voice, however, was more of a cupped-hands coloration via the Series 2 speakers, which also slightly emphasized the reedy nature of recorded organ.

Both speakers had similarly good articulation, but the 2 had noticeably less "pace" than the 3, sounding less dynamic. By this I mean that the performance seemed a little slower. You may be wondering how this can be. Let me illustrate: a favorite choral recording, in that it sounds so natural, is of the Proprius Bach Wachet Auf cantata (released on LP in 1979 on the English Meridian label, E77016). The continuo cellist, playing a dotted quarter-note figure, seems to hang back more with the WATT 2s than the 3s, almost as if he or she is playing with more of a triplet feel; the more recent speakers reproduce more of the essential sense of forward movement that the iambic, dotted nature of the accompaniment implies. This relative lack of rhythmic drive could also be heard on Peter Mitchell's organ recording on the Stereophile Test CD. While both speakers lit up a dome of ambient space around the organ pipes, the 2s' performance was more deliberate, with less musical flow.

These comparisons certainly confirmed that the Series 3 is a more musical, less colored performer than the WATT 2. But they also left me with the feeling that without the Puppy, the WATT is a superbly transparent, best destined for special purposes only rather than for general musical listening, such as location monitoring. Which is the reason David Wilson designed it in the first place, of course!

Measurements

The majority of the measurements were performed with a DRA Labs MLSSA acoustic analysis system, with a B&K 4006 ½" microphone. Looking first at the Series 3 WATT's impedance, this can be seen in fig.3. Whereas the first WATT plunged down below half an ohm in the low treble and the series 2 speaker down to a still low 1.25 ohms at 2190Hz, the latest WATT can be seen to reach a more sensible minimum of 1.75 ohms at the same frequency. While this will not present pedigree solid-state amplifiers with any drive problems, tube designs are best avoided given the overall low impedance above 150Hz. On the other hand, the high sensitivity —a ½-octave warble tone centered on 1kHz and

---

8 Dismantling a speaker in order to repair it leaves no corners where inadequate build quality can hide. However, as with the Celestion SL700, which I also once had to repair, such an experience left me even more impressed with the WATT's construction. While such build quality doesn't outflank sound quality when it comes to defining a product as "high-end." It certainly should not be forgotten in that it certainly contributes to the purchaser's pride of ownership.
with a level of 2.83V RMS—measured 8.5dB higher than a Rogers LS3/5A, implying a sensitivity of 91dB/W/m. Even a 50W amplifier, provided it can handle low impedances without stumbling, will raise adequate levels from a pair of WATTs in all but very large rooms.

The slight impedance peak centered on 17.5kHz, just above a typical adult’s range of hearing, is due to the primary tweeter resonance. Examining the impedance with greater resolution below 1kHz (fig.4) reveals the tuning of the WATT’s reflex port, visible as the minimum in the midbass, to lie at 36Hz, though this is somewhat hard to see due to the overdamped alignment. Adding the Puppy changes the impedance below 1kHz in the manner shown in fig.5. The WATT 3’s 21.6 ohm woofer peak at 74Hz disappears, to be replaced by the Puppy’s two bass peaks, the minimum between them at 27Hz indicating the port tuning frequency. The peak at 200Hz is presumably due to the crossover. The dips to 3.6 and 4.3 ohms again would imply that tube amplifiers would not be best suited to drive the WATT/Puppy system.

Turning to the time domain, fig.6 shows the

![Fig.6 Wilson WATT 3, impulse response on tweeter axis at 45° (5ms time window, 30kHz bandwidth)](image)

Examination of the woofer impulse responses (fig.7) reveals a series of dips at 1kHz on both axes that would imply nonlinearity of the woofer—surely a result of the high sensitivity of the LS3/5A. The dips would also imply a crossover frequency of 1kHz, which is comfortably above the upper HF limit of the woofer.

![Fig.7 Wilson WATT 2, impulse response on tweeter axis at 45° (5ms time window, 30kHz bandwidth)](image)

The crossover point of 1kHz lies on the LS3/5A’s axis; the woofer’s axis is centered 1kHz lower. The woofer’s HF axis below 3kHz is the same on both axes, though above 3kHz the woofer’s bandwidth is wider by about 1kHz, and the woofer’s low-frequency response extends below 1kHz. The woofer is evidently not well suited to the puppy.

![Fig.8 Wilson WATT 3/Puppy, vertical response family at 45°, normalized to response 75° above HF axis, from front to back: anechoic response on woofer axis; anechoic response 75° below tweeter axis; anechoic response on tweeter axis; reference response; anechoic response 15° above tweeter axis.](image)

While the woofer’s HF response and LF response below 1kHz are similar on both axes, the woofer’s response above 1kHz is quite different, with the woofer’s HF response centered 1kHz lower and with little HF response above 3kHz. The woofer’s low-frequency response extends below 1kHz. The woofer is evidently not well suited to the puppy.

![Fig.9 Wilson WATT 3, anechoic response 7.5° above tweeter axis at 45°, with nearfield woofer and port responses plotted below 200Hz and 500Hz respectively.](image)

Stereophile, June 1991
speaker's impulse response on the tweeter axis and parallel to the floor at a 45° distance, taken with a 30kHz bandwidth to show the tweeter's near-ultrasonic ringing. For comparison, fig.7 shows the identical measurement made on the WATT 2. Though hard to make out at the scale at which these graphs have to be reproduced in the magazine, the Series 3 speaker is somewhat better behaved in the manner in which the pulse decays, though the ultrasonic ringing is a little more pronounced. Note, however, that a couple of small reflections of the impulse can be seen in both impulse responses about 1ms after the initial pulse. I'm not sure what these are from; perhaps from the pulse reflected from the cabinet rear and reemerging through the cone.

Laterally, the WATT offers even dispersion in the treble, maintaining its response up to 15° off-axis. Fig.8 shows the way in which the WATT's response changes according to listener height, with all the curves normalized to the response taken just above the tweeter—flat trace—which is where the best measured integration between the drive-units appears to be at this distance, as well as where I found the speaker to sound smoothest in the low-mid treble. It can be seen that the axis on which I took the impulse response in fig.6, level with the tweeter, is not ideal in that a serious energy notch appears at the crossover frequency. This notch, a space-dependent interference effect due to the drive-unit outputs being 180° out of phase at this microphone position, is also apparent on the axis midway between tweeter and woofer, which, according to the Wilson handbook, is the target axis.

Remember, however, that this measuring position is of necessity unrealistically close to the speaker, in order to keep reflections of the impulse sufficiently far away in time to get maximum midrange resolution. At more typical listening distances—such as the 2.5m in my room—any such interference effects should be inaudible, as indeed turned out to be the case. The rearmost trace of fig.8 shows that a listener sitting with his or her ears appreciably more than 37" from the ground, or one standing at the rear of the listening room, will hear considerably more low-treble energy than one sitting on the optimum axis.

The reference response for fig.8 is shown in fig.9, to which I have appended the nearfield responses of the woofer and port, the former measured with the microphone almost touching the woofer's dustcap. The plotted levels of these with respect to the upper-frequency curve are only approximate, but I used the in-room measurement of the speaker's extension as a guide (see later). These measurements confirm that, as expected from its overdamped reflex alignment and as heard during the auditioning, the WATT's bass is lightweight when used without the Puppy, the rear-facing port only adding marginal reinforcement below 70Hz or so.

It can also be seen from fig.9 that the WATT features, overall, a rising trend through the midrange, with a slightly peaky response. This correlates nicely with the somewhat forward tonal balance, and may well contribute to the speaker's effortless recovery of detail and superb articulation. However, the modified Focal tweeter is quite well-balanced throughout the low- and mid-treble—and very well-behaved when compared with similar Focal tweeters used in other manufacturers' loudspeakers—while its resonance peak in the top octave will be inaudible to nearly all adults. The clean treble behavior of the WATT 3 is confirmed by fig.10, which shows the speaker's cumulative spectral-decay ("waterfall") plot. Note, however, some wrinkles in the manner in which the content of the pulse decays in the 1kHz region, this presumably due to the reflections noted on the impulse response.

Measuring the effect of the Puppy when added to the system was somewhat problematical. To the right of fig.11 is shown the WATT's response on the HF axis parallel to the floor and averaged across a 30° lateral angle—note the presence-region suckout implied by fig.8—to which has been spliced the WATT woofer's nearfield response when driven from the Puppy high-pass crossover. To the left of fig.11 can be seen the nearfield responses of one of the Puppy's woofer's and its rear-mounted port, driven via the subwoofer's internal low-pass filter. (Again, the plotted relative levels of these traces can only be approximate.)

The Puppy woofer can be seen actually to cover just a relatively small region in the mid-upper-bass, from 62Hz to 152Hz, to judge by the -6dB points. The minimum in the woofer output at 28Hz confirms the port tuning indicated by the impedance plot (fig.5), as does the broad peak in the Puppy port's output centered on the same frequency. But the Puppy is def-
Fig. 10 Wilson WATT 3, cumulative spectral-decay plot

Fig. 11 Wilson WATT 3/Puppy, anechoic response on tweeter axis averaged across 30° lateral window, with WATT 3 woofer nearfield response when driven by Puppy crossover plotted below 200Hz, and Puppy woofer and port nearfield responses plotted below 400Hz.

Fig. 12 Wilson WATT Puppy, high-pass crossover response when loaded with an 8 ohm resistor (top trace at 1kHz) or loaded by the WATT 3 (bottom trace at 1kHz)

Fig. 13 Wilson WATT 3/Puppy, spatially averaged, ½-octave in-room response with Puppy, top curve below 600Hz; without Puppy, bottom curve below 600Hz

—due to the interaction between the filter’s source impedance and that of the WATT. Remember from fig.4 that the WATT’s impedance features a 22 ohm peak at 74Hz; this results in a boost in the WATT’s drive signal in this region which to some extent counteracts the crossover’s bass rolloff. However, this impedance interaction also suppresses the input
to the WATT in the upper bass, as well as slightly accentuating the speaker's already forward treble.

However, the moment of truth for all these individual measurements is how the speaker actually performs in the listening room. After David Wilson and Tierry Budge had set the speakers up to their satisfaction in my room, I performed a series of ten 1/2-octave spectrum analyses for left and right speakers individually in a 72" by 20" window centered on the listening seat, using a pink-noise source and the magazine's Audio Control Industrial SA-3050A analyzer. Averaging these in-room responses minimizes the effect of room standing waves, and I have found this average curve, slightly weighted toward the spectra at the listening seat, to correlate nicely with the subjectively perceived balance of loudspeakers in my room.

The resultant spatially averaged curve for the WATT 3 and Puppy is shown in fig.13, as well as the curve for the WATT 3 on its own (still sitting on the Puppy but driven directly). As expected from the anechoic responses, there is an excess of energy in-room in the WATT's top octave due to the tweeter resonance. As noted earlier, this only manifests itself as an added spitty edge to LP surface noise. Moving down in frequency, the entire treble and upper midrange are commendably smooth, with perhaps a slight excess of midrange energy correlating with the forward balance noted in the listening sessions. Perhaps due to the complex interaction between the WATT and the Puppy crossover, the upper-bass region is exaggerated in level, with a rolloff below the Puppy woofer region relieved by the Puppy port output. The usable bass response in-room extends down to the 30Hz region. Note that without the Puppy, the WATT's response starts to roll off below the slight midrange prominence in the 630Hz region, giving a lightweight tonal balance with the entire bass region suppressed. However, this curve does not reveal the beautifully articulate nature of what low frequencies the WATT manages to produce on its own!

To me, the curve in fig.13 suggests a fine balance achieved by the speaker's designer: despite the occasional measured anomaly or sonic idiosyncrasy, the overall performance is both tonally correct and musically satisfying.

A thought strikes me, however. The fact that the Puppy rolls off below 30Hz or so can be compensated for by buying (at great expense) Wilson Audio's WHOW powered subwoofer. But for those of us without such deep pockets, there's another, so far unrealized solution. Given the overdamped nature of the Puppy's low-frequency alignment, its already good extension, and the fact that the Puppy's Dynaudio drivers have excellent excursion capability and high power handling, it would seem a logical step for the benefit of those in smaller rooms who don't need high playback levels, for someone to offer a gentle bass-equalization filter, along the lines of those offered for the B&W 801 and 800. This could extend the response to 20Hz, without too much boost and without adding high levels of distortion—as long as not too much wind noise is induced in the relatively small port—as well as providing a mild correction in the upper bass to eliminate the in-room "hump." What do you say, David? Get John Curl to put a suitable circuit together.

To sum up...

With a total system price ranging from $10,940 to $13,140 depending on finish, the Wilson WATT/Puppy combination is one of the more expensive loudspeakers to be found. To be recommended at all, it must be capable of offering a superior musical sound on a consistent basis.

And this it does.

In spades. With a relative immunity to the swings and arrows of outrageous system setup and matching. While the WATT 3 on its own is too specialized for general recommendation, the WATT/Puppy combination is a genuine Class A contender, the subjective whole being greater than the sum of its objective parts.

---

**AUDIOQUEST AQ 7000 MOVING-COIL PHONO CARTRIDGE**

Robert Harley

Moving-coil phono cartridge. Weight: 9.5gm. Recommended tracking force: 1.9gm. Output level:

---

Stereophile, June 1991
In this day and age of $12,000 digital processors and $5000 CD transports, it's surprising how many people think $1300 for a phono cartridge is expensive. Granted, $1300 is no small chunk of change, but in relation to what some people spend for digital front ends and considering the phono cartridge's role in the reproduction chain, it can be money well spent—on the right cartridge. Many who pop for a $10,000-$15,000 digital processor/transport would never consider spending even half that on an analog front end. It's also ironic that, just as new vinyl is disappearing, many advances in the LP playback art are being realized—the Graham arm, the Expressive Technologies SU-1 step-up transformer, and now the AudioQuest 7000 phono cartridge.

The AQ 7000 represents a new breed of recently designed phono cartridges, reflecting the refinements learned after many analog decades. The 7000 is made in Japan by a small group of dedicated cartridge makers called Scan-Tech. Their first cartridge was the Tsurugi, a version of which was sold in the US as the Spectral MCR's. The 7000 differs from the Tsurugi/MCR in several respects. The 7000's solid boron (instead of ceramic-alloy) cantilever required designing a new suspension system, and the 7000's output level of 0.3mV is nearly double the Tsurugi/MCR's 0.18mV output voltage. With today's higher-gain phono preamps, 0.3mV may be just enough level to get adequate volume and signal/noise ratio without a step-up transformer or prepreamp. Although the 7000 could have been designed with a higher output level, there's a direct tradeoff in performance. Achieving a greater output voltage would have required a multi-layered coil, a compromise AudioQuest and Scan-Tech wouldn't make. The 7000 also uses 6N copper (six nines, or 99.99997% pure) windings and a body designed to be left in place rather than being sold with the implicit assumption that serious audiophiles would remove the body. Made from an aluminum alloy, the body was designed mathematically to reduce resonances. Very few specifications are provided, keeping with AudioQuest's belief that numbers and specs distract from what's really important: how the cartridge sounds. Suffice to say, however, that the AQ 7000 is of medium compliance for a high-end cartridge, and the tip shape is line-contact.

### Listening

I lived with the AQ 7000 on a Well-Tempered Turntable and Arm for about six weeks, the 7000 replacing a Signet AT-OC9. After spending time with the 7000 and my record collection, I compared it with the Benz Micro MC-3, a similarly priced cartridge that has received favorable reviews and is DO's and TJN's reference. I had an MC-3 for a few days during my recent Naim review, and thought it was a terrific cartridge: I didn't want to return it!

The rest of the system consisted of an Audio Research SP-II Mk.II preamp driving VTL 225W Deluxe monoblocks through AudioQuest Lapis interconnects. Loudspeakers were the reference Hales System Two Signatures, augmented with a Muse Electronics Model 18 subwoofer. Speaker cable was a pair of 3' runs of AudioQuest Dragon on top and Clear Hyperlitz on the bottom end. I also listened very briefly to the 7000 with the Expressive Technologies SU-1 step-up transformer.

I set the tracking force at 1.9gm, although I experimented with slight tracking-force variations. VTA was set so the back of the cartridge was slightly lower than the front, though not significantly. The 7000 was run straight into the SP-II, with 47k ohms loading—the conditions...
for which it was designed. There was just adequate gain in the SP-11 to provide an acceptable S/N ratio, although I would have liked just a little higher output level. I understand, however, that this would have compromised performance—presumably enough to make it a bad idea.

At AudioQuest's suggestion, I broke in the 7000 for about 20 hours before doing any serious listening. I did this by going through my record collection and playing any record I hadn't heard for a while, listening peripherally while writing. I rediscovered (and discovered) some real gems I'd either forgotten about or didn't find accessible at first listening.

After lugging the Threshold S/550e and Krell KSA-250 power amplifiers to my listening room for review a few months ago, I joked that from then on, all I'd review would be phono cartridges. After setting up the Benz MC-3 and AQ 7000 several times each on the Well-Tempered Arm, I’ve changed my mind. Struggling with a 147-lb Krell is a piece of cake compared to getting the best performance out of these cartridges. Not that these cartridges are particularly finicky; it's just that any cartridge is only as good as the turntable/arm/setup—especially the setup. Slight adjustments in VTA (Vertical Tracking Angle), VTF (Vertical Tracking Force), and azimuth had significant effects on tonal balance, subjective quickness, and (especially) soundstaging. The Well-Tempered is not the ideal arm for comparing cartridges. Its silicone damping makes azimuth adjustments difficult; effect a slight adjustment and wait for the results.

As I tweaked and tweaked, I thought of Arnis Balgalvis's Airtangent arm with multiple removable arm tubes. One need get the alignment right just once for each cartridge, and comparison becomes instantaneous (well, relatively instantaneous—30 seconds) as arm tubes are switched. But enough moaning—I did get what I felt to be the best performance from the 7000 and the Benz MC-3.

And what a performance it was! Both these cartridges are stunning—but quite different from each other.

I’ll start by saying that I found it difficult to write this review. Not because I had nothing to say, but because I had to tear myself away from listening long enough to write it. The AQ 7000 had that rare ability to compel the listener to hear just one more piece of music, then another, and another. This is the hallmark of a truly great component, and the surest sign a product is fundamentally right musically.

The AQ 7000 retrieves and presents to the listener a wealth of detail and nuance, all within a huge and transparent soundstage. Listening to music through the 7000 was like looking through a large picture window at a panoramic landscape. The openness and sense of size this cartridge rendered was nothing short of stunning. Coupled with this was a crystal-clear transparency that allowed every detail to surface. There was no trace of opacity, grain, or grunudge to obscure musical detail or prevent a clear view into the soundstage. In addition, soundstage width was superb, with images thrown with pinpoint precision and clarity within the soundstage and appearing well beyond the loudspeakers' lateral boundaries. The 7000 had a remarkable sense of focus and razor-sharp delineation of instrumental outlines. I sat rapt as I went through my record collection, hearing detail and spatial definition only hinted at by other phono cartridges.

Depth rendering was similarly superb. The sense of three-dimensional layering was dramatic: the 7000 seemed to resolve slight front-to-rear distances with infinite precision. An instrument directly behind another instrument existed on its own, completely unfettered by the intervening image. These fine depth gradations extended deep into the soundstage, letting the listener follow reverberation decay to the very bottom. Individual reflections could be resolved within the reverberation, further adding to the 7000's sense of fine precision. In addition, the 7000's superb image specificity and width extended to the soundstage's depths rather than becoming homogenized in an increasingly narrower stage.

Compared with the Benz Micro MC-3, the 7000 presented a more focused and precise soundstage. However, the sense of ultimate soundstage depth was superior through the MC-3, although less clearly defined than the 7000. I felt the 7000 presented more musical information, but had less sense of ease than the MC-3.

Transient detail was superb, but slightly on the etched side in comparison with the somewhat more laid-back MC-3. I had the feeling that no detail imbedded in the grooves was left behind by the 7000. Transient leading edges

---

1 It's interesting that while an LP can throw a wider soundstage than a CD, a cartridge's channel separation is rarely greater than 35dB, a figure contrasted with digital's 100dB or more (135dB for the Stax BM-X).
were razor-sharp and exceptionally clean. The 7000 had an overall quickness that added to the impression of lots of detail. Drums, in particular, had that leading-edge bite heard in real life. The MC-3 didn't approach the 7000 in conveying the transient attack of a snares drum. In this regard, the 7000 was much like the Hailes System Two Signature loudspeakers—no overhang, smearing, or congestion. The sheer amount of detail was captivating. My attention was riveted on the musical performance: Any loss of concentration would mean missing some of what was going on. I've found that with lesser cartridges (and components in general) there is not this compelling fascination and seizure of one's complete attention. When the presentation is bland or otherwise unmusical, missing some of it somehow becomes less important.

The 7000's tonal balance was extraordinarily neutral, but with a very slight up-tilt in the extreme treble. Cymbals had a little more top-octave "ssss" component than I would have preferred, and brass instruments had a sheen that was just a little on the shiny side of reality. Listen to the remarkable Sheffield Lab Tower of Power Direct (Lab 17). The horn section has the bite and edge that are a natural part of brass instruments' sound, but with a trace of whiteness rather than a burnished glow. Also on this LP, the tambourine in "You're Gonna Need Me" was more prominent, with a greater feeling of presence. The MC-3 presented the tambourine farther back in the soundstage, and with less HF energy. However, the 7000 clearly resolved the tambourine's multitude of individual transients. Through the MC-3, the tambourine tended to be more of a continuum, rather than made up of distinct, discrete components. In addition, it was possible to follow the reverberation longer with the 7000, adding to the sense of air and openness.

My impression of the 7000's slightly prominent treble is confined to the extreme top end: instruments without substantial upper-octave energy were unaffected. I wouldn't call the 7000 bright or etched—lively is a better word. I've since noted that this characteristic seems to be diminishing, even as the cartridge approaches the 70-hour mark. Does the 7000 need more break-in to sound its best?

The 7000's portrayal of midrange textures was beyond reproach. The cartridge had a harmonic rightness and richly woven character that made reproduced instruments so lifelike. This characteristic, I believe, is an important reason the 7000 is so musical and involving. It is the opposite of synthetic sterility. The 7000 breathed life and vitality into the music. Consequently, the palpability through the midrange was stunning. Instruments seemed to exist in the listening room, with a believable quality. Bill Evans's piano on the Quintessence LP (Fantasy F9529) had a tangible quality that took me a step closer to his beautiful expression. I felt a moving intimacy with the music that I hadn't experienced before, despite having heard this record repeatedly over the past eight years. I find it fascinating that some audio components convey a performer's expression differently from others. The 7000's startling transparency and tonal neutrality seemed to bring me closer to the musicians' intent.

Like the 7000's treble presentation, its midrange character was more forward and prominent than the MC-3. The 7000 tended to project lead instruments in front of the loudspeakers, while the MC-3 made them slightly recessed in the soundstage. Which was more musical? I sometimes preferred the Benz, sometimes the AudioQuest.

The 7000 had a somewhat lean character in the midbass, contrasted with the MC-3's tendency toward roundness and fullness that added a touch of unnatural—but not unpleasant—warmth. The 7000 didn't have the warm purring quality in the bass heard through the MC-3—a quality welcome on some music but not others. However, on some records the MC-3 could sound congested in the bass, while the 7000 maintained its clarity. Ultimately, I thought the 7000's bass presentation was more toward the neutral side of reality.

Not surprising in light of the 7000's other characteristics, its bass was exquisitely detailed, articulate, and tight. There was no sense of sluggishness, overhang, or bloat to interfere with the music. Plucked acoustic bass was particularly impressive. There was a nice roundness and rich resonance, coupled with a clearly defined string attack. Again, there was an immediacy, a tangibility, that was so musically compelling that I wanted to just sit and listen. The 7000 didn't have the euphonic bloom in the bass that characterizes the MC-3, but I suspect the 7000's was the more accurate rendering.

One area in which I felt the 7000 was lacking was in conveying the physical power of music. Musical climaxes weren't as fully fleshed

Stereophile, June 1991
out and dynamic as through the MC-3, taking away some of the drama and impact from full-scale orchestral music. The 7000 was more refined and intellectual than visceral in presenting dynamics. Although the 7000 was superb at revealing dynamic contrast in the mids and treble, the bass lacked the weight and slam heard through the MC-3. In this regard, the 7000 was again like the Hales Signatures—fast and tight, but somewhat lean.

After writing this, I managed to retrieve the Expressive Technologies SU-1 step-up transformer from JA and did some listening. The SU-1 looks and weighs more like a power amplifier than a moving-coil step-up. At 35 pounds and $2500, it is unconventional to say the least. However, the difference it made to the phono presentation was tremendous. The treble took on a more liquid ease, the bass seemed to extend deeper and with better pitch definition, and dynamic contrast improved. With the SU-1, the 7000 took on a nice bloom in the bass and the treble was more laid-back. Watch for a full review of the SU-1.

Incidentally, you may be wondering how the $3000 Well-Tempered/AQ 7000 combination compared to some of the finest digital playback—the $4000 Esoteric P-2 driving the $7000 VTL D/A. Despite all the recent advances in digital audio, LPs were consistently more involving and musically satisfying than CDs. It wasn’t even close.

I measured the AQ 7000 and the MC-3’s frequency response, but am reluctant to draw any but relative conclusions between these two cartridges. Because of test-record vagaries, and without a significant data base of measurements with the same test records, the results may be misleading. However, the measurements did confirm my listening impressions with these two cartridges. The AQ 7000 had 1.8dB more energy at 20kHz, 2.1dB more at 16kHz, and was fairly comparable in output until 1kHz. Below 1kHz, the MC-3 had about 0.2 to 0.3dB more output through the entire lower midrange, upper and mid bass, and low bass, extending all the way down to 20Hz. This confirms my impressions of the two cartridges: the AQ 7000 is lean in the bass and slightly uptilted in the extreme treble, while the MC-3 is softer in the treble and has more warmth and fullness in the bass.

**Conclusion**

AudioQuest’s 7000 cartridge is clearly a Class A performer. Its most notable quality is a huge, focused soundstage with pinpoint image specificity, superb three-dimensional layering, and clear delineation of instrumental outlines. There is also a pristine clarity to the presentation that allows the listener to hear into the soundstage. The 7000 is like a transparent picture window on the musical panorama. Other areas where the 7000 excels include razor-sharp transient detail, ability to resolve finely woven textures, and a tight, well-defined bass.

Despite these rave comments, I do have some reservations about the 7000. I would have liked a little more subdued and laid-back treble, I detected a trace of etch in high-frequency transients, and the tonal balance was slightly lean. The 7000 could be characterized as somewhat analytical rather than romantic, intellectual rather than visceral. These traits were contrasted with another excellent cartridge, the Benz Micro MC-3, which tends to lean in the opposite direction with a laid-back ease and warmth. However, the 7000 presents more musical detail, throws a far more focused and precise soundstage, and has better articulation in the lower octaves. Ultimately, I feel the 7000 to be the more neutral cartridge.

To the AQ 7000’s credit, the treble seemed to become sweeter even after what seemed a sufficient break-in period. In addition, the Well-Tempered Turntable and Arm tend to have a lightish tonal balance—I'd like to hear the cartridge on a Graham arm or SME V.

The bottom line, however, is that I enjoyed my record collection immensely with the AQ 7000. It was like hearing some records for the first time as the 7000 extracted and conveyed all the music in the grooves. I felt a compelling intimacy with the music that defied description. There was the desire—no, need—to pull out favorite records, sit back, and enjoy. This is the best testimonial to any audio product’s fundamental musical rightness. The AudioQuest AQ 7000 is an investment I cannot imagine anyone regretting.

Now, if you'll excuse me, I'm going to get back to my record collection. If you don't see any equipment reports from me next month, you'll know why.
"I don’t like Mondays!" sang Bob Geldof some years back, and I’m beginning to hate Mondays too. No, not for the obvious reason. You see, Monday is "hate-mail" day. Every day I get letters from Stereophile’s readers. But for some reason known only to the mavens (or should that be Clavens?) of the US Postal Service, the ones pointing out my stupidity, dishonesty, and sheer incompetence as a human being arrive on Mondays.

For example: "Bits are bits, and it is therefore dishonest for Stereophile’s writers to continue to insist that they can hear any differences between CD players or digital processors!" recently wrote an angry reader, canceling his subscription. (They always tell me they’re going to cancel their subscription.) "Yeah, right!" thought I, having just sat through a comparative audition of, would you believe, digital data interconnects in Robert Harley’s listening room. Some of the differences I heard were not trivial. They might even be audible in a blind listening test.

I wished I could have uprooted that complacent Monday-morning digiphile, sat him down in Bob’s system’s sweet spot, and declaimed something along the lines of, “You can’t tell me you don’t hear that!” At which he would have broken down, said “You’re right!”, admitted the hitherto uncorrected error of his ways, bought a complete set of Stereophile back issues, and gone on to lead a full, productive life instead of conspiring with the Postal Service to destroy the equanimity of my Monday mornings. Instead, I respond to such critics with pleasant letters, littered with references and well-supported arguments, all of which I know will have no effect on the recipients’ opinions.

It was with joy at the synchronicity, therefore, that on the following Tuesday I read the "Letters" section of the April 1991 issue of the English magazine Hi-Fi News & Record Review! In a lengthy letter, respected UK designer Stan Curtis angrily dismissed the claims of engineers (who should know better) that it is a fact that a digital one is a one and a digital zero is a zero and ever more shall be so. Stated Stan succinctly, "This ‘fact’ belongs in a different category from the ‘fact’ that if you punch a brick wall you invariably hurt your hand," and he warmed to his theme by pointing out that once the CD’s information has been read and

---

As you read this, it is exactly five years since I gave up the editorship of that hallowed organ to take over the helm of the good ship Stereophile. Time sure flies when you’re having fun!
error-corrected to produce digital data, this bit stream is totally unprotected from further degradation or corruption.

And one of the obvious ways in which to corrupt the data is to fool around with its timing, a process called "jitter." As I showed with the computer simulations in my recent "Jitter, bits, & sound quality" article,2 varying the word-to-word timing of the data fed to the DAC by as little as 1ns—a nanosecond, or a billionth of a second—reduces the resolution of what would otherwise be 16-bit data to 15 bits! The greater the jitter, the lower the resolution of a CD playback system—and it will come as no surprise, I am sure, to learn that jitter of at least 1ns is not only possible, it is common.

"Bits are bits?" say you.

"Hai!" say I.

Having got that out of my system, let me tell you about Meridian's 602 CD transport. Now the very existence of the component category "CD transports" seems to irritate my Monday-morning moaners. But it has surprised me that despite the proliferation of standalone DA processors, only a relatively few companies have squared the circle by introducing CD "turntables." In this and other recent issues of the magazine, our reviewers have auditioned transports from Arcam, Wadia, Esoteric, and Proceed, while a Krell MD-1 has just arrived as I string these words together on the computer monitor. But as Meridian had sent a 602 transport to accompany their D6000 active digital loudspeaker (which Robert Harley will be reviewing shortly), I decided to spend some time with it and report on how I got on.

What it is
The 602 is superficially identical to the Meridian 208 CD player/preamplifier that I reviewed last December in that it is an attractively proportioned, black-finished unit with a glass face. A single row of vertical gold pushbuttons rather than the 208's double row of acrylic buttons distinguishes the new unit, however, and instead of the 208's rather clunky 7-segment green LED display, the 602 has a green alphanumeric display which forms real words as opposed to altered numbers. (Perversely, these are rather harder to see from across the room than the 208's primitive runes.)

Front-panel controls are rudimentary, con-

sisting of Open, Play, Stop, Pause, Next, and Prev, but this is because the unit is intended to be mainly used with the supplied 209 full-function remote control. This handsome flat black unit, with a clearly laid-out array of buttons, also operates the 208 CD player/preamplifier and 206B CD player. The 209's Display button cycles the 602 through modes in which it displays Track and Index number; Track number plus elapsed time for the entire disc; Track number plus elapsed time for the current track; Track number plus remaining time for the entire disc; and display blanked. Two additional red LEDs indicate data error and disc preemphasis. Two idiosyncrasies are: 1) the remote's Fast Forward and Reverse Scan buttons mute the output while in operation—something that probably bothers reviewers more than audiophiles in general; and 2) it is not intuitive how to access index points. (You have to first press "*" on the remote.)

The unit's rear sports an IEC AC socket/switch module. As with other Meridian components, the 602 is intended to be left powered at all times, a "standby" button on the 209 putting the unit into a sleeping mode with the display off (apart from a single green dot) but the sonically important circuitry warmed up and ready for action. The AC switch on the rear is only intended to be used if the owner is going on vacation, for example. Two optical data outputs are provided, via standard Toslink jacks, paralleled by a coaxial output on a gold-plated RCA jack. Communication sockets are also provided—DIN and Toslink optical—to allow the 602 to serve as the source for (and be controlled by the remote control for) the Meridian D600/600B and D6000 active loudspeaker systems.

As with other Meridian 200 and 600 series players and transports, the Philips transport mechanism is mounted on the sliding tray, the user actually placing the disc on the motor spindle rather than on a separate carrier. Care must be taken with this, as there is only a limited clearance between the disc in place and the top of the front-panel slot; if the disc is not correctly positioned, it can jam between the front of the sliding tray and the panel, to the consternation of the audiophile. But this is a rare occurrence, happening only once while I used the unit: when I started to place the disc in the tray, a static discharge triggered the 602's door-close mechanism. (Though I keep a hu-

---

2 Stereophile Vol.13 No.12, December 1990, p.179.
midifier running in my listening room, the Southwest is still so dry in the Winter and early Spring that you have to remember to discharge yourself by touching something metal each time before you operate the system.) The advantage of Meridian’s layout, however, is that once the disc is inside the machine, it is completely acoustically sealed against airborne vibration.

How it sounds
I used the 602 for my last three months of music listening, as well as it being the main CD data source for my recent reviews of the KEF R1072 and Wilson WATT 3/Puppy loudspeakers. I fed its output to the outrageously expensive Stax DAC-X11 processor, first via an inexpensive plastic-fiber Toslink data link, then by a variety of coaxial cables. Meridian clearly states in the 602 manual that the optical connections are to be preferred, because of the lowered possibility for RF interference. Nevertheless, after extensive comparisons, I preferred the better of the coaxial connections, in the form of the Mod Squad’s Wonderlink. Which is what I used thereafter.

So, how does the 602 sound?
If you rank digital components on how close they approach the analog experience (and reality, the two not being disparate), the 602 is up there with the best. The soundstage was wide and deep, with individual instruments within that soundstage preserving their tonal individuality as the recorded level maxes out. This, for me, is where many digital source components fall down, the individual sounds melding into a mash of high-frequency partials at high levels, as though all the spaces in the spectrum were being filled with intermodulation products.

Low-frequency extension also seemed excellent, recorded organ having the appropriately full authority. A current favorite organ album of mine is the 1980 Telarc featuring Michael Murray at the Methuen instrument (CD-80049). The purity and clarity of this early digital recording’s lower treble are very dependent on the digital playback system. With the disc in the 602, the doubling of the bass lines with the organ’s 32’ and 16’ registers on the cycle-of-fourths passage in Bach’s G-Minor Fantasia came over with full effect, contrasting the way in which an additional treble stop is added to the mix during each circular motion. If I had to pick just one aspect of its performance that mandates the 602’s recommendation, it would have to be how it extends the subjective bass response of your system.

In fact, this increase in low-bass authority is something I have noticed with each real improvement in digital replay. It has also been independently noted by other critics that lowering the jitter in a digital data stream results in subjectively improved bass resolution. Why this should be I have no idea, given that the most obvious measurable effects of increased jitter levels can be seen in the treble region.

Okay, given that I enjoyed the sound of the 602 in absolute terms, how did it compare with other respected transports?
My first comparison was with the data output of the Meridian 208. The family resemblance was strong. Both Meridian transports gave a musically satisfying sound, with a wealth of detail apparent. The sound of both was free from the treble clogging that I mentioned earlier. But the 602 scored higher marks for its more extended low frequencies, as well as for a slight edge regarding the palpability of individual instruments. On Amanda McBroom’s “Dorothy” track on her West of Oz album (Sheffield Lab CD-15), the bass guitar is very prominent in the mix. Though its tonality was excellent via the 208, the presence-region edge that the engineers have added to its sound was better integrated with its upper-bass bloom when the CD was sitting in the 602. As good as I felt the 208 to be when used as a transport when I reviewed it last December, the 602 has stretched its performance envelope just that essential bit further.

My final comparison, and an obvious one, was with the Wadia WT-3200 that Robert Harley reviews elsewhere in this issue, again with both transports connected to the Stax with lengths of Mod Squad Wonderlink. (An RCA/BNC adaptor had to be used with the Wadia, of course.) Differences here were a little more incisive than between the 602 and 208, though the Wadia is undoubtedly a superb-sounding component. Whereas the Meridian could be said to produce a rather laid-back if highly detailed treble from the Stax, the Wadia moved the entire midrange region slightly forward. Details in the soundstage became more vividly exposed as a result, though recorded digital problems, such as occasional modulation noise on early digital recordings, also sometimes made the sound a little sizzly. The

Stereophile, June 1991
Wadia's bass definition was superb, though it lacked the ultimate authority of the Meridian.

The English transport also scored slightly higher in the more three-dimensional manner in which the soundstage was reproduced. (Three-dimensional not only in the sense of width, depth, and height, but in the way individual instruments and voices acquired a solidity of their own within the overall soundstage.) One of my favorite Rachmaninoff Third Piano Concertos on CD, for example, is that from Ashkenazy with the Concertgebouw Orchestra under Bernard Haitink (London 417 239-2). Played on the Wadia transport, the sound was typically Decca—vivid in the highs, powerful in the lows. Via the Meridian, it softened a little in its treble impact but individual instruments became more, well, individual, as well as acquiring a more natural midrange tonality and a slightly deeper low bass. The stage was also a little wider and deeper. Toward the end of the first movement, the piano echoes the trumpet fanfare with a heavily pedaled attack/damp manner. Though the Wadia could hardly be faulted in its handling of this passage, the 602 enabled you to hear the "wall" of the hall that little bit more clearly in between the piano chords.

Of course, if you read RH's review of the Wadia, you'll realize that my use of its coaxial data output would not get this thoroughbred to give of its best. RH clearly felt—and, having heard the difference in his system, I agree with him—that using the Wadia's glass-fiber optical output enabled it to attain the highest possible sound quality. But as the only DA processors currently available that can accept the glass-fiber-optic data stream are from Wadia and Audio Research, I felt it fair to use just its coaxial output for these comparisons.

Regarding the more mundane aspects of performance, the 602 sailed uneventfully through all the torture tracks on the Pierre Verany Test CD 2 until Track 36, which has a 2.5mm data dropout every revolution, and Track 50, which has two 3mm dropouts in succession. Once it dropped out on Track 43, which combines a 2.4mm dropout with minimum track pitch, but I couldn't get it to repeat this aberration. This is superb, almost flawless, error-correction!

What I think about it
These days, the essential question is whether you should buy a CD transport with conventional outputs in view of the apparent improvement the glass fiber-optic connection can give. The only answer I can give is, "It depends." This is an individual decision based on the rest of your system and the direction in which you want it to evolve. Certainly during the time I used the beautifully made and beautiful-looking Meridian 602, I couldn't find fault with the sound it wrought from the Stax processor. Even though its $2750 price is more typically what you'd pay for a complete CD player, such as Meridian's own 208 or 206B, I heartily recommend it. It is obviously a Class A front-runner for use with processors that have conventional coaxial or Toslink optical-connected data inputs.

WADIA WT-3200 CD TRANSPORT

Robert Harley

Specifications: CD transport with coaxial and glass fiber-optic output. Three digital outputs: one electrical on BNC jack (0.5V, 75 ohms output impedance), one optical on ST-type jack (~16dBm,
When the Compact Disc was first introduced, it appeared to sound the death knell for the audiophile's obsession with tweaking his signal source—primarily an LP playback system. With the promise of "perfect sound forever" and the claims that all CD players exhibited the same degree of perfection, the false hope that digital front ends would always perform optimally was thus promulgated.

But look how much more sophisticated we are now! The first myth to fall was the CD's "perfection," followed by "all CD players sound the same," then "CD transports can't affect the sound," and now "digital transmission formats make no sonic difference." These are just the most salient examples: witness the vast array of CD tweaks—some worthwhile, others shams—that have appeared in the past few years.

If past history is any indication, the engineering community and mainstream press will eventually come to recognize and acknowledge more and more of these sonic differences. The same reporters who once praised digital's perfection now routinely criticize early CD players for their "harshness." Don't be surprised if in five years they praise the lack of "harshness" in modern CD transports, and five years after that recognize differences in digital interconnects and interfaces.

What does this have to do with the Wadia WT-3200 transport? Well, these thoughts were sparked by the WT-3200's "glass fiber-optic Modem," an alternative optical digital interface. I've been playing with the WT-3200's coaxial and glass optical outputs, and the musical differences are not subtle. "But both interfaces transmit the same error-free sequence of ones and zeros. There can't be any differences," argue the naïve. Like many things, a closer examination of a phenomenon often reveals a structure of far greater complexity than was first realized. There is a solid, rational explanation for the sonic differences between a glass fiber-optical interface and electrical connection via coaxial cable. Since Arnis Balgalvis has already discussed these reasons in his review of the top-of-the-line Wadia WT-2000 transport last month, let's move on to the WT-3200 and its musical performance.

### Technical Description

The WT-3200 is a full-featured CD transport made in Japan to Wadia's specifications. Critical circuit boards are manufactured in Wadia's factory and shipped overseas for inclusion in the 3200.

The 3200 boasts a slew of features rivaling any CD player built for convenience instead of sound. These include Shuffle Play, random programmability, A-B loop repeat, index search, and several time-display modes. Nearly all the functions are provided only on the infrared remote control, keeping front-panel buttons to a minimum.

The thick black front panel holds the fairly large orange-tinted display, drawer front, and seven small recessed pushbuttons. Only power on/off, drawer open/close, track search, play, pause, and stop controls are provided on the front panel. The drawer front and display are tilted slightly back, making viewing easier.

The rear panel holds an IEC power-cord jack and line fuse, and three digital outputs, all of different configurations. One output is electrical on a BNC jack designed for a coaxial interconnect; one is the standard TOSLINK optical jack, and the third is an AT&T ST-type glass-fiber connection. Wadia pioneered the use of this very expensive glass-fiber interface in consumer products, and now includes it on all their transports and processors. A BNC-RCA cable is supplied for those users without a BNC or glass fiber-optical input on their processor. The Wadia processors come with a glass-fiber cable.

The distinction between the standard TOSLINK (also called EIAJ) optical interface found on most equipment and the 3200's AT&T ST-type glass interconnection should be emphasized. The TOSLINK format was chosen for its low cost, not its sonic virtues. In addition, it was designed for a plastic conductor, not glass. My previous experiences comparing TOSLINK and coaxial interfaces convinced me that coaxial was always superior to plastic optical. Before this review, I had never auditioned the glass optical interface.

Philips's CDM1 transport forms the basis of the WT-3200. This is Philips's best mechanism,
and more expensive than the more common CDM1 Mk.II. Although the CDM1 is discontinued, Wadia felt so strongly that it was superior to all other transport mechanisms (except the Esoteric) that they commissioned a line to continue producing the CDM1 on an exclusive basis for the WT-3200. Wadia felt the CDM1 was the most mechanically stable transport ever made by Philips.

Wadia then incorporated their clocking circuit into the 3200, which reportedly reduces timing errors in the digital audio data. The circuit is tied to the drive's rotational servo, affecting the signal through the entire chain from the photodetector that receives the reflected beam from the disc, through decoding and error correction, and finally to the output data driver. According to Wadia, transport clock accuracy can be adjusted for maximum precision, but many transports have timing errors due to poor adjustment. They reportedly have found large variations between samples from the same manufacturer. Wadia claims to avoid this problem with their circuitry and careful attention to clock timing errors.

The WT-3200 uses a CMOS output driver which Wadia claims is superior to a pulse transformer as found in the Esoteric transports. The chassis is copper-plated inside, and of quite sturdy build. In fact, one is struck by the sheer weight and solidity of the WT-3200. The power supply is quite beefy, with a large toroidal transformer. All circuitry is shielded from RF by copper cases that cover the unit's two printed circuit boards.

Overall, the WT-3200's build quality is excellent. My only complaints are ergonomic ones and not particularly significant: the front-panel buttons are small and slightly recessed. Larger buttons would have been easier to depress without exact finger/button alignment. However, I soon got in the habit of using the remote control, making this minor criticism moot.

**Listening**

I had an opportunity to audition the 3200 with three different processors having glass optical inputs: Wadia's 2000 and X-32, and the Audio Research DACI reviewed elsewhere in this issue. The 3200 also saw evaluation with the VTL Reference D/A converter via coaxial interconnects made by Aural Symphonics, TARA Labs, and The Anodyne Group. The 3200 was judged in direct comparison with the widely praised reference Esoteric P-2 transport reviewed in Vol.13 No.12.

My preamp was an Audio Research SP-11 Mk.II or the passive EVS Stepped Attenuator, while interconnects between processor and preamp were the super—but admittedly expensive—AudioQuest Diamond. Power amplifiers and loudspeakers were the usual VTL 225W Deluxe monoblocics driving Hales System Two Signatures via 3' runs of AudioQuest Dragon/Clear cable. A Muse Model 18 subwoofer, scheduled for review in the next issue, helped out the Hales in the lowermost octave and a half. Interconnects between preamp and the VTls (actually the Muse's internal crossover) were AudioQuest Lapis.

The 14.5' by 21' dedicated listening room has optimum dimensional ratios for room-mode distribution. A pair of Phantom Acoustics Shadows, an active low-frequency control system, was employed in the corners behind the loudspeakers.

First auditioning the WT-3200 with its coaxial output driving the Audio Research DACI, I noted its sense of ease, soundstage transparency, and resolution of detail—all hallmarks of a good transport. The 3200 was off to a good start.

The WT-3200 had the ability to open the window on the music and reveal nuance and subtleties not heard through lesser transports. Fine detail and low-level information—so important in holding the listener's attention—were presented with exceptional resolution. No detail escaped the 3200, infusing music with a liveliness and immediacy I found captivating. The 3200 also had the ability to differentiate between individual instrumental lines, never homogenizing them into a synthetic continuum. There was a distinct sense of front-to-rear space that allowed the soundstage to blossom, instruments and voices occupying their own spaces. Many layers of information were resolved with great precision: the presentation was the antithesis of flat and cardboard-like. Instrumental outlines were round, palpable, and seemed to exist in space before the listener. Dorian's The English Lute Song (DOR-90109) was a good example: voice and lute were separate and distinct, while the reverberation seemed to envelop them without merging with the direct sound.

Detail tended to be a bit forward rather than subtle. The 3200 had a kind of "grab-your-
attention” quality as a result of its highly detailed and slightly forward rendering. There was, however, a slight trace of hardness and etch to high-frequency transients—nothing severe, just a hint.

I compared the WT-3200 with the Esoteric P-2, both connected with identical runs of Aural Symphonics Digital Standard interconnect. The $4000 P-2 has established itself as a front-runner in CD transport performance, and serves as a reference against which other transports are judged. (The $5500 Wadia WT-2000 is based on the P-2's mechanism.)

In a side-by-side comparison, I was quite surprised at just how close the substantially less expensive 3200 came to the P-2. First, the P-2 had a more laid-back and analog-like presentation. Lead instruments were slightly less forward through the P-2, contributing to its remarkable sense of ease. I also felt the P-2's soundstage was somewhat wider and more open, better conveying a sense of size. The P-2 also had a more natural timbral rendering, with greater midrange liquidity. By contrast, the 3200 gave just a bit of an edge to instrumental timbres.

To the 3200's credit, it did present a more highly detailed presentation, with a clearer and better defined soundstage. Instrumental outlines were more sharply defined within the soundstage through the 3200, creating a greater sense of palpability. The 3200's soundstage focus and razor-sharp presentation of images were stunning. The superb new Chesky recording, Clark Terry Live at the Village Gate (Chesky JD49), was presented like I've never heard it before. There was an uncanny illusion of space, each instrument clearly “visible” at a specific location within the soundstage.

The 3200 had a very different low-frequency character compared with the P-2. Where the P-2 was lean and tight in the bass, the 3200 was fuller, warmer, and had greater body. With the somewhat lean Audio Research DACI, the 3200's fatter bass was welcome. I felt, however, that the P-2's pitch resolution and articulation were slightly superior.

Although the WT-3200 is an excellent transport and came very close to the P-2, I ultimately felt the P-2 to offer a more musical and involving experience.

Comparing the P-2's coaxial output to the WT-3200's glass fiber-optical output, however, was a completely different ball game. With the glass interface, the 3200 took a huge leap over the P-2 in virtually all performance aspects.

Switching from the 3200's coaxial output to glass optical output was like adding a whole new dimension to the music. The soundstage opened up, became more transparent, and revealed a wealth of subtlety not previously heard. The richly varied and intricate percussion at the beginning of "Wildlife" from the Yellowjackets’ Four Corners CD (MCA MCAD-5994) suddenly became more palpably three-dimensional. Each instrument was more alive, with a greater feeling of existing in the listening room.

The glass interface provided a significant increase in musicality, easily surpassing the P-2. The glass interface allowed the listener to hear much farther into the performance, with far more resolution, detail, and spaciousness. Textures became more liquid and natural, and the edge noted earlier disappeared. High frequencies, in particular, became smoother and less hard. The amount of detail-obscuring grain in the treble was reduced considerably, greatly improving the overall musicality. Sibilance sounded more natural and less spitty with the glass interface. In addition, throwing the Audio Research DACI's input selector switch from the coaxial input to the glass optical input made the soundstage suddenly much deeper, with many more layers of information.

As dramatic as these differences were, the most difference was in the bass presentation. With the glass optical interface, the 3200 had far deeper bass extension, more dynamic LF power, and greater resolution of low-frequency timbral shadings. Instead of just having low frequencies be present in the music, suddenly I could hear the detail and the textural qualities of acoustic and electric bass. Bass drum had much more slam and impact, giving music a punchier, livelier quality, with more energy and rhythmic drive. This increased the musical synergism created when a bass player and drummer lock in, infusing music with a greater sense of cohesion. In addition, the glass interface provided a much more believable rendering of low-frequency–rich instruments with resolution of fine detail.

After spending time with the glass-fiber interface, it was difficult to go back to coaxial. Wadia is really on the right track in including this type of interface on its products and urging its adoption as the standard.

Incidentally, my impressions were repeated
and substantiated with the WT-3200 driving the Wadia 2000 through both coaxial and glass optical interfaces. However, I heard the most difference between optical and coaxial with the Audio Research DAC1, perhaps because both Wadia units use the Rok Lok circuit that reduces jitter in the recovered clock, presumably the source of the sonic differences.

**Conclusion**

Even without the glass fiber-optical output, the Wadia WT-3200 is an excellent transport, very closely approaching the reference Esoteric P-2 in performance. It offers sharply focused, highly detailed musical performance. Its soundstage transparency is beyond reproach, providing a clear window on the music. Its presentation tends to be a bit forward and immediate rather than subtle and delicate. I feel, however, that the P-2 offers a more analog-like presentation, with smoother instrumental textures and a more laid-back quality.

With its glass fiber-optical interface, however, the WT-3200 is clearly superior to any other transport I've heard. The entire presentation takes on a much more three-dimensional quality, with layers and layers of detail suddenly revealed. In addition, the bass presentation is deeper and with better resolution of pitch and timbre.

It's unfortunate that more digital processors don't use the glass optical interface: I'm convinced from this experience that it is a better method of transmitting digital audio data. The good news, however, is that some of the better digital processors, like Wadia's 2000 and X-32 and the Audio Research DAC1, incorporate a glass optical input.

The Wadia WT-3200 is highly recommended, both for its intrinsic musicality and potential for future use with processors having glass-fiber inputs. And if you already own a Wadia or Audio Research processor with glass input and are currently using a coaxial interconnect, the Wadia WT-3200 should be at the top of your shopping list.

---

**ARTFUL DODGERS**

**Thomas J. Norton reviews two power amplifiers:**

**the Sumo Andromeda II and Adcom GFA-565**

Sumo Andromeda II solid-state stereo power amplifier. Rated power output: 240Wpc into 8 ohms (23.8dBW) with less than 0.05% THD, 400Wpc into 4 ohms (23dBW) with less than 0.1% THD, from 20Hz–20kHz. Intermodulation distortion (IMD): 0.05% from 0.25W to full power. Frequency response: +0.1dB 20Hz–20kHz, –3dB from 0.1Hz–170kHz. Input impedance: 47k ohms. Input sensitivity: 1.8V RMS for rated output. Hum and noise: 110dB below rated power. Rise time: less than 2μs. Slew rate: 115V/μs. Damping factor: greater than 500. Dimensions: 19” W by 7” H by 16.75” D. Weight (shipping): 55 lbs. Price: $1499. Approximate number of dealers: 100. Manufacturer: Sumo, 9829 Independence Avenue, Chatsworth, CA 91311. Tel: (818) 718-0267.


It was not the best of times. Aside from a major repair job on the car, it was National IRS week. This year, I was "asked" to make a major supplementary contribution to support the festivities leading up to April 15. At least I was able to use the EZ form this year. That's the one that asks you to list your income and send in a check for 80% of it.

Not that I expect any sympathy. It's just that this time of year reminds most of us of the mortality of our own personal finances. Here today, gone tomorrow. You not only can't take it with
you, it's nearly impossible even to hold on to it along the way. For a music lover and audiophile, indulging in one's passion can involve more than a bit of creative fund-raising. Those who can satisfy their dreams in equipment (not to mention program material) without a second thought are rare. Though the "high end" of the high end includes products that often (but not always) produce stunning performance, these same products can also perform a stunning disappearing act with your bank balance. Many of us simply cannot afford them.

Fortunately, there are alternatives. While the manufacturers who make the priciest gear still have to engage in a certain juggling of cost-benefit tradeoffs, they have considerable flexibility in their choices. When in doubt, put it in. As the cost of the active parts escalates, the "package" must be upgraded. Not many buyers will consider Krell-level circuitry and parts built into the cosmetic equivalent of a brown paper bag. Would you? Probably not. Fortunately there are other manufacturers who court the potentially bigger market for more "affordable" products.

Adcom and Sumo are about as far apart geographically as two US-based manufacturers can be, but share similar marketing and pricing philosophies. The amplifiers reviewed here are at the top of each company's line (as of this writing), and while neither Adcom nor Sumo can be accused of running a fire sale, both are operating a long way from the top-dollar high end. Both would argue that they substitute clever planning and well-considered tradeoffs for the brute-force megabuck megablocks produced by some of their pricier competitors.

Sam Tellig's piece on the Adcom monoblock amplifiers in his April 1991 column (Vol.14 No.4) certainly stirred up the pot—the groans from the competition could be heard through our fax machine. Sam covered the waterfront pretty well, but since we also had a pair here in Santa Fe it seemed like a useful idea to include a follow-up of the Adcom, with lab tests, along with a look at the Sumo Andromeda II.

**Descriptions**

**Adcom GFA-565:** $1700/pair: Adcom has long since stopped surprising us with this sort of thing. They've specialized in low-income penthouses since the original GFA-555. Looking very much like the latter, the GFA-565 is in actuality a monoblock amplifier with enough available output to roll back the rug and start your loudspeakers tap-dancing if you let it. At $1700 or so for the pair of them required for stereo, they would appear to offer a real value to those who need (or think they need) reams of power.

The toughest test of an amplifier (matters of sound quality *per se* aside) is its ability to drive a wide range of loudspeakers without suffering a nervous breakdown somewhere along the line. Static amplifier bench tests, ours included, are made into loads which are, effectively, purely resistive, a situation not typical of real-world loudspeakers. Most speakers have significant capacitive or (more often) inductive components, complicating an amplifier's job. And while any competently designed modern amplifier will not actively and audibly misbehave into any *reasonable* load, Adcom makes a special point of the GFA-565's ability to deliver, across the full audio bandwidth, high current into such complex loads—even low-impedance ones which dip below 1 ohm. Apogee Scintilla and early-model Wilson WATT owners should take notes here.

To accomplish this, the GFA-565 begins with a large toroidal power transformer (1.25kVA) followed by 70,000μF of power-supply filter capacitance. It finishes up with ten pairs of TO-3 type, metal-case, bipolar output transistors. For those into the private lives of amplifiers, the latter are configured in a "triple Darlington" array. No protection circuitry is used. Special "anti-sticking" circuitry—to provide for fast recovery from overload—is incorporated. The amplifier is direct-coupled throughout, using servo-circuits to minimize DC offset. The output stages, as well as the preceding driver stages (also triple-Darlington in configuration), use thermal and dynamic bias tracking to maintain the optimum operating point of each device. All internal point-to-point wiring is oxygen-free copper.

Our samples of the GFA-565 were furnished with the optional balanced-line, common-mode input. A switch is provided to choose between this input (with several levels of gain)

---

1 With apologies to audio firms based in Alaska or Hawaii—are there any?
2 Thus the title to this piece. And you thought it was about Tommy Lasorda.
3 Resistive loads are used for bench tests because they are at least standardized. The "typical" loudspeaker load does not really exist.
and the standard, unbalanced input. At the output end, two sets of five-way binding posts to facilitate bi-wiring are also mounted on the rear panel—though the spacing around the terminals is definitely limited by the flanking heatsinks. You may have to resort to banana plugs rather than spade-type connectors if your loudspeaker cables are stiff and/or heavy. Fuse holders are also mounted on the rear. Our Santa Fe GFA-565s also incorporated the optional, top-mounted cooling fan, which is recommended for use in demanding circumstances (very high power, very low-impedance loads). It apparently only comes on when required—ours never engaged. The amps, in fact, never operated more than slightly warm to the touch during the listening tests. Nor did I ever trigger the Instantaneous Distortion Alert LED located on the front panel, which is designed to indicate total distortions above 1%.

With the power available from the Adcoms (or any other amplifier even approaching it in output), special precautions are needed, most of which are addressed in Adcom's owner's manual. One that may prove problematical is the recommendation that each of the amplifiers in a stereo pair be plugged into a separate circuit in the listening room. Otherwise, Adcom says, the large current draw may result in tripped circuit breakers. If your room is wired so that you can satisfy this requirement, you have no problem. If you don't, and wish to add a pair of these amplifiers to your system, I'd recommend a home trial to insure that they don't generate any private blackouts. You may not—my experience with the Adcoms and other ampere-hungry amplifiers has never resulted in the need to grope around in the dark for the main circuit box. But then, I don't often use my reference system to survey neighborhood opinions on new-age heavy-metal rap music.

**Sumo Andromeda II: $1499:** The two-channel stereo amplifier is still the most typical configuration found in most systems, and the Sumo Andromeda II sticks with that convention. While the monoblock is becoming more popular, there's no free lunch; monoblock design results in higher costs to the manufacturer and thus to the buyer, all else being equal.

The Andromeda II is a pure complementary design using full-wave, balanced bridge circuitry. What this means for the user is that there are no common grounds at the output of the amplifier—meaning that caution must be exercised not to connect the output grounds of the two channels either together or to the system ground. The only current loudspeakers I know of in which this might cause a problem are the Polk SDA designs. Polk does, however, market an isolating device which makes their loudspeakers compatible with the Andromeda. There are also a number of loudspeaker switch boxes which are incompatible with the Sumo for the same reason. Also, since the Andromeda II is already internally bridged, it cannot be bridged externally to turn it into a higher-powered monoblock.

The Sumo is also a balanced differential design throughout, from input to output. But while positive and negative inputs are provided
to make use of this balanced operation, an XLR input is not. In order to make use of the balanced inputs, separate interconnect cables must be run to the positive and negative inputs (using a preamp which provides separate positive and negative output jacks). The amplifier may also be driven single-ended with one pair of interconnects by inserting shorting plugs (provided) into the negative inputs. All of my listening to the Sumo was done in this mode.

Internally, power is fed to the circuitry by a single large transformer having separate secondary taps feeding separate rectifiers and filter capacitors for both the front end and output stages. Four pairs of individually matched, 150W MOSFETs provide the output for each amplifier channel. The rise-times of these devices is said to be 50 nanoseconds (ns). The output stages operate in class-A for the first 12W, reverting to class-AB above that point. These stages are linearized by Sumo's proprietary TL (transconductance linearization) error-correction circuit, which, by means of a pair of matched bipolar transistors, compares the gate and source of the MOSFETs and provides an error-correction signal to the driver stage if required. This TL circuit also provides the bias voltages for the output stage.

A pair of fully complementary differential amplifiers performs as the voltage gain section. All low-level stages are operated in class-A. Overall, Sumo claims that even without feedback (a modest 10dB of overall feedback is actually used), the inherent, open-loop distortion of the Andromeda II is less than 0.2% (power output not specified) with an open-loop bandwidth (3dB down point) of 50kHz.

No protection circuitry or current limiting is used in the Andromeda II, with the exception of the power-supply rail fuses on the rear panel (the owner's manual refers to circuit breakers, which is incorrect).

**Fit and finish**

Both amplifiers are built to good commercial standards. Neither will exactly make you want to replace the top chassis panel with a plexiglass cover—that type of showcase can be had at much higher prices—though the Andromeda II has a slightly neater layout. The latter uses a number of the same push-on internal connectors that Corey Greenberg complained about in his recent review of Sumo's Polaris (Vol. 14 No.4). I noted similar connectors inside the Adcom, though the only visible ones were in the power supply (the output circuit-board connections were hidden from view). While I understand (and to a degree agree with) CG's preference for hard-wired connections in place of these not-too-reassuring-looking terminals, various types of push-on and screw-on fasteners are used in even considerably more expensive amplifiers. They do have the undeniable advantages of simplifying assembly and maintenance.

The Andromeda II's input jacks did not inspire confidence, flexing too much under stress (the flexure was not at the male-female junction, but at the socket-to-chassis point). I never encountered any loss of electrical contact, but was concerned that the weight of typical audiophile cables might cause eventual failure. Sumo informed us shortly before press time that later-production Andromeda IIs now use sturdier input jacks.
My only minor complaint about the cosmetics of either of these amplifiers concerns
the finish on the Sumo, which seems to collect more fingerprints than the FBI. The marks do
come off easily with a soft, damp cloth, however. In compensation, the Andromeda II is
somewhat more elegant, looking less "industrial" than the Adcom.

But none of our readers would (I hope) buy an amplifier for its appearance. What counts is . . .

The sound
Associated equipment used in auditioning both of these amplifiers consisted of the Oracle Del-
phi Mk. IV turntable with SME V tonearm and Dynavector XX-1L cartridge, Sony CDP-X77ES
CD player, Wadia WT-3200 transport and DigiMaster X-64.4 DA converter, and Rowland
Consonance preamplifier. Loudspeakers were the Apogee Stages, B&W 801 Matrix Series 2s,
and Snell C/IVs. Both amplifiers were also briefly auditioned through the Nestorovic Type
5AS Mk.IIIs, and the Sumo through the PSB Status Golds. Interconnects were AudioQuest
Lapis and Cardas Hexlink (the latter from preamplifier to amplifier); loudspeaker cables
were AudioQuest Clear with the Snells, 801s, and PSBs, early Symo with the Stages, and
Cardas Hexlink with the Nestorovics. All loud-
speakers were bi-wired except for the Nesto-
rovics, which are not configured for biwiring. I
did most of my listening to the Adcoms in unbal-
anced mode, since the balanced input is an
extra-cost option and also since it was to be
compared with the Sumo (also used unbal-
anced because it lacks an XLR input for its
balanced mode).

Adcom GFA-565: Clean, solid, secure. Those
were my initial reactions on hearing the Adcom
monoblocks through the Snell C/IV loud-
speakers. There was nothing at all tentative
about the sound of these amplifiers, and there
was no mistaking their power capabilities. Bam!
Zap! Crunch! It was the audio equivalent of an
old "Batman" episode. Only this time, instead of
the Joker, Penguin, and Cat Woman on the
receiving end, it was my loudspeakers. I admit
to a certain degree of intimidation when using
amplifiers of this power capability, but I never
blew out any drivers. A certain amount of cau-
tion and common sense go a long way here, how-
ever. I'm certain I never used more than a
fraction of the GFA-565s' continuous power-
output capabilities, and the loudspeakers cho-

4 Letters. I'll get letters.

FBI. The marks do
come off easily with a soft, damp cloth, how-
ever. In compensation, the Andromeda II is
somewhat more elegant, looking less "industrial" than the Adcom.

But none of our readers would (I hope) buy an amplifier for its appearance. What counts is . . .

The sound
Associated equipment used in auditioning both of these amplifiers consisted of the Oracle Del-
phi Mk. IV turntable with SME V tonearm and Dynavector XX-1L cartridge, Sony CDP-X77ES
CD player, Wadia WT-3200 transport and DigiMaster X-64.4 DA converter, and Rowland
Consonance preamplifier. Loudspeakers were the Apogee Stages, B&W 801 Matrix Series 2s,
and Snell C/IVs. Both amplifiers were also briefly auditioned through the Nestorovic Type
5AS Mk.IIIs, and the Sumo through the PSB Status Golds. Interconnects were AudioQuest
Lapis and Cardas Hexlink (the latter from preamplifier to amplifier); loudspeaker cables
were AudioQuest Clear with the Snells, 801s, and PSBs, early Symo with the Stages, and
Cardas Hexlink with the Nestorovics. All loud-
speakers were bi-wired except for the Nesto-
rovics, which are not configured for biwiring. I
did most of my listening to the Adcoms in unbal-
anced mode, since the balanced input is an
extra-cost option and also since it was to be
compared with the Sumo (also used unbal-
anced because it lacks an XLR input for its
balanced mode).

Adcom GFA-565: Clean, solid, secure. Those
were my initial reactions on hearing the Adcom
monoblocks through the Snell C/IV loud-
speakers. There was nothing at all tentative
about the sound of these amplifiers, and there
was no mistaking their power capabilities. Bam!
Zap! Crunch! It was the audio equivalent of an
old "Batman" episode. Only this time, instead of
the Joker, Penguin, and Cat Woman on the
receiving end, it was my loudspeakers. I admit
to a certain degree of intimidation when using
amplifiers of this power capability, but I never
blew out any drivers. A certain amount of cau-
tion and common sense go a long way here, how-
ever. I'm certain I never used more than a
fraction of the GFA-565s' continuous power-
output capabilities, and the loudspeakers cho-

4 Letters. I'll get letters.

FBI. The marks do
come off easily with a soft, damp cloth, how-
ever. In compensation, the Andromeda II is
somewhat more elegant, looking less "industrial" than the Adcom.

But none of our readers would (I hope) buy an amplifier for its appearance. What counts is . . .

The sound
Associated equipment used in auditioning both of these amplifiers consisted of the Oracle Del-
phi Mk. IV turntable with SME V tonearm and Dynavector XX-1L cartridge, Sony CDP-X77ES
CD player, Wadia WT-3200 transport and DigiMaster X-64.4 DA converter, and Rowland
Consonance preamplifier. Loudspeakers were the Apogee Stages, B&W 801 Matrix Series 2s,
and Snell C/IVs. Both amplifiers were also briefly auditioned through the Nestorovic Type
5AS Mk.IIIs, and the Sumo through the PSB Status Golds. Interconnects were AudioQuest
Lapis and Cardas Hexlink (the latter from preamplifier to amplifier); loudspeaker cables
were AudioQuest Clear with the Snells, 801s, and PSBs, early Symo with the Stages, and
Cardas Hexlink with the Nestorovics. All loud-
speakers were bi-wired except for the Nesto-
rovics, which are not configured for biwiring. I
did most of my listening to the Adcoms in unbal-
anced mode, since the balanced input is an
extra-cost option and also since it was to be
compared with the Sumo (also used unbal-
anced because it lacks an XLR input for its
balanced mode).

Adcom GFA-565: Clean, solid, secure. Those
were my initial reactions on hearing the Adcom
monoblocks through the Snell C/IV loud-
speakers. There was nothing at all tentative
about the sound of these amplifiers, and there
was no mistaking their power capabilities. Bam!
Zap! Crunch! It was the audio equivalent of an
old "Batman" episode. Only this time, instead of
the Joker, Penguin, and Cat Woman on the
receiving end, it was my loudspeakers. I admit
to a certain degree of intimidation when using
amplifiers of this power capability, but I never
blew out any drivers. A certain amount of cau-
tion and common sense go a long way here, how-
ever. I'm certain I never used more than a
fraction of the GFA-565s' continuous power-
output capabilities, and the loudspeakers cho-

4 Letters. I'll get letters.
my compilation for our "Records to Die For" feature in Vol.14 No.1, but its technical quality is not quite up to snuff (London's recordings of Wagner's Ring sound cleaner), nor are all the performances first-rate. But despite the recording's clearly audible overload in spots, intermittent glare on peaks, and its often less-than-liquid top end, the burnished glow of the VPO—particularly the sonority and sheer power of the brass section (listen to the opening chords of the last act, for example)—and Culshaw's striking staging were clearly audible through the Adcoms.

Through the high frequencies, the 565s remained totally clean and unflappable. They were entirely free of zip, tizziness, and any feeling of an analytical, "hi-fi" quality. I did note an occasional brightness in the lower treble, as if the amps were trying to harden up a bit but weren't really able to put much enthusiasm into it.

Although they certainly excel in delivery of clean power, dynamic punch, low-end weight, midrange timbre, and high-frequency ease and smoothness, the Adcom 565s are not entirely successful, in my opinion, in providing the ultimate in top-end detail, overall transparency, and soundstage depth. These limitations weren't immediately apparent—perhaps I was too taken with the Adcom's other, more positive traits. But I became gradually aware that the top end didn't sound totally open; the feeling of an unrestricted, unfettered treble extension was not there. Perhaps this is the back side of that clean, easy treble of which I spoke above. It also may relate to that sometime trace of lower-treble brightness (a subjective reduction in top-octave extension can, paradoxically, sometimes cause a corresponding sensation of emphasis on the region just below it).

Dorian's recording of Pictures at an Exhibition (DOR-90117) has been justly praised for its phenomenal low-frequency response. But it is also notable for its sense of space, air, and depth. The Adcoms certainly did justice to this recording at the low end. But its depth, while reasonably effective, was not totally convincing, and the sense of "air" surrounding the high pipes on this recording was less than fully developed. With this and other recordings, the focus and textures of the soundstage seemed slightly darkened. The effect was not dramatic, but was definitely noticed over time into a variety of loudspeaker loads. It was less of a concern (though still noticeable) with the Snell C/IVs than with the B&W 801s; the latter were just a bit warmer and fuller-sounding than the Snells in my listening room, which reduced mid bass detail enough to further "darken" the overall sound with the Adcoms—something the latter did not need. The Adcoms also displayed a punchy, powerful quality, solid low end, and that same smooth (if slightly softened) extreme top end through the Apogee Stages. But although I never felt any feeling of strain from those loudspeakers at the playback levels used, I did encounter some psychological misgivings: the Adcoms are able to push well over 500W into each of the (3 ohm) Stages. Since the latter can be overloaded with sharp, high-level, low-frequency transients (as can any panel loudspeaker of which I am aware), I'm not sure I feel entirely comfortable recommending this combination. The Stages are such embarrassingly good loudspeakers up to the point where they begin to beg for mercy that you may be tempted to overdo it in driving them with the Adcoms. If you do choose to try the combination, I'd at least advise caution until you explore its limits in your circumstances.

The Adcom GFA-565s turned in a fine performance with all of the test loudspeakers, though I continued to feel that their openness and transparency were a cut or two below the best, and a cut or two below their solid credentials in other respects.

**Sumo Andromeda II:** My evaluation of the Andromeda II got off to a bit of a slow start. If you read my review last month of the Dynavector XX-IL cartridge, you'll have already received something of a preview. Driving the Apogee Stages, with the Dynavector on the front end, resulted in a sound which was rather lean and slightly too crisp. CDs were better balanced, and the Benz Micro MC-3 was even better suited to this particular combination of loudspeaker and amplifier. The latter was, in truth, a lovely combination. But I also know that the Benz measures down somewhat at the top end—not just where your dog might notice, but in the 10-12kHz area. Using a combination
of vinyl and CD (though emphasizing the latter using both of the CD players listed earlier in this report), I gradually began to home-in over the next several weeks on what I felt to be the sonic signature of the Sumo.

It was not to be an easy quest. Switching to the B&W 801s, and back to the Dynavector cartridge (which had been returned to my reference system to allow me to finish its evaluation), the sound was now fuller in the midbass and not at all tipped-up on top. A trace of excess warmth was noted in the upper bass which spilled over into the lower end of male vocals, giving them a bit too much body. This was more of a problem with CD than with LP via the Dynavector cartridge. Things improved noticeably in the midbass when the (considerably more expensive) Wadia CD player/processor was substituted for the one-box Sony CD player. The low end tightened up noticeably, the top end became more open, and the overall focus sharpened up. There was some loss of immediacy in the upper midrange—a particular strength of the Sony player and perhaps (for me) its most appealing quality, but otherwise things were starting to come together.

To see if I could cure what I judged to be still some excess in the mid and upper bass, I switched next to the Snell C/IVs. In my current listening room the latter lacked a bit of the majesty of the 801s and were a bit less forward and "present" in the midband, and perhaps a shade less extended at the very bottom. But the Snells never displayed any obvious shortcomings in low-end extension, and the substitution of the C/IVs for the B&Ws (the latter used, as is my normal practice, without any outboard bass equalization) resulted in no "withdrawal" symptoms. They were, in fact, more open in the midbass than the 801s had been. Here the Andromeda II began to come into its own. The low end sounded powerful and gutsy: the Dorian Pictures was deep and rich. Low-frequency pipes had that shuddering, lusty growl which adds immeasurably to the feeling of realism. The top end was open and airy, with a definite but not overdone sparkle. Though the word "crisp" appears often in my listening notes, it was always used positively. There was nothing hazy or misty about the Sumo's top-end sound. MOSFETs have taken a bit of criticism for allegedly being somewhat veiled at the top. That was not my finding here.

There were, to be certain, times when I felt the top end of the Andromeda II to be just a shade too analytic. This was true more often when I used it with the Apogee Stages, almost never true with the B&W 801s, and an occasional problem—but not a particularly serious one—with the Snells. What did cause me a degree of concern, with all of the loudspeakers, was the Sumo's tendency to sound somewhat lean in the lower midrange. Voices in particular were stripped of some of their natural body. This might sound in conflict with my statement that the Andromeda II's upper bass was slightly full—an observation first made (as related above) with the B&Ws and later confirmed through the Snells. But the thinning was above the upper-bass region. The result was a noticeable reduction in (here comes that phrase again) "palpable presence." It not only affected voices, but appeared to somewhat reduce the overall "oomph" of the sound. The Sumo was clearly a very powerful amplifier, as its bass response indicated. But the "power region," of say, a symphony orchestra lies not in the bass, but in the lower midrange.

I had compared the Andromeda II with the Muse 100 that CG had liked so much in April during my listening sessions with the B&W 801s. The Muse lacked the Sumo's upper-range "air," was a bit flatter in front-to-rear perspective, and could not play as loud without strain. But the Muse bettered the Sumo in handling this "power region." It simply sounded more immediate. And while the Sumo had more punch in the low bass than the Muse, the latter, again through the 801s, was a shade tighter in the mid- and upper bass.

Still, there was no escaping the Andromeda II's clear, open, transparent sound. At its best, I found listening to the Sumo a compelling, involving experience.

Monoblocks or single-chassis: Sumo vs Adcom

In theory, separating the two channels of a stereo amplifier should yield dividends. Interchannel crosstalk will certainly be reduced. Heat buildup will be less due to a (usually) more open, less crowded architecture. Monoblocks can be (but aren't always) of a more practical size. And the amplifiers may be located closer to the loudspeakers. In practice, I have some doubts as to whether these advantages—except for the last—will always be significant. The only way to be certain, of course, is to compare
two *identically* designed amplifiers—identical, that is, except for one being split into two monoblocks, the other being integrated as a one-chassis stereo amplifier. Even then, I suspect the results will differ depending on whether or not we compare modest, cost-efficient designs or all-out assaults on the state of the art. The monoblock configuration should, ironically, benefit lower-cost designs the most—the type of design in which it is least likely to be used.

Neither the GFA-565s nor the Andromeda II are exactly budget amplifiers. But neither are they all-out, price-no-object efforts. Both involve some degree of carefully balanced compromise—though I suspect that their makers will not agree that this compromises the *results*—to keep costs below the audio stratosphere.

They do not sound alike, as what I have written to this point should make clear. I found the Andromeda II to be, overall, the more involving performer. Though not without some reservations: the Adcoms displayed some pretty fancy footwork of their own. On the King’s Singers’ *The Beatles Connection* (EMI CDC 7 49556 2), the GFA-565s were hard to fault. The sound was very clean and sweet—certainly not analytical or in any way bright or artificial. The voices were up-front and very much “there.” The Andromeda II was, in contrast, more laid-back through the midrange, less immediate. But the latter sounded more three-dimensional, with a more “see into” soundstage. Individual voices were easier to hear, massed voices had a more realistic texture and were less homogenized. On Leo Kottke’s *That’s What* CD (Private Music 2008-2-P), the Adcoms came out ahead in more convincingly portraying the timbre of the lower midrange, in presenting properly weighted voices and instruments. Imaging was sharp, and on the two vocal cuts Kottke’s, ah, rather strange voice⁶ was realistically full-bodied and tactile. From the upper midrange and into the highs, however, the Sumo sounded, overall, “faster” and more detailed than the Adcoms, with a more layered, open, and transparent soundstage. The latter was the less “tube-like” of the two amps, though neither is likely to win over die-hard tube lovers. As to low-frequency response, I was rather surprised to find myself leaning, in the end, toward the less powerful, single-chassis Sumo.

On the *Dorian Pictures*, both amps will do a suitable magic-fingers treatment of your backside in the lowest frequencies. But the Sumo appeared to have just a bit more weight and gutsiness in its overall low-end performance. In part this was a function of its more open top end (definitely audible in the presentation of this recording’s ambient space), its more evident overtone structure providing the harmonics which provide focus to even the lowest frequencies. This quality was also apparent on percussive bass. There’s a sharp bass-drum impact near the end of “Pops Hoedown” on Telarc’s *Round-Up* (CD-80141). With the Adcoms, the word “impressive” came quickly to mind as I heard it (over the Snell C/IVs in this case). With the Sumo, I bellowed out an involuntary and quite audible “Yeah!” following the same passage. The actual sonic difference was not *that* dramatic. My reaction was.

But the Sumo is, based on my experience, a bit touchier in the matching department than the Adcom. Though it was at its best through the Snell C/IVs and (in a briefer audition) the Nestorovics, I was never entirely happy with it through the Apogee Stages—especially when used (as already noted) with an analytical cartridge. And I found its low end to be a trace too full through the B&W 801s in my listening room, a fullness at least partially the fault of the loudspeaker/room match (I’ve obtained better results from the B&Ws in prior listening spaces). The Sumo’s revealing, unforgiving, airy but somewhat crisp top end, combined with its slight leanness in the lower midrange, make it, to this listener, the more open, transparent window on the sound. But if you provide it with the wrong combination of associated equipment and program material, it *can* sound less than sweet; even, on occasion, overly analytic.

The Adcoms, on the other hand, except for that occasional tendency to brighten in the lower treble, never showed any rough spots which could not be attributed to the program material. And their sound was somewhat more consistent through the four pairs of loudspeakers used in the evaluation. But, at its best, the Andromeda II soared for me in a way that the Adcoms never quite managed.

**Measurements**

Adcom GFA-565: A look at fig.1 indicates that the Adcom exhibits a virtually flat frequency

---

⁶ Described by Kottke himself as sounding “like goose farts on a foggy day.” —RL
response curve, except at the very top end where it's 0.5dB down at 32kHz. Using the optional balanced inputs, the 0.5dB-down point was slightly lower, at 27kHz. (With a few noted exceptions, all of the measurements were made into the standard, unbalanced inputs.) The small-signal 1kHz squarewave (fig.2) shows a clean, square shape with a fast rise-time. The polarity was non-inverting. The Adcom's input impedance at 1kHz was 47k ohms, and its output impedance was uniformly low—ranging from 0.02 ohms from the bass to the upper midrange and increasing slightly to 0.03 ohms at 20kHz. The gain of the GFA-565 was 27.1dB into the unbalanced inputs. I found that the three gain settings on the balanced inputs—0dB, +4dB, and +6dB—actually gave quite different readings. The +4dB setting was actually 8dB down from the 0dB, the +6dB setting was down 14dB from the 0dB. Unweighted noise was 70dB below 1W into 8 ohms.

THD+noise at 2.83V output (low power) (fig.3, upper trace) was virtually identical at all impedances. Two ohms is shown, and the slight rise at high frequencies was not evident at 4 and 8 ohms. Immediately after preconditioning, with the amp hot, the reading was lower (fig.3, lower trace). The readings appear to be largely noise. Fig.4 shows the same measurement into 8 ohms for the balanced input—the slightly higher value is unusual. The waveform of the distortion in fig.5 indicates a predominantly third-order characteristic overlaid with noise. This was taken at an output of 260W into 4 ohms at 0.003% distortion—any level lower than that and the waveform indicated nothing but noise.

Fig.6 shows the spectrum from a 50Hz sine-wave driven at 66W into 4 ohms. The second harmonic is negligible; the third harmonic is stronger (as expected from fig.5), but still down

---

**Fig.1** Adcom GFA-565, frequency response at 1W into 8 ohms (right channel dashed, 0.5dB/vertical div.)

**Fig.2** Adcom GFA-565, 1kHz squarewave at 0.25W into 8 ohms

**Fig.3** Adcom GFA-565, THD+Noise vs frequency at 4W into 2 ohms (measurement dominated by noise), top trace when amp warm, bottom when hot

**Fig.4** Adcom GFA-565, THD+Noise vs frequency at 1W into 8 ohms, balanced input (measurement dominated by noise)

**Fig.5** Adcom GFA-565, 1kHz waveform at 260W into 4 ohms (top), distortion and noise waveform with fundamental notched out (bottom)
over 80dB. Fig. 7 shows the high-frequency IM spectrum with an equal mix of 19 and 20kHz tones driven at 78W into 4 ohms. The signal source for this test was a test CD played on a NAD 5000 CD player. For reference, fig.8 shows the spectrum of the player’s output, suggesting, perhaps, that the sidebands visible at 18 and 21kHz are slightly accentuated by the Adcom, though they are still at an inconsequential level. Otherwise, no artifacts are present above the measuring system’s noise floor, including the 1kHz difference component.

Fig. 9 indicates the THD is power for 8, 4, and 2 ohms at 1kHz, one channel driven (bottom, middle, and top curves respectively; line voltages of 117V, 115.5V, and 113.5V respectively). The maximum output power at the standard 1% THD level was 322.6W (25.1dBW) into 8 ohms, 564W (24.5dBW) into 4 ohms, and a rather breathtaking 904W (23.5dBW) into 2 ohms. In the case of the GFA-565, the “knees” of the distortion curves in fig.9 fall at 280W (8 ohms), 500W (4 ohms), and 850W (2 ohms)—figures which, in my judgment, define the maximum useful power of the amplifier.

DC offset in the Adcom was under 8mV. It operated quite hot to the touch following its 1-hour, 5% power preconditioning, but suffered no ill effects from the experience.

The Adcom GFA-565’s measured performance was impressive, to say the least, and certainly indicated why it sounded as solid and substantial as it did.

**Sumo Andromeda II:** A more limited spectrum of tests was run on the Sumo than is usually the case because its floating ground requirement was incompatible with some of our test equipment. As can be seen from fig.10, the Andromeda II has only a very slight rolloff at the frequency extremes. There was a slight mismatch in gain between the two channels: an insignificant (in practice) 0.3dB. The 1kHz input impedance measured 42k ohms. The output impedance was below 0.06 ohms up to 1kHz, rising gradually to a maximum of 0.09 at 20kHz. The gain of the amplifier was 27dB. Unweighted noise was 75dB (left channel) below 1W into 8 ohms. Channel separation (fig.11) was less impressive than 1 have measured with a number of other amplifiers, but was still greater than 60dB (except for a small blip at about 130Hz)—more than adequate.

Distortion of the Andromeda II at low power is shown in fig.12, which plots THD+noise against frequency at 2.83V into 8, 4, and 2 ohms. Distortion does increase at higher frequencies, due to the TL circuit not being able to fully linearize the output in this region. The distortion on the right channel was also noticeably higher than that on the left (the curves for the right channel at 8 and 4 ohms are shown dotted in fig.12).
Fig. 10 Sumo Andromeda II, frequency response at 1W into 8 ohms (right channel dashed, 0.5dB/vertical div.)

Fig. 11 Sumo Andromeda II, crosstalk left to right

Fig. 12 Sumo Andromeda II, left-channel THD+Noise vs frequency at 1W into 8 ohms (bottom), 2W into 4 ohms (middle above 3kHz), and 4W into 2 ohms (top above 3kHz) (right channel dashed)

Fig. 13 Sumo Andromeda II, Distortion vs output power, one channel driven, into 8 ohms (bottom curve below 150W) and 4 ohms (top curve below 150W)

driven for more than a second or two into such impedances.

Conclusions

I was favorably impressed by both of these amplifiers. Either one is an attractive alternative to spending megabucks on system power, but neither is really a Krell (or whatever) in sheep's clothing. Although the Adcoms would appear to offer more bang for the buck, and certainly do provide a lot of it for those needing torrents of power on the (relative) cheap, the Sumo Andromeda II is the amplifier that surprised me. It was a bit more idiosyncratic in its matching requirements, but its open, transparent, yet powerful sound finally won me over. While I would certainly put the Adcom on my shopping list if I were looking in this price and power range, I would not make a decision until I had auditioned the Sumo. For this listener, it pushed the right buttons.

Stereophile, June 1991
AudioPrism 8500 Indoor FM Antenna

Bill Sommerwerck

Passive antenna for FM (88–108 MHz); \( \frac{1}{2} \)-wave, vertical phased-array; 8.1dBi gain; four switchable pickup patterns: 3 lobes at 120° spacing, or omnidirectional; 10dB front-to-back ratio; 0, 12, or 18dB resistive attenuation; VSWR < 1.3:1 from 88–108 MHz; 75 ohms; female F-connector output. Accessories supplied: control box; 20' low-loss 75 ohm cable with F connectors; 20' control cable; wall-mounted power supply; 75–300 ohm balun; floor spikes. Cabinet: charcoal coarse-weave fabric on heavy cardboard tube; lacquered or solid-oak end caps. Dimensions: 63" (1.6m) by 12.5" (0.3m). Weight: 24.5 lbs (11.1kg). Serial number: none, pre-production prototype. Prices: solid-oak end caps, $450 (also available at lower cost with black or off-white lacquered end caps). Approximate number of dealers: 450. Manufacturer: AudioPrism, Box 1124, Issaquah, WA 98027. Tel: (206) 392-0399.

AudioPrism makes three FM antennas—the 6500, 7500, and 8500. Each model is larger, has more gain, and costs more than the preceding model. One might assume more money necessarily buys a "better" antenna, and that the flush should rush to buy the 8500. AudioPrism would probably be the first to suggest otherwise.

AudioPrism's product line is unusual because each antenna is optimized for a different set of reception problems, rather than being a scaled-up (or scaled-down) version of another model. The price of each antenna reflects the complexity of its design, not its "quality," or suitability for a particular use. You should match the antenna to your reception conditions, not the size of your wallet.

The middle model (the 7500, reviewed in Vol.12 No.5) is an omnidirectional vertical dipole. If you live in an area of moderate signal strength and low multipath, this model is probably the best choice. (Most FM stations transmit with some vertical polarization for good reception on car radios during peak-drive hours. If your favorite station is one of those rare birds with no vertical output, a vertically polarized antenna may not be a good choice.)

The 6500 (reviewed in Vol.13 No.9) is perhaps the best value in an indoor FM antenna. Though its gain is lower than a folded dipole's, its directionality allows it to reject multipath, which is exactly what's needed in metropolitan areas. Despite its compactness and low cost, it greatly improved the sound of my tuner in an area of notoriously poor reception. An omnidirectional antenna (such as the 7500 or

\[ \text{1 I was so impressed I bought two more 6500s, one for my home office and one for my office office. The improvement in both locations was equally magical.} \]
the Day Sequerra FM Urban) cannot provide this enhancement.

The 8500 tackles a different set of reception problems. Suburban listeners need more gain, and may want to receive stations from several directions. (The Baltimore-Washington corridor is such a suburb; listeners face a wealth of FM offerings assailing them fore and aft.)

The 8500 is therefore three antennas in one. Each has a gain of 8.1dBi and a beam width of about 120°. AudioPrism claims a front-to-back ratio of 10dB, so there is some reduction of multipath or interference from the rear. A compact, wired remote control selects one of the three antennas, or sums their outputs for omnidirectional reception. A three-way toggle switch provides resistive attenuation of 0, 12, or 18dB.

The 8500 is strictly passive; it contains no amplifier. There's a wall-mount power supply, but it's for the relays that select the antenna. When the power is off, the antenna defaults to omni pickup.

**Simple setup**
The 8500 is simple to set up. The one-page instruction sheet is a bagatelle, but if you know how to plug headphones into a jack, you shouldn't have any trouble sorting out the cables and plugging them into the right jacks, sans instructions.

The 8500 comes with three threaded spikes that screw into the base. They stabilize the antenna on carpets, and provide some spacing for the cables to emerge. AudioPrism does not claim the spikes will improve sound quality.

Just so there's no confusion—the 8500 is made from a heavy cardboard tube. That's what it is—I can't bring myself to describe it as a "cellulose-composite cylinder." It's sturdy, too. I knocked it over more than a few times. (If you saw the mess that is my apartment, you'd know why it got knocked over so often.)

**Standard of comparison**
Since I installed the 6500 I've experimented with its location and position to find the best reception in my multipath-ridden suburb. On the east side of Seattle, signal strength is no problem. The problem is severe multipath, which causes distortion, varying degrees of breakup, and an irritating background noise that rises and falls with the music.

My approach is to listen to KING-FM with the treble jacked all the way up and the bass all the way down. This lets me focus on distortion products and noise. If I found a position where they were inaudible (or nearly so), then I knew reception would be OK with the tone controls back at flat.

Much to my delight, I found the best position when I tossed the 6500 on the chair next to my stereo cabinet!* The background noise disappeared in all but the loudest treble passages. Breakup came to an end. I could finally enjoy FM! (Remember, the 6500 is an unamplified antenna only about 9" square, and sells for all of $50.)

**Is the 8500 better?**
In order to justify replacing the 6500 with the 8500, the 8500 had to perform better, not just as well. This is not as easy as the difference in specs might suggest. Although the 8500 has a steerable pickup pattern, the 6500 has an even bigger advantage—it's movable!

I started with the 8500 near the front door and balcony window. Reception wasn't so hot—lots of noise and some distortion. Switching to omni gave the quietest and least-distorted reception, but it still didn't equal the 6500.

I moved the antenna closer to the sofa. The situation reversed: omni pickup was now the worst, with one of the lobed patterns the best. I turned the antenna slightly to find the position that gave the lowest noise. This position just about matched the quality of the 6500. Ah-hah!

UH-uh. As I walked away from the 8500, the noise and distortion rose slightly. No dice.

I wound up moving the 8500 all over the apartment (including into my bedroom), and was unable to find a position that gave as good reception as (let alone better than) the 6500 sitting on the chair. In fact, one of the best positions for the 8500 was in front of the sofa, with me sitting there! Hardly practical—and it ruined the stereo image.4

---

2 Three—three antennas in one! "It's a high-gain antenna!"
"No, it's an omnidirectional antenna." "No, it's a multipath-rejecting antenna!" "Stop! You're all right!"

3 The "I" in dBi means "isotropic"—the same in all directions. A perfectly omnidirectional antenna has an arbitrarily defined gain of 0dBi—that is, no gain. Real-world antennas are not truly omnidirectional, and therefore have some gain. A ¼-wave vertical antenna has a gain of about 1dBi. A ¼-wave folded dipole has a gain of about 3dBi. Gain and directionality go together—the higher the gain, the more directional the antenna.

4 You can't see radio waves, so there's no rational way to place an antenna in a bad-reception area. Sometimes you luck into the best position just by randomly tossing the antenna.
Why?

The fact that rotating the 8500's pickup pattern varied the quality of reception—with the pattern that worked best changing in different parts of the apartment—shows that the 8500 was working exactly the way it was intended to work. The reason it didn't perform as well as the 6500 simply shows that its combination of characteristics were not optimum for my reception area.

The 8500 is vertically polarized, and I suspect the multipath in my area is mostly vertical. Multipath rarely arrives from the rear, where the 8500's sensitivity is down 10dB.6 The 8500 therefore does not reject the right multipath components to clean up the signal. The 6500 is horizontally polarized, and does. (Of course, you can turn the 6500 upright for vertically polarized signals. However, the best reception position for me was with the 6500 horizontal.) The 6500 is also tunable. Although this has no effect on the multipath per se, it does attenuate a lot of junk that would otherwise find its way to the tuner's front end, allowing it to perform at its best.

5 I feel that a small antenna is less susceptible to interaction with metal objects and changes in reception when the listener moves around. The theory is that the small antenna "sees" less of the electromagnetic field in the room. This is roughly akin to the belief of some astronomers that small-aperture telescopes are less bothered by atmospheric turbulence.

6 A 10dB front/back ratio is exceptional for an indoor antenna, but it hardly matches the 15-25dB ratios of the best outdoor antennas. Not to mention beam widths as narrow as 30°.

98.5

If the 8500 wasn't good at rejecting the multipath in my neck of the woods, was there anything it was good at? Could I find a test that would reveal its true mettle? Yup.

Remember that distant station at 98.5 I mentioned in the 6500 review? The 6500 pulled it in weakly, when the BIC Beam box couldn't get it at all.

This seemed a good test of the 8500's gain. The 6500, in its best position for KING-FM, didn't pick up 98.5 at all. My Denon TU-600 easily locked on to it with the 8500, although reception was quite noisy (if clean).

So much for the 8500's gain. How about its directionality? Well, there are stations at adjacent frequencies that interfere with 98.5's reception. They were inaudible with one of the three directional patterns, while the other two stations broke in on 98.5. This clearly shows the 8500 can and does discriminate against stations whose signals arrive from directions other than the main signal's.

Recommendation

This is probably the first time Stereophile has unhesitatingly recommended a product that didn't perform very well. But that's the whole point—the 8500 works exactly as claimed, even though its strong points are of no advantage in my part of town.

The 8500 is highly recommended, in Class A, if it's the appropriate antenna for your reception conditions. Ditto the 6500 and 7500.

KENWOOD L-1000T FM TUNER

Don Scott

Kenwood L1000-T FM tuner

Kenwood and its sister/parent shortwave-famous Trio-Kenwood division probably have more RF experience than any manufacturing group producing consumer receiving equipment. Their latest FM tuner is an all-out effort to produce the "best" and regain a respectable place in the better-home-audio category not held for the past 12 years. This review reveals the manufacturer's aspirations to be fundamentally fulfilled.

The L-1000T's styling departs from the norm with the "Boulder" product look: rounded corners and smooth, rugged appearance. Its cosmetics will appear either attractive or passé, depending on taste. At first glance, the L-1000T seems very basic: power switch on the left, large tuning knob on the right, and small tuning Mode button. However, it is a highly sophisticated digital tuner intended to be primarily operated by remote control. Available remote functions are A/B antenna switching, RF Direct/Distance, 3 IF bandwidths, High/Low scan-stop sensitivity, Mono/Stereo, 20 presets with remote programming buttons, 3 separate Program numbers (stations) that can be selected for turn-on recording with an external timer, tuning Manual/Automatic, tuning up/down, volume up/down, Display Mode (turns off/on all display functions except station frequency), Record Calibrate, display Signal level in dBf (quite accurate), and Active Reception computer on/off. The computerized tuning mode selects all operating parameters correctly—sensitivity, IF bandwidth, and stereo/mono—but does not select A or B antenna automatically. Basically, it operates similarly to the APR (Automatic Precision Reception) system on the Onkyo T-9090.

I was very pleased to find that the tuner could be stepped up/down in the manual tuning mode by remote control, something that can not be done on the T-9090. The L-1000T's only quirks involve 100kHz tuning precision (US stations are spaced 200kHz apart) and the Mode switch on the tuning front panel. The Mode switch selects presets in ascending order or, in the other position, either Auto or Manual tuning, depending on which mode was selected last via the remote. A three-position switch would solve the problem of not being able to tune the tuner manually if left in the "wrong" position and the remote vanished or broke. There is some safety factor in that the remote supplied with the L-1000C control preamplifier contains non-programming, basic tuner-operating functions, including Auto/Manual tuning. The preamp remote also provides basic operation for the matching L-1000D CD player in addition to its own functions. Of course, any overlapping backup assumes purchase of both units. All manuals explaining/describing individual or system operation are well-written and leave little guesswork. All tuner functions are displayed on the front panel in amber, with the exception of the usual red stereo indicator.

The rear panel has A and B smooth F-type 75ohm antenna connectors, and fixed and variable RCA audio outputs. The rear-mounted volume control is manual or motor-driven by the remote-control system, and 'scope outputs for multipath observation are provided. The entire off-grey cabinet is tank-like and the unit weighs 23 pounds, most of this weight contributed by an elaborate, separated power supply that appears adequate to run a 50W power amplifier. Apparently the overkill does no harm and contributes to the tuner's low noise floor.

**RF performance**

The L-1000T uses a large circuit layout and a 6-section front-end, in itself larger than the entire circuitry of most tuners. There is extensive shielding between the tuner subsections and the IF strip to ward off unwanted signals. Whether all this is worthwhile is speculative. For instance, the complete AM/FM section of the finest-performing car radios is rarely larger

---

1 The $1200 L-1000D is a large 16-bit, 4x-over sampling player featuring Kenwood's DAC (Digital Pulse Axis Control) circuitry, said to eliminate jitter by relinearizing the digital signal with the master clock frequency. To do this, a second quartz oscillator is employed to produce a super-accurate clock frequency. This is used to reconvert the output from the over-sampling digital filter in a corrected manner into a digital signal which is accurately time-aligned. Thus, the benefits of digital filtering are maintained and the bitstream fed to the DAC is completely jitter-free. (See JA's "Jitter, Bits, and Sound Quality," Vol. 13 No. 12.) The combined audio results of the rugged transport, vibration damping, and exceptional balanced/unbalanced analog output stages, in my opinion, have produced a contender for one of the best players available.

1 I compared the L-1000D with an Adcom GCD-575, with additional reference to a Theta DSPPro Basic outboard converter. Surprisingly, using the unbalanced RCA outputs from the L-1000D produced the finest audio: more punch, larger soundstage, and overall cleaner, more detailed sound.
than 2" by 1 ¼". Put one of the car boards, a small 12V supply, and an even smaller audio board inside a large home-type tuner box; while no one would be impressed by the appearance, it would work just fine. However, what Kenwood gets with a full, impeccably built box is excellent results which may dispel the smaller-is-okay argument: sensitivity is typical at the high end of the dial (1.8μV/0.31dBf) and decreases slightly at descending tuned frequencies. Tuning is always fastidious; only the desired station is heard at the correct place on the dial, thanks to more than 100dB image rejection.

The tuner handles very strong and weak signals with equal finesse and low distortion. Usable stereo quieting and subjective stereo image width are maintained on all but the weakest stereo signals (below 12μV/26.27dBf) by a sliding high-blend. There is a gray area below 12μV in which signals are too noisy to be listened to in stereo and may have to be manually switched to mono if the tuner does not change state automatically. Unlike many high-blends that slide to full mono with weak signals, Kenwood has chosen the noisier route in order to maintain some stereo whenever possible and not just illuminate the red stereo indicator. My preference is for the user-adjustable blend on the older Kenwood KT-3300D; it allows the user to decide the best tradeoff in noise vs stereo separation. The L-1000T uses three IF bandwidths, each being well chosen and able to produce an "ideal" condition for each received station. While this is a fairly selective tuner, a maximum of 20dB adjacent-channel selectivity is still not enough to avoid splatter from undesired stations. Five tuners with higher adjacent-channel selectivity are the H/K Citation 23, Denon TU-800, Proton AT-670, and Onkyo T-4700 and T-9090. However, none of these tuners have the Kenwood L-1000T's build quality, and all have noisier, weak stereo reception, with the exception of the Schatz-equipped Proton AT-670, still an excellent tuner choice.²

Audio performance
As expected, audio from the fixed outputs had less distortion than the variable outputs. By contrast, the elder Kenwood KT-3300D had its best, very clean audio via its variable outputs, making it ideal to drive power amplifiers directly. And because the rest of the L-series components operate in the balanced mode, there's speculation: if balanced outputs were included on the L-1000T, would the results further enhance the positive findings noted using the existing single-ended audio outputs?

If there is any fault with the fixed audio, it is a brashness between 4-5kHz that can be nearly extinguished by careful interconnect/component hookup and component matching. For instance, the brashness is negligible when using the matching L-1000C preamp or a modified B&K PRO-5 (which I bought because it is transparent enough to judge tuner performance, can switch up to five high-level inputs quickly, and has gentle, inoffensive tone controls). On the flip side, the brashness was enhanced when using an Adcom GFP-555, which in my opinion has the same hardness in the upper midrange—but is otherwise okay. Interconnects on hand that aided in removing most of the brashness were well-seasoned 15m Esoteric Audio "Super Link" enameled Litz CD cables.

Once I found the ideal match with the L-1000T, its transparency was apparent. I had little trouble discerning pops, clicks, rumble, and other clues as to whether a station was playing black vinyl or silver discs. Stereo separation in Wide, with a strong signal over 100μV, approaches the best obtainable. Bass and treble extension were good, and I heard no SCA birdies. In brief, if you have a good station around as a signal source, you won't have to reach for the Rolaisd to listen to this tuner.

Conclusion
After two months of auditioning, I found no circuit drift or changes in operation of the L-1000T, indicating that its rugged construction should offer long-term customer satisfaction. Its nearest competitor is the less costly Onkyo T-9090II ($750, or $850 for the Grand Integra T-G10 version, which has auto A/B antenna switching). In side-by-side comparison, the Onkyo does have about a 10dB selectivity edge over the L-1000T, which may be enough to avoid slight splatter from strong adjacent stations. On the other hand, the L-1000T always sounded slightly cleaner. In fact, I have found myself listening to Kenwood's top-of-the-line tuner for two or three hours at a time. This is a real compliment to the company; reviewers

² The Onkyo T-4700 was reviewed in Vol.13 No.5; Onkyo T-9090II and Denon TU-800, Vol.11 No.5; H/K Citation 23, Vol.10 No.6; Proton AT-670, Vol.13 No.7; Kenwood KT-3300D, Vol.12 No.9.
often find it difficult to listen for enjoyment for long periods without defects interfering with the process. I heard few defects from the L-1000T, except for the stations themselves, and highly recommend it. Of the other L-series components, I can only recommend the extraordinary CD player. The parts are better than the whole, the amplifier being the weak link. I cannot recommend the entire system for the serious music enthusiast.

**FOLLOW UP**

**Audio Research SP9 Mk.II**

**From China With Love:** It’s comforting to assume a certain degree of continuity in life—we make decisions and act on impulses derived from our understanding of process and prediction in the natural world. Repeatability rules. Without it, we would hesitate to take that last step off a ladder or board an airplane. It’s disconcerting, therefore, to think that an innocuous change would cause us to rethink our expectations of that which is and will be. Consider the case of the Audio Research SP9 Mk.II, wherein tubes from one country replace tubes from another. Would this exchange—more importantly, *should* this exchange affect the SP9’s sonic signature? After all, a tube is a tube, right? Wrong, bias breath. The sonic effect of the substitution is, in this case, clearly audible; the implications of that change are as unsettling to me, a reviewer, as they must be for you, the consumer. (As you’ll see, I was forced to completely revise my earlier opinion of this product.)

Imagine a scenario wherein you’ve just gotten comfortable with the sound of your system. You’ve listened carefully to various components, cables, cartridges, etc. and selected those which interact to complement the musical experience. You like what you hear and you’ve gotten involved in the music, perhaps for the first time. You spend days reacquainting yourself with your library of recorded music, rediscovering that which attracted you to the muse in the first place. You’re happy, at peace with yourself and the universe. (If a reviewer, you’ll wax enthusiastic in print over your newly discovered “reference,” or shake your head in dismay.) Then along comes a manufacturer of a component you own (or have reviewed) informing you of a “change” in the product (a good reason for sending in those registration cards you file away with the warranty and instruction manual). In some instances this change may be a major upgrade, such as parts replacement with higher-tech, closer-spec’d ones. In other instances, a complete rebuild of the component is called for. In either case, better sound is always implied, if not actually promised. Understandably, these changes usually involve cash outlays ranging from modest to serious. If the latter, the audio component often ends up in the pages of a publication such as *Audiomart, sans mod.*

Sometimes the change may only be minor, such as substitution of one brand of resistor for another of equal spec with minimal (if any) sonic consequences. Most consumers, I believe, are not interested in this kind of “change.” Thus, manufacturers rarely advise customers of them. (Imagine the confusion and frustration if, whenever a manufacturer had to source parts from a new supplier, this change was advertised! High-end anxiety is elevated enough.) However, sometimes a change snuggles in between these two extremes. Imagine getting a dramatic improvement in the sound of a component merely by replacing two $19.95 tubes. This relatively inexpensive and user-friendly change is encouraged by Audio Research for their SP9 Mk.II preamplifier. Since October 1990, Audio Research has made available to its customers new, Chinese 6DJ8-H vacuum tubes to replace the Russian 6DJ8s installed in preamps built up to a month before. The new, high-transconductance tubes are said to be manufactured “specifically for high-resolution audio reproduction” and can be used in any of ARC’s preamps. My review of an earlier SP9 Mk.II (#60037003) appeared in Vol.13 No.11. It lacked the new tubes, and I judged its performance good but unexceptional. Subsequent to that review, Audio Research sent me a new unit (#80437006) for audition with the new tubes and a request for a follow-up review. Well, you’re reading that follow-up, and have I got good news for all you SP9 owners (or potential owners)!

My initial listening session with this new preamp caused me to go back and reread my orig-

*Stereophile, June 1991*
in review, for what I was hearing did not sound at all like what I wrote about then. For example, the "somewhat reticent" bass and midrange I described has been replaced by strong, focused sound. The sonic character is rich, liquid, and full-bodied. ("Don't Give Up," from Peter Gabriel's 1986 album So, Geffen GHS 24088, illustrated this.) Musical notes, either naturally produced or electronically generated, possessed "personality," a quality I rarely hear in recorded music—I was immediately drawn into the musical experience. In addition, the balance between lows and highs has been improved to the point where it is no longer an issue. The music unfolds with no discontinuity between registers. The "spotlighting" effect is gone, and along with it the tendency for the listener to focus more on the equipment than on the music. The listener is still seated closer to the stage than with some other preamps I've heard, but this perspective is not annoying or unbelievable. It's just different.

I couldn't hear the exaggerated "forwardness" of the earlier unit. Instead, the holographic quality on certain records took me by surprise, equaling the best I've heard. The soundstage had opened up in all dimensions—the "telephoto lens" effect was a thing of the past.

A record I often use to evaluate soundstaging is Mark Isham's Film Music (Windham Hill WH-1041). The industrial noises at the beginning of "Mrs. Soffel" should emerge from a point a considerable distance behind the speakers. The SP9 Mk.II was especially convincing in its rendering of this spatial effect, instantly conveying the plaintive tone of the following music.

The "clear, sparkling highs" remain, but now—I'm at a loss to explain why—they have personality. In fact, "personality" perhaps best describes the sound of the revised SP9 Mk.II. It has a sonic signature, as do all components, yet this signature is benign and does not interfere with the music. It enhances the musical experience by conveying the texture of the music in a way I don't often hear. Instrumental timbres are rendered with authority (on "Mrs. Soffel," I have rarely heard the pennywhistle sound so real or lamentive), and the reproduction of male and female voices is as good as I've heard. I sat spellbound listening to Lou Reed and John Cale on last year's Songs For Drella (Sire 26140-1, Vol.14 No.2). Their presence in the room is so tangible on certain cuts, it's unnerving. "Style It Takes," in particular, raised a large lump in my throat. Thanks, Bob Ludwig, for preserving this masterpiece so effectively!

Dynamics were improved across the board, the music now having more impact and life. It breathed freely, becoming an organic entity, immediately and intimately involving the listener with its seductive sound. Yet this seductiveness was not gained at the expense of transparency. Fine performance details were preserved without the "softness" I had heard earlier (and which tended to cloud the image of the performers and the tangibility of the experience).

I'd characterized the earlier SP9 Mk.II as being "overwhelmingly saccharine"—a quality I'd compared to the taste of a Golden Delicious apple. Forget apples—this preamp sounds like music! With the change of tubes, the gap between the SP14 and SP9 Mk.II has narrowed considerably, and, with the "magic" now contained in the latter, I wouldn't be surprised if its sales threatened those of the former. I should add that the improvement was not unique to the phono section. The line section was exemplary as well. I found myself digging into my CD collection more often than I'd like to admit, thoroughly enjoying the music.

The inevitable comparison with the Counterpoint SA-3000 begged to be made; since it was close at hand, I proceeded with the showdown. As I expected, the sound of the SP9 Mk.II now presented a strong challenge to its similarly priced competitor. The new tubes were working their magic, and it soon became clear that the quality differences I'd heard earlier between the two preamps were no longer there. The Counterpoint had met its match, and then some. Continued listening to all types of music through both preamps confirmed my initial gut-level impression that the SP9 Mk.II (with the Chinese tubes) was now the Counterpoint's equal. I'd be hard pressed to recommend one over the other on strictly sonic terms. The fundamental difference between the two preamps is one of the listener's perspective. If you prefer row E in the concert hall, you'll most likely be swayed in the direction of the SP9 Mk.II. If you favor row J, you'll probably like the Counterpoint. Either preamp will provide excellent sound if properly system-matched.

To sum up, the SP9 Mk.II (like the SP14) excels in conveying an overriding sense of
"musicality" to any signal sent through it. The sound, as a result, is seductive and compelling. It's also non-fatiguing, a quality I appreciate and demand from any component. (I spend a lot of time listening!) My earlier placement of this preamp in Class C must now be changed: I recommend, without any reservations, that the SP9 Mk.II be promoted to a solid placement in Class B.

—Guy Lemcoe

**Wadia 2000 and X-32 digital processors**

During my reviews of digital processors in the past year or so, I've made comparisons with the Wadia 2000 Digital Decoding Computer first reviewed by Arnis Balgalvis in Vol.13 No.1. I've felt that, as good as the 2000 is, other processors—many costing less than the 2000's $8500 price tag—are now superior.

However, a visiting Wadia representative looked inside our sample and used the word "ancient" to describe its circuitry in relation to current production. In addition, I was never able to audition the 2000 with a glass fiber-optical interface, standard equipment on Wadia's transports. Similarly, the $2000 Wadia X-32 had undergone a minor circuit revision, including the inclusion of the glass optical input. Consequently, a follow-up of these two excellent processors seemed in order.

The latest 2000 features the "Rok Lok" circuit that reportedly reduces jitter in the recovered clock. This circuit is described in detail in my Vol.13 No.8 review of the X-32. Our 2000 also benefited from a new analog output stage called the "Sledgehammer," so named for its ability to drive large amounts of current into even low-impedance loads. Other minor revisions were also made, including reducing the number of boxes to three rather than four: The DigiLink 40, which converts an electrical signal into an optical signal, now has an integral power supply. Owners of transports with glass-fiber output can buy the 2000 without the DigiLink 40, eliminating another box from the system and reducing the 2000's price by $950 in the process. With the new 2000 and a Wadia transport, only two boxes are needed (not including the transport). I found the original 2000's four boxes and myriad connecting cables cumbersome, and welcomed the newer version's greater simplicity.

The X-32 has a new, thicker front panel and a much more attractive layout. The unit's original diagonally oriented LEDs have been replaced by recessed LEDs and pushbuttons which make the X-32 much more attractive. The circuit is virtually the same as the one I auditioned, but with one minor software change.

I listened to the two units with the same system described in my reviews in this issue of the Audio Research DACI and Wadia WT-3200 transport. On hand for comparison were the DACI, Theta DSP0 Basic, Proceed PDP 2, and Meridian 203 processors.

Starting with the 2000 driven by the WT-3200's glass fiber-optical output, it was immediately apparent that the glass-fiber-driven 2000 was a great improvement over the older version. I was immediately taken by its soundstage resolution and palpability. The impression of instruments existing in space, each surrounded by a "halo" of air, was stunning. There was a unique three-dimensional quality that transported the listener to the musical event. Instruments existed behind one another in the soundstage without interfering with each other. Each thread in the musical fabric was clearly delineated and seemed somehow unattached to the presentation. When I say unattached, I mean that each instrument or voice was presented as an individual entity rather than just another sound imbedded in the rendering. The 2000's ability to throw precise images within a transparent, three-dimensional soundstage was quite spectacular, and unequaled by any other processor I've heard.

Another hallmark of the Wadia processors is their exceptional bass drive and low-frequency dynamics. The 2000 seemed to add another octave of LF extension, and had a remarkable sense of weight and authority in the midbass. The lower octaves were powerful and effortless, infusing music with drive and energy. Music that relies on bass guitar and kick drum as the rhythmic foundation benefited from the 2000's rendering, seeming to better convey the musicians' energy. The excellent rhythm section on Stevie Ray Vaughan's *In Step* (Epic EK 45024) really came to life through the 2000. Similarly, the 2000 presented the full authority of an orchestra without a sense of effort or strain. Musical climaxes were powerful and dynamic, greatly adding to the musical experience.

The 2000's treble was quite laid-back and gentle, without the forward rendering often heard from digital. Cymbals had a smoothness
that made high-volume, long-term listening possible. There was, however, a slight feeling that the 2000 lacked air and top-octave extension, sounding somewhat confined in the extreme treble. It’s no secret that the 2000 rolls off the treble in the audio band, being down a full 3dB at 20kHz. Is this rolloff audible? You bet. It no doubt accounts for the smooth treble balance and subjective lack of the openness heard through some other processors. Despite knowing that the 2000 departs from accuracy in the top octave, I did prefer its treble rendering on most recordings.

The midrange was quite smooth, with accurate portrayal of instrumental timbres, but I felt the Audio Research DACI and VTL processors were superior in this regard. These two Ultra-Analog-based converters, along with the Stax DAC-X1I, have unparalleled liquidity and natural timbres through the mids. Solo piano, in particular, had a round lushness and more natural presentation through the VTL and Audio Research. Although the VTL has less stage focus and a bass presentation nowhere close to the 2000, it does have a magical quality in rendering analog-like instrumental textures.

The newest Wadia 2000, driven by the glass fiber-optic interface, is superbly musical and in many ways represents the state of the art of digital playback. It is clearly and dramatically improved over the earlier version auditioned, and when driven by a Wadia transport with glass-fiber output, takes another leap up in musicality over earlier production. The 2000, in my opinion, occupies a solid position toward the top end of Class A in Stereophile’s “Recommended Components.”

Moving next to the Wadia X-32, I compared it head-to-head with the Theta DSPro Basic, a processor I concluded to be superior to the X-32 in my original reviews of these two identically priced units. At the time, the X-32 was driven by a coaxial interconnect, not glass-fiber. I used the glass optical connection for most of the auditioning for this “Follow-Up.”

The X-32 has many of the 2000's remarkable qualities, but to a lesser extent. In particular, the X-32's low-frequency presentation was very similar to the 2000, with effortless extension, dynamic impact, and sense of weight. Compared with the DSPro Basic, the X-32 had a more authoritative bass, better conveying music's rhythmic energy. In addition to having slightly better extension, there was a roundness and warmth to the bass that added a nice bloom to the low end. The Basic, however, had more precise pitch definition and tautness. Which presentation I preferred depended on the recording.

The X-32 also had an impressive soundstage, with the ability to throw focused images within a three-dimensional perspective. It didn’t, however, have the stunning depth and feeling of air surrounding instrumental outlines heard through the 2000. This isn’t a criticism, though—no other processor matches the 2000 in this area. Image specificity was superb, with clearly defined instrumental outlines. There was the distinct impression of instruments existing in space between the loudspeakers, discrete from other images. However, despite the improvement in soundstage depth and transparency afforded by the fiber-optic interface, I still give the nod to the Theta DSPro Basic for its better illusion of depth and resolution of hall reverberation. For example, the voice and lute in The English Lute Song (Dorian DOR-90109) seemed to be surrounded by a larger hall through the Basic.

The X-32’s basic tonal character was a little sweeter than I remembered (now driven via glass fiber), but still had a bit of hardness in the lower treble that made it seem slightly bright and forward. It wasn't top-octave tizziness that made cymbals sound like bursts of white noise, but the lower treble where many harmonics are present. There was a trace of glare to instrumental timbres not heard through the 2000 or the Basic. This is my primary criticism of the X-32, but not one that would preclude a recommendation. The unit does so many other things well that I found it always musical and enjoyable.

When driven with a glass fiber-optic signal, the X-32 was sweeter on top, with deeper and fuller bass presentation and increased soundstage depth. Owners of the X-32 should thus audition Wadia’s WT-3200 transport. The addition of a glass input to the newer-production X-32 significantly increased the X-32’s overall musical potential. Even when driven by a coaxial interconnect, the X-32 offered a superbly musical presentation. Considering the recent improvements in digital processors, the Wadia X-32 still holds its own and has earned a continued recommendation.

**Measurements:** I’ll conclude this “Follow-Up” with a few measurements, starting with the
X-32. All measurements made on this sample were virtually identical to those made on the previous sample. The only thing that bothered me was an interchannel amplitude difference of a little over 0.5dB. The left channel was half a dB louder than the right—a factor that could affect imaging—though it wasn’t readily apparent in the auditioning.

The 2000’s measurements are more controversial: it is superbly musical as noted in the auditioning, yet has severe low-level linearity errors. Our original sample (back in December 1989) had the grossest of linearity errors, as seen in fig.7 on p.150 of Vol.13 No.1. The second sample measured for that issue had much better performance, but was still far from ideal. Dick Olsher and I both listened to the original sample and thought it had superb resolution of hall ambience, a quality one wouldn’t expect when information actually recorded at −90dB was being reproduced at about −110dB. This experience called into question the correlation between low-level linearity and a processor’s presentation of hall ambience and other subtle detail. In addition, a question remained about the 2000: Which sample was representative of off-the-line-production?

Repeating all the original measurements on this very latest unit, I found them to be nearly identical, with the exception of—you guessed it—low-level linearity. Fig.1 shows the departure from linearity, the plot ideally being a straight horizontal line across the chart. Looking at the left channel, which was slightly worse than the right, a signal at −90dB is actually reproduced at −96dB. Furthermore, this unit had nearly identical curves for both channels, indicating that they’d most likely been adjusted to this performance rather than the error being random and the result of drift or the adjustment becoming loose in transit.

Looking at the spectral content of the 2000 when reproducing a dithered −90.31dB, 1kHz sinewave (fig.2) is more revealing of what is actually going on in the converter. The 1kHz signal can be seen to reach the −100dB horizontal division, confirming the linearity error. However, right next to it, at 2kHz, there is a spurious signal nearly equal in amplitude to the 1kHz tone recorded on the test disc. This 2kHz component is actually part of the 1kHz signal being shifted up in frequency because the DAC is not monotonic. A monotonic DAC increases its analog output when the input digital code increases, and decreases its output when the input digital code decreases. Some of the “rungs” on the DAC’s resistor ladder can exhibit non-monotonicity, introducing an error when those steps are exercised.

This is apparently what is going on in the 2000. Rather than reproducing the three digital levels (0, +1, −1) that represent the −90dB test signal at the appropriate analog output voltages, the DAC is shifting one of the transition levels in the opposite direction, producing the frequency shift seen in fig.2. This accounts for the oddly shaped linearity plot of fig.1: the 1kHz energy isn’t really missing as apparently indicated, just shifted up an octave. The Audio Precision System One’s bandpass filter ignores
the spurious component when making the linearity measurement.

I repeated the spectrum analysis of the 2000, this time using a -80dB test signal. As can be seen in fig.3, the DAC is much better behaved at this higher level.

A possible explanation for why the 2000 seems to have linearity problems is the method Wadia uses to achieve the high "oversampling" rate. I won't go into the technical description here—it can be found in the X-32 review in Vol.13 No.8—but suffice it to say that each channel uses four DACs. Normally, a DAC has a Most Significant Bit (MSB) trimmer adjustment next to it that allows the value of the MSB to be adjusted so that its value is one quantization step above the combined value of the lower 15 bits (in a 16-bit converter). This assures that, when the code transition from 1111111111111111 to 0000000000000000 occurs, there isn't a disproportionate jump in the analog output signal's amplitude. This code transition occurs at the zero crossing point of the analog signal, where low-level musical information lies.

The 2000, however, uses a single MSB trimmer for all four DACs. Unless the four DACs have virtually identical performance, setting the MSB trimmer will be a compromise at best. I strongly suspect that this is why the 2000 has linearity problems: one or more of the DACs is non-monotonic with the MSB adjustment where it is. Trimming each of the DACs individually would solve the problem.

Having said all that, however, I'm at a loss to explain the fact that the DA converter having the worst measured low-level performance is also the one that, in my experience, also has the finest resolution of such low-level musical detail as spatial cues and hall ambience. Musical performance is always more important than measurements, but it is still worrisome that there seems to be an inverse relationship in the 2000 between what one would intuitively think would have a direct positive correlation: low-level linearity and resolution of hall ambience.

At any rate, I'm not going to let my knowledge of the 2000's linearity interfere with the extraordinarily musical experiences it provides. In addition, this technical analysis and criticism should not discourage anyone from buying a Wadia 2000. The bottom line is that its digital playback is, in many ways, the most musical and enjoyable currently available. When listening to the 2000 and the music begins to flow, I can assure you that the last thing on my mind is monotonicity, MSB trimmers, and code transitions.

—Robert Harley

Lindsay-Geyer 4-40 highly magnetic interconnect

Back in the February issue (Vol.14 No.2, p.158), young Dick Olsher, Stereophile's resident physicist, gave a rave review to interconnect from a new California company, Lindsay-Geyer (585 Manet Terrace, Sunnyvale, CA 94087. Tel: (408) 732-6150.) Their model 4-40 is different from every other interconnect in that it is constructed from a magnetically permeable material, namely "Mu-metal." (Four individually insulated 40-mil strands are used.) Normally such a material is avoided for conducting signals, due to its low conductivity. (The fact that it is permeable means that the current is squeezed into a shallow skin around the circumference, even at audio frequencies, thus increasing its resistivity.) Why, then, would having a permeable conductor be an advantage?

In Dick's review, he paraphrased Lindsay-Geyer's white paper to explain that while the signal's electromagnetic wave propagates along an ordinary conductor at a velocity approaching that of light, "the signal sinks into the wire as an inverse function of frequency (the skin effect). The magnitude of [this current] decreases exponentially with depth of penetration because of ohmic losses. At each frequency, a skin depth may be calculated at which the attenuation is exactly 1dB, or 36.8%. The signal is also retarded in phase as it sinks into the wire because of the finite velocity of propagation [of a current] inside the wire. . . . In copper at 1kHz, the [current] speed is a relatively pedestrian 13m/s. At that speed, a signal will sink through a 1mm wire in 77 microseconds. A 77µs delay should clearly be audible, assuming the magnitude of the delayed signal is significant—which is the case here. The skin depth at 1kHz is 2.1mm in copper, so the magnitude of the re-emergent signal for a 1mm wire is only down about 4dB."

Note that DO is not talking about the EM wave that carries the signal information, but about the associated current at a direction of 90° to the conductor axis. His point is that textbook electronics theory—see Engineering Electromagnetics, by William H. Hayt, McGraw-Hill, pp.398-402, for example—appears to indicate that the initial wave propagating along the
cable will be followed by a delayed version reduced in level due to the attenuated 90° current reemerging after passing through the cable thickness. (Imagine a circle at the cable surface collapsing evenly through the conductor to a point at its center, then re-expanding back to a circle at the surface, all the while diminishing in intensity by a factor of 1/e for every skin depth.) That is, in fact, if the re-emergent current is itself associated with an electromagnetic wavefront. If it is, then although each slice of the conductor will presumably give rise to its own echo, because the speed of the EM wave is so much higher than the current speed, the effect at the end of the cable will still be of a single echo.

"Let's consider what happens to a transient waveform propagating down this 1mm copper wire," continued DO in his review. "Because the waveform is composed of many harmonics and because the 'sinking speed' is a function of frequency, a transient that sinks through the wire will be smeared out in time. The typical [copper] interconnect then propagates the original signal plus a smeared-out copy of that signal. It is possible for the smeared copy to sink through the wire again and generate another smeared copy of itself."

In other words, Lindsay-Geyer claims that using a conventional conductor such as copper will result in progressively attenuated "echoes" smearing the musical information. But by making the conductor permeable—a topology patented by Dr. David Lindsay—the skin depth will be made so small that the delayed current will be totally attenuated, the result being an absence of any such smearing, to the benefit of the music. And DO did find that the L-G interconnect was eminently musical, its sound quality, he wrote, "found on three cornerstones: treble purity, harmonic integrity, and image cohesiveness."

The obvious correlation to draw is that between the L-G's sonic performance and its supposed absence of signal smearing. Or is it? I must point out that I regard all this talk of echoes and transient smearing as conjecture. If such an effect did exist in conventional copper conductors at audio frequencies—at radio frequencies, echoes galore occur every time there is an impedance mismatch between source, cable, and receiver—then surely someone would have noticed! I therefore decided to set up a simple experiment to look for the presence of the Lindsay-Geyer effect.

To hand was not only a 6m length of Lindsay-Geyer interconnect, but 8m of twisted-pair, solid-copper, single-conductor R232 data cable, this having a conductor diameter of 0.6mm, giving an "echo" time of 46µs for a 1kHz signal. I also had available a 5m length of a high-performance commercial interconnect, Audio-Quest Lapis. At 2800pF, the measured capacitance of the L-G cable was much higher than that of either of the other two cables. (The Lapis measured 650pF, the solid-core copper 500pF.)

Cable capacitance will only be a factor if the source driving the cables offers a high output impedance. The frequency at which the system's response is down 3dB can be calculated by the formula \( f = \frac{1}{2\pi\cdot R\cdot C} \) (where \( C \) is in farads, \( R \) in ohms). With a 1k ohm source impedance, typical of the worst case when it comes to high-end tube and solid-state preamplifiers, the response will be down 3dB at 245kHz with Lapis, at 318kHz with solid-core copper, and at 57kHz with Lindsay-Geyer. All of these frequencies are above the audio band, of course, but the L-G is a little close for comfort. With a significantly higher source impedance, such as that offered by a typical passive control unit, the high frequencies will be rolled-off by this length of L-G cable. The Mod Squad's Line Drive, for example, has a maximum output impedance of 2050 ohms with the volume control set at 2 o'clock, which will give a -3dB point at 27.7kHz with L-G, the result being audibly dulled high frequencies.

But echoes and transient smearing are the order of the day's experiment. Lindsay-Geyer's putative time-smearing is frequency-dependent in that low frequencies produce more separated, less attenuated echoes than high frequencies. It would seem appropriate, therefore, to use a single-frequency sinewave which would suffer a discrete echo. However, to look for the presence of such echoes with a sinewave wouldn't be very informative as the human ear-brain is very poor at detecting echoes with continuous waveforms. Audio-frequency echoes would also occur very close to the stimulus waveform, and therefore would be very hard to detect with a 'scope. No, as the ear-brain is superb at detecting echoes with transient stimuli, I would choose pulses as my test signal and assume that though the constituent frequencies in the pulse would suffer varying
delays, an echo effect of the strength suggested by L-G would still make its presence known. I used DRA Labs' MLSSA system to generate repeated unipolar rectangular pulses\(^1\) which I then fed through the cable under test to a Heath 8-bit digital storage 'scope. (Although the MLSSA incorporates a 12-bit 'scope, this has a built-in anti-aliasing filter which could confuse things. It also cannot cope with input peaks that would saturate its ADC.) To capture the pulse shape centered around the 0V axis, I used the 'scope's AC input connection; its input impedance was 1M ohm.

For the first experiment, I used an impulse of some 7V peak amplitude and 19\(\mu\)s length fed to the 'scope via the solid-core copper cable. This can be seen as the top trace in fig.1, which features two such pulses. The impulse tail between the pulses features a degree of noise, probably due to the unshielded cable picking up some RF hash from the computers in Stereophile's lab. Expanding the vertical sensitivity by a factor of 20 gives the lower trace in fig.1. (Ignore the clipped top and bottom of the waveform; this is due to the signal exceeding the ADC's dynamic range capability.) Because the LSB was still toggling a little on this magnified trace, I averaged 32 such samples, so that the noise would fall away, allowing consistent features such as echoes and wrinkles in the wave shape or other such time-smearing artifacts to be made visible. None can be seen, however.

If these echoes do exist, then this measurement indicates they would have to be 64dB or more down from the level of the pulse; ie, at or below the LSB level in the lower trace, which is 4mV.

Fig.2 shows the same traces for the Lindsay-Geyer cable. With the exception of the slightly lower level of noise, they are identical to those in fig.1, with no echoes discernible. Fig.3 shows the same traces for the AudioQuest Lapis. A shielded design, this picks up less noise than

---

\(^1\) The MLSSA signal generator has an output impedance of 75 ohms, so early HF roll off due to the cable capacitance will not be a problem with any of the cables under investigation.
the other two cables, but apart from that, again the traces are identical.

What if this pulse is too short to generate a visible L-G effect, its wideband frequency content resulting in any echo being smeared too much in time? I therefore set up a second series of tests with a longer pulse, approximately 240μs in length and of 10.2V peak amplitude. Fig.4 shows both the complete pulse (top trace) and a 100x-magnified version of the pulse tail (bottom trace) with the solid-core copper cable, while fig.5 shows the same curves for the L-G cable. This time, just in case it was the averaging of multiple traces that was contributing to the lack of visibility of any echoes, I just captured one trace. But note that even if there appear to be artifacts in the pulse tail, I didn’t find these to be repeatable.

Note also that this time, the solid-core copper curves in fig.4 offer significantly less noise overall than the L-G curves in fig.5; DO did note in his review that the L-G cable does seem to be prone to picking up RF noise. Again, there are no obvious echoes. If there are any such echoes in the magnified solid-core copper trace, they would be buried in the noise, which has a peak amplitude of 4mV, some 68dB below the level of the pulse.

But, to be honest, we are digging around at the very limit of the measuring equipment’s resolution here, and it is impossible to say what is real and what is a coincidental noise artifact. I would say that these results, while not disproving the Lindsay-Geyer hypothesis, indicate that any such transient smearing in conventional copper cable is going to be buried in the noise floor with any typical recording.

One point about all three cables used here strikes me, however. All are symmetrical in that the signal and ground are carried on identical conductors. Let us hypothesize that the Lindsay-Geyer effect exists, but that with symmetrical conductors, an equal but opposite echo will be produced in the ground conductor, this canceling that produced in the signal conductor. Isn’t it then possible that the cable’s symmetry is more important than whether or not the conductors are made from a permeable material? A final experiment suggested itself, therefore: to repeat the test with a physically asymmetrical RF coaxial cable, where this hypothetical, screen-generated anti-echo will not be opposite and identical to that produced by the central solid-core conductor.

Fig.6 shows the curves generated by the 'scope with the single unipolar pulse of 19μs duration and 7V peak amplitude applied to 5.1m of coax. (This cable has a 1.1mm-diameter solid-copper central conductor with four ground drain wires and a foil shield 4.5mm in diameter. The 5.1m length had a total measured capacitance of 330pF.) Comparison with figs.1, 2, and 3 shows no discernible difference. With the
longer pulse (fig.7), it is apparent that the shielded cable picks up less RF noise, but the waveshape is fundamentally the same as in figs.4 and 5.

So, what to conclude? Evidence of effects which, if they occur, do so at the LSB level of a digital system, is hardly convincing. Further experiments with test equipment having a greater resolving power are planned, but if the Lindsay-Geyer effect is both so hard to find and so small if it does exist, can it really be subjectively important? —John Atkinson

VTL Reference D/A converter
The VTL Reference D/A converter review in Vol.13 No.12 contained some factual errors concerning the unit’s custom UltraAnalog DAC. Based on incorrect information supplied by the manufacturer, I reported that the D-20400’s internal op-amp had been removed so that gain could be performed with a tube. In fact, the op-amp was never removed: its gain was merely reduced to provide 0.5V output rather than the standard 5V. In addition, although the DAC is custom-made exclusively for VTL, the extent of the modifications is less than first reported.

—Robert Harley

What has David Belles designed into the OCM amplifier that most other amplifier designs have yet to achieve?

Want to know more?
Call 1-800-448-8490
or write:

OCM Technology Inc.
6509 Transit Rd. #H1
Bowmansville NY 14026 (716) 684-0460

Come hear us at the C.E.S.
DM100 Class A Poweramplifier

THE GRYPHON


GRYPHON AUDIO DESIGNS, HERMODSVEJ 3A, 8230 AABYHOEJ DENMARK. TLF.: 45 861151588. FAX: 45 86150533.
Most of Brahms's solo piano music was written either at the beginning or at the end of his life. The Third Piano Sonata, Op. 5, was already virtually complete by the time he introduced himself, with typical humility, to the Schumanns in the Autumn of 1853; he was 20. Their encouragement, and that of Joachim, inspired him to finish the work, especially as the powerful sentiments and accomplished structure of his first two sonatas had so excited the Schumanns. They declared Brahms "the young eagle"; a suggestion that he play for the influential citizens of Leipzig resulted in offers of publication from no less than Breitkopf & Härtel, Senff, and others. Despite Brahms's own virtuosity, Clara Schumann became a dedicated advocate of the young man's works, premiering many of them, including two movements of the Third Sonata in October 1854, and the entire work two months later in Berlin. Her continued devotion to the man and his music, throughout their lives and after Schumann's death, has remained the butt of idle speculation ever since.

The number of recordings of the Third Sonata that have passed through the catalog reflects almost as many interpretative possibilities for the vast emotional spectrum the piece encompasses. As the work of a young man, it bursts with exuberance, passion, and caprice; some performers have taken it at face value and made it a mirror of supreme youthful confidence, reflecting its quicksilver changes of mood with ardent vigor. Others have seen it in the light of Brahms's later piano works and have refined its moods into something altogether more considered. Both views are equally valid and are expressed by some highly convincing technicians. As is so often the case, then, there will be no ultimate recommendation—the choice is highly subjective.

Of the greatest performances that, as yet, remain deleted, those by Cherkassky (recorded live at a concert in London's Queen Elizabeth Hall in 1968), Clifford Curzon (recorded in 1963 and last issued in 1976), and Claudio Arrau (set down for Philips in 1973) are the most deserving of reinstatement. I think it would be fair to say that, in general, these performers present Brahms on the rocks, the raw emotion of his passions jangling the nerve-endings in the way that the forthright young man invites
Boulder Amplifiers

4850 Sterling Dr. Boulder, CO 80301 303-449-8220  Fax 449-4806
when wearing his heart on his sleeve.

Arrau nevertheless succeeds in shaping these elements into a vast, sober architectural monument, creating a characteristically cohesive statement of this massive work. Cherkyssky is poised and well-balanced—until the fourth movement, the Rückblick Intermezzo, in which his erratic rhythm becomes irritating. Strangely, Emmanuel Ax does this too, in a new Sony recording of a performance that is otherwise so incredibly refined and translucent that such a quirk seems atypical (SK 45933, coupled with the three Op.117 Intermezzi). Clifford Curzon favors a clear delineation of line, and is devastatingly nostalgic in the same movement, while taking typically idiosyncratic liberties with tempo and rhythm in lyrical passages.

While awaiting the reappearance of the above, we can, fortunately, indulge in those marvelous performances of the complete piano works that Decca/London, with great foresight, also allowed Julius Katchen to set down in the '60s. They have recently been transferred to CD and made available in an excellent-value 6-CD boxed set (430 053-2, at present unavailable in the US), an offer which those who already possess well-worn copies of the 9-LP boxed set, reissued in 1979 (also at a giveaway price), will have welcomed with great excitement. For those who don't know these performances, the revelation of Katchen's insight into these works is a treat that yet awaits them (despite a brazen recorded sound).

Katchen's view of Sonata 3 is quite remarkable in its coherence and sensitivity. He believed in presenting Brahms warts and all, and I can't help feeling that this reveling in pianistic technique and the headstrong yet unsentimental picture he paints is surely the way Brahms himself would have presented this massive, five-movement, 40-minute-long Sonata. It size demands just pacing and emotional, as well as architectural, balance.

Gerhard Oppitz, in both his 1981 recording for Orfeo (CD 020 821) and his more recent musings (presented in a 5-CD boxed set of all the solo piano works on Eurodisc 69245-2-RG), matches Katchen's dramatic ardency and has something of his authority too, particularly in the opening movement's Allegro maestoso. But he lacks lyrical refinement and is often tonally unimaginative. Both Jonathan Plowright (Kingdom KCLCD 2016, coupled with Opp.76 & 79), winner of the European Piano Compe-
tition in 1989, and Robert Silverman, in an "all-analog vacuum tube recording" made by Stereophile, no less (STPH003-1, -2; see Vol.14 No.2 for a complete rundown on this), are powerful and rhythmically strong. While Plowright brings a menacing quality to the timpani-like triplets of the opening, ultimately it is Silverman who makes the stronger movement with the expressive quality of his dolce expressivo in the development.

Emmanuel Ax combines all these best qualities, in an obviously much-considered reading, with a contrapunhal approach to voicing and texture. He is weighty and compelling in the opening allegro, but to my mind he has modulated the raw emotions of this work to present them in altogether too cultivated a light. Krystian Zimerman has something of the same elegance, but his typical enhancing of light and shade, fortissimo and pianissimo, maestoso and dolce expressivo, offers a more intimate exploration between the pages of this score. His recording may, however, still be difficult to get hold of as he had it withdrawn from sale shortly after its release due to musings over various aspects of the recording (DG 423 401-2, 2-CD boxed set including the 3 Sonatas, 4 Ballades, and e-flat Scherzo, Op.4).

The similarly youthful Zoltan Kocsis (Hungaroton HCD-12601) sets out with great gusto in the outer movements but, by contrast, his slow-movement Andante and its depressive reworking in the Rückblick allow momentum to sag and dissipate their dark introspection. Cyprien Katsaris's vision of the work (Teldec 44255 ZK, coupled with the 2 Rhapsodies Op.79 and the Theme and Variations in d) is remarkably similar but ultimately less successful. Yet he is a master of the keyboard, and his technique is never in question. This cannot be said of Janis Vakarelis (ASV DCA 676, coupled with Op.118), who not only shows up an insufficiency by setting off at speeds he cannot cope with, but who also fails to plumb the depths of this work emotionally and creates an imbalance in its structure by ignoring repeats.

The whole setup for a new recording by Izumi Tateno (Finlandia FACD 391, coupled with the two Op.79 Rhapsodies) seems so singularly inappropriate that it deserves attention: a Japanese pianist playing this big-boned Germanic work on a bright, abrasive Yamaha in a Finnish Hall, the acoustics of which have proved more than the production team have
Engineered Emotion

Hear it! Feel it! A new emotional dimension in music and movies. 500 lbs. of stereo soundfield perfection. 2000 watts of precision power. 19 drivers with 400 sq. in. of radiating area. The components have won 8 major audio awards. These are serious tools for serious listeners. The Shure HTS Theater Reference System shown is the audio purist's approach to Home Theater sound. It costs less than most compact cars, yet has all of the emotional impact to transport you to new worlds of entertainment. Shure's Aera-Vector® pro logic encoding and decoding systems are used by major production facilities. Six years ago Shure introduced the now familiar "Home Theater" concept. Now Shure HTS systems and sub-systems are available in 23 configurations and price levels. They are equally awesome with Dolby® Surround movies, Stereosurround television productions, Surround music, and future HDTV programs. We will send you a wealth of fact-filled material that explains Home Theater, stereo soundfields, and Shure HTS Theater Reference System components. Call 1-800-25 SHURE for the name of your nearest dealer and how to obtain this free information package. Or write: Shure HTS, 222 Hartrey Ave., Evanston, IL 60202-3696.

from SHURE®... the Sound of the Professionals®... Worldwide.

Dolby® Surround is a registered trademark of Dolby Laboratories Licensing Corporation.
Aera-Vector® is a registered trademark of Shure Brothers, Inc.
the expertise to cope with! I would normally be the first to protest that music is an international language that transcends all barriers, but really there is nothing to recommend this recording. Tateno is heavy-handed and sometimes inaccurate, and the recording is so fuzzy that any attempt to point detail was predestined to fail. Other recordings by Idil Biret, Elisabeth Leonskaja, Lorango, Canin, Ohlsson, Kraus, and Parmentier, for example, have also proved insufficiently noteworthy to discuss in detail here, though most are not without some points of interest.

This leaves Artur Rubinstein and Radu Lupu. Rubinstein recorded the Sonata in 1959, when he was already 72, and this has now been transferred to CD as part of The Rubinstein Collection (RCA Red Seal 5672-2-RC, coupled with 4 Ballades, etc.). As might be expected, age had somewhat quenched his ardor by that time, and this is a comfortable reading, lacking in heroics and rather tempering Brahms's impetuous themes with the bonds of his ubiquitous rubato. Only Katchen and Radu Lupu have the sensibility to apply rubato to this work in a totally natural way, and it is Lupu (Decca 417 122-2, coupled with the d-minor Theme & Variations from the Op.18 String Sextet) who also manages to draw the most beautiful and wide-ranging timbre from his instrument; fortunately, this can still be determined despite the age of the original recording. But some may find his lack of urgency in the fiery charges of the Allegro maestoso altogether too leisurely.

Yet few could escape the hypnotic control he exerts in the exquisite Andante espressivo that follows, one of Brahms's most romantic pronouncements and one that, unusually, he requested be headed by its literary inspiration: Der Abend dämmtert, das Mondlicht scheint, Da sind zwei Herzen in Liebe vereint Und halten sich segel umfangen.

—Sternau

(The twilight falls, the moonlight shines / Here are two hearts whom love unites / Locked in a blessed embrace.)

This movement must be passionately involved and yet unsentimental. Ax, Plowright, Oppitz, and Silverman seem to stand aside, are insufficiently rapt to cast any magic. Rubinstein is delicate, Zimerman serene, but Katchen somehow combines tenderness with an urgency that still gives a glimpse of the young man's passion. Lupu exudes an entirely different heat, one more readily felt in such late piano pieces as Opp.117 and 118. No one is quite as spiritual or as revealing of his innermost thoughts as Lupu. Con passione e molto expressivo is just that, and yet in the weird Scherzo (and elsewhere) he also manages to transcend literal translations of the score markings in an entirely convincing manner. The first bar alone is packed with foreboding as he launches us into a demonic waltz, only to usher us into a temporary "oasis of calm" with the Trio. But the return of the Scherzo is disquieting once again and, sure enough, the hallucinatory Intermezzo shatters the comfortable ecstasies of the Andante by transforming its radiant A-flat into a desolate b-flat and its falling thirds, therefore, into something altogether more chilling.

The atmosphere of Ax's Scherzo is charged with the same crazy voltage as Lupu's, but this is dissipated by an almost total lack of concern in the Intermezzo. Katchen is bold and ardent in the Scherzo, pointing his innate timing of the Intermezzo's ebb and flow all the more poignantly. Plowright and Zimerman see the Scherzo as a playful movement; their sense of humor here is as great as Gerhard Oppitz's lack of it. The latter rides roughshod over the Intermezzo too, but without Silverman's sense of authority.

Despite all of this, it is the capricious rondo Finale that really separates the men from the boys in this sonata. It must be seen as one huge, welling climax if it is to provide any sort of satisfactory conclusion to the whole work; immense power and faultless technique are just not enough. Oppitz, Kocsis, and Silverman are excellent: urgent, exhilarating, deft, coherent. But ultimately they lack that spark of individuality to make them truly memorable. Tateno and Plowright lose in the battle against an overpowering acoustic, while Ax sails into harbor in his still-uncathed vessel with the fresh wind of this crystal recording still filling his sails. But to my mind he has been too clinical throughout.

Zimerman and Rubinstein sound as if they just haven't taken this conclusion quite seriously enough, while Lupu is still courageously exploring the poetic qualities and sinister undertones of the piece. For me, it is Katchen who brings the work to a close with the greatest sense of exhilarating release; here is the young eagle taking flight after successfully casting off the shackles of Romantic excess.
MUSIC
and nothing else!

List of all our foreign importers

Austria - Audio Tuning 222630197 • Belgium - Inovor 038300347 • Denmark - 2K Marketing 86151388
Germany - Amarin Electronics 02154-421821 • Greece - Absolute Audio 019952578 • Hongkong - Excel Hifi
5228844 • Italy - Audio Natali 0572725645 • Japan - Nicole Racing 044-511-3322 • Korea - Samjin Enterprise
027194135-6 • Netherlands - Siltech 08819-77400 • Singapore - Elpa AV PTE Ltd. 3368611 • South-
Africa - Audio Imports 011633001 • Spain - Audiosfina 63331156 • Switzerland - Digital Unterhaltung
014631280 • Taiwan - Taifu Corp. Electronics 623419379 • Thailand - K.S. & Sons Co. Ltd 2519981 • U. K.
Absolute Sounds 0819475047 • U. S. A. - Sota Industries (708)759-8737

SILTECH
Edisonweg 8 • 6662 NW Elst • The Netherlands
Tel. 31881977 400 • Fax 31881977 160
GIVE MY REGARDS TO BROADWAY

Remember me to Off-Broadway and the West End, too.

Robert Deutsch reviews recent show music releases

GYPSY: 1989 Broadway Revival Cast
Eric Stern, cond. Jule Styne, music; Stephen Sondheim, lyrics

CITY OF ANGELS: Original Broadway Cast
Gordon Lowry Harrell, cond. Cy Coleman, music; David Zippel, lyrics
CBS C 46067 (LP), CK 46067 (CD). Cy Coleman, Mike Bernikoff, pros.; Mike Farrow, eng. DDD. TT: 59:08

ASPECTS OF LOVE: Original London Cast
Michael Reed, cond. Andrew Lloyd Webber, music; Don Black, Charles Hart, lyrics
Polydor 841 126-2 (2 CDs only). Andrew Lloyd Webber, prod.; Martin Levan, eng. AAD. TT: 2:18:12

MISS SAIGON: Original London Cast
Martin Koch, cond. Claude-Michel Schönberg, music; Richard Maltby, Jr., Alain Boublil, lyrics; Alain Boublil, original French lyrics

CLOSER THAN EVER: Original Off-Broadway Cast
Patrick Scott Brady, piano; Robert Renino, bass. David Shire, music; Richard Maltby, Jr., lyrics
RCA 60399-2-RG (2 CDs only). Jay David Saks, prod.; Paul Goodman, James Nichols, engs. DDD. TT: 1:58:18

BABES IN ARMS: 1989 Studio Cast
New Jersey Symphony, Evans Hall, cond.
New World NW 386-2 (CD only). Elizabeth Ostrow, prod.; Henk Kookstra, eng. DDD. TT: 65:55

HIGHLIGHTS FROM Jekyll & Hyde
Frank Wildhorn, music; Leslie Bricusse, lyrics
RCA 60416-2-RC (CD only). Frank Wildhorn, Karl Richardson, pros.; Lance Phillips, eng. DDD. TT: 51:30

Broadway, plus the inevitable London productions that have either received a Broadway mounting or are about to do so. This flurry of activity in the musical theater has had the expected spinoff in recordings of show music. The present lineup includes recordings of a major Broadway revival, three new Broadway/Off-Broadway shows, a West End hit already booked into a Broadway theater for next season, an “authentic” studio recreation of a Rodgers & Hart classic, and a “concept album” of a score that has just been given a staging in Houston.

For most people (at least those who give a hoot about such things), the important question about the latest revival of Gypsy is whether Tyne Daly’s Rose is any good. Sure, Daly is a gifted dramatic actress with several Emmys to her credit for her role on “Cagney & Lacey,” but she has very little musical theater experience, and, after all, we’re talking Ethel Merman territory here. Well, Daly’s fans can relax: she does not merely pull it off, she positively triumphs! (The night I saw the show, she was given a standing ovation.) While she’s not the vocal phenomenon that Merman was (who is?), she certainly sings well enough, but, more than that, she makes us believe that she is this monstrous-yet-pathetic woman who lives her life through her daughters. It also helps that she has a superb supporting cast, including Jonathan Hadary, whose personal warmth saves Herbie from becoming a nonentity; Crista Moore, who makes the transformation of id/innocent Louise into confident sexy Gypsy Rose Lee quite believable (she’s a good singer, too); and Robert Lambert’s Tulsa, whose “All I Need Is the Girl” has energy and charm to spare. The current Broadway production is directed with great subtlety by Arthur Laurents

I...
AC power line noise is a complex problem requiring multiple solutions. The POWER WEDGE addresses this problem with three complementary technologies: critical damping and suppression, RFI filtering, and intercomponent isolation.

Power amplifiers can require huge doses of AC power during dynamic musical passages. The POWER WEDGE’s high-current outlets allow your amps to meet these demands.

Many source components, especially CD players, are affected by AC polarity. Both POWER WEDGE I and II include a reverse polarity receptacle to facilitate polarity evaluation in your system.

Now in four versions, there is an affordable POWER WEDGE for every audio and video system. Prices start at $239. For more information and the name of your nearest dealer, call or write:

The Mk II Studio One and SuperTower.
The proven performers that have received critical ovations for exceptional dynamics, speed and transparency since their introduction are now even better.

PROAC USA
112 SWANHILL CT
BALTIMORE, MD 21208
301/486-5975
(author of the book); it's one of the few shows worth today's inflated ticket prices. If you can't manage to see the show, the recording is a pretty good substitute. The numbers are introduced with bits of dialogue, enhancing the theatrical feel, and the score (including "Everything's Coming Up Roses," "Together," "Some People," "Let Me Entertain You," "Small World," and, one of my favorites, the plaintive "Little Lamb") has never sounded better. The recording supplements rather than supplants Merman and the original cast (CBS S 32607), but, Angela Lansbury notwithstanding, I prefer it to the London cast (RCA SER 5686, nla).

If it's true that, as one of the strippers in Gypsy claims, "you gotta have a gimmick," then City of Angels has a dandy: we see the movie script of a detective story played out in the author's imagination; we also get to follow the reality of the author's life, and, at critical points, fantasy and reality intertwine. Larry Gelbart's book for City of Angels is structurally clever and full of wish-I-d'd-written-that lines ("Flashbacks are a thing of the past."): it's a show-in for a Tony! David Zippel's lyrics attempt to match Gelbart's cleverness, and generally succeed, although some, like those for the innuendo-laden "Tennis Song," are a bit too obvious (think of all the suggestive ways you could use "play," "match," "score," and, of course, "love"). Which leaves us with the music. (It is a musical, after all.) Cy Coleman has always shown an affinity for writing in a jazz-influenced idiom; City of Angels has an example of almost every jazz/pop genre, including torch song ("With Every Breath I Take"), radio crooner's ballad ("Stay With Me"), bossa nova ("All You Have to Do Is Wait"), close-harmony jazz vocal quartet ("Everybody's Gotta Be Somewhere"), and an infectiously swinging "friendship" number ("You're Nothing Without Me") that brings the house down. Coleman's musical inventiveness keeps the score from sounding like mere pastiche, and the cast features strong singers: Gregg Edelman as Stine, the writer, and James Naughton as Stone, his private-eye alter ego, Kay McLelland and Randy Graff as the four women in their lives (remember, there are two stories being told), and, in a smaller role, Shawn Elliott, sounding much as he did 20-odd years ago when the original cast album of Jacques Brel Is Alive and Well and Living in Paris was recorded. The band has some pretty solid jazz musicians, including trombonist Jim Pugh (of Pugh-Taylor Project fame). Aside from its book, City of Angels doesn't do much to stretch the boundaries of musical theater, but it is a work of real craftsmanship, and the recording has already made it into my often-played-for-sheer-enjoyment— as distinguished from the admired-but-seldom-played—category.

Aspects of Love, currently playing in London and New York, has been variously described as "a dud" (by TheaterWeek's Ken Mandelbaum, an acknowledged Lloyd Webber admirer) and "the most important opera written since the death of Benjamin Britten" (by conductor John McGlinn, responsible for EMI's "authentic" Show Boat and Anything Goes). My own assessment, seeing the show in London last summer, was much closer to Mandelbaum's than McGlinn's: Aspects seemed to have too many theatrical liabilities (a boring, meandering plot, no characters to really care about), and the music, repeated ad nauseam and coupled to the tritest lyrics, was unable to save it.

Listening to the recording of what is virtually the entire show, my reaction is more positive; for one thing, the record allows one to listen only to the highlights rather than the many rehashings of each tune. (The recording does not make this easy, however. The printed material fails to identify the songs by track number; you have to go through the libretto as you listen to each track and note the track number.)J.A.'s favorite composer (just kidding!) has not lost the knack of coming up with memorable tunes, even if they tend to be based on short phrases that never seem to develop as much as one hopes they would. "Love Changes Everything" and "Seeing Is Believing" are obviously intended to be the "hit" songs, and they're pleasant enough (for at least the first dozen or so times we hear them), but my own favorites are "Chanson d'Enfance," "The First Man You Remember," and, especially, "Other Pleasures," a tune of quite surpassing loveliness that in this case is not let down by the lyrics. Kevin Costner performs it with just the right touch of wistfulness. Generally, the cast works hard, even too hard, especially Michael Ball, whose anguish-cry approach to singing appears to be an attempt to generate emotions that are just not there. As a stage production, Aspects simply doesn't work; the record, while not exactly a triumph, is preferable, and recommended at least to Lloyd Webber fans. (I fancy I hear the sound of Reeboks squeaking on pavement. Must be JA sprinting to the record store to get...

1 The Tonys were awarded since this was written; Gelbart won for book, Coleman and Zippel for score, Naughton as leading actor (Edelman was another nominee). Graff as featured actress, the show itself winning Best Musical. Tyne Daly got the Leading Actress in a Musical award. Grand Hotel was the only other new musical to win Tonys, notably for its director/choreographer, Tommy Tune, and the wonderful Michael Jeter as featured actor. My spies (is this how gossip columnists get started?) inform me that PolyGram had an option on recording Grand Hotel, but has passed on it. Although I don't think this score is the "grandest" imaginable, it certainly deserves to be recorded, so I hope some enterprising label picks it up.
What you get out of an audio component depends on what you put into it.

Owning state-of-the-art audio components doesn’t mean very much if the cable you are using can’t deliver the same level of performance.

We’ve gained an enviable reputation and loyal following by producing cables of extraordinary performance and value. Every model we make benefits from the same meticulous engineering and superior materials as our critically acclaimed Maestro series.

We are so confident you will prefer the superior neutrality and honest musicality of ours to other well-regarded cables that we offer an in-home audition program for our Maestro, Rhapsody and Encore lines.*

Visit your Straight Wire dealer to hear how you could be getting more out of every component you own.

*See your dealer for details

STRAIGHT WIRE

The Shortest Path Between You And The Music

1994 HARRISON ST., SUITE 208, HOLLYWOOD, FL 33020, 305/925-2470

For your free copy of our catalogue contact:

MAY AUDIO MARKETING INC.
P.O. Box 1048, Champlain, N.Y. 12919 - Tel.: (518) 298-4434
In Canada (514) 651-5707
his copy.)

Alain Boublil and Claude-Michel Schönberg appeared to have come out of nowhere (if one can refer to France as "nowhere") with *Les Misérables*, probably the musical of the late '80s, and one of the few recent musicals likely to become a classic. The question in many people's minds—mine, anyway—was whether this was a fluke; could they produce another musical that would even approach *Les Miz*? Well, they could, and they have. On the basis of the record, it's apparent that *Miss Saigon* is, as Tom Norton put it, "an incredibly powerful, arresting piece of musical theater," and clearly destined for a long run in London and New York. An East-meets-West story with obvious similarities to *Madama Butterfly*, *Miss Saigon* has a score that is perhaps not quite as striking and bountiful as *Les Miz*, but it still provides a convincing demonstration that Claude-Michel Schönberg is no one-hit wonder. There are marching songs of the sort that might have been used in *Les Miz* ("Bui-Doi"), and with one intriguing Oriental accent ("The Morning of the Dragon"); there are some catchy pop-up-tempo numbers ("The Heat Is On In Saigon," "The American Dream"), and soaring ballads ("The Movie In My Mind," "I Still Believe"). As in *Les Miz*, there are distinct reminders of Puccini ("This Is the Hour"), all right if you like that sort of thing—and I do.

The similarity to *Les Miz* extends to the cast: both Simon Bowman (as Chris, the Lt. Pinkerton of the tale) and, to a lesser extent, Peter Polycarpou (as John, his friend) sound at times as if they're auditioning for Marius; Lea Salonga, who gives a most affecting performance in the central role of Kim, could easily be cast as Eponine. Claire Moore provides a sympathetic and well-sung portrayal of Chris's American wife, and Jonathan Pryce does an appropriately sleazy turn as the Engineer (Thénardier's Vietnamese cousin?). Despite the involvement of Michael Maltby, whose craftsmanship in his collaboration with David Shire is of the highest order, the lyrics have a touch of the translated-from-the-French awkwardness about them (perhaps because they were). *Miss Saigon* is "through-composed," and, by being more sparing in their use of repetition, the authors have managed this format better than Lloyd Webber in *Aspects of Love*. For example, whereas Lloyd Webber introduces "Love Changes Everything" right at the beginning and repeats it umpteen times, making the final reprise quite anticlimactic, "Sun and Moon," the love duet in the first half of *Miss Saigon*, is not reprised until the very end, then—without giving away too much of the plot—to heart-wrenching effect.

Maltby and Shire's *Starting Here, Starting Now* (RCA 2350-2-RG) is one of my favorite recordings; since *Closer Than Ever* is described as a sort of sequel to *Starting Here, Starting Now*, my expectations were high, perhaps too high. Like *Starting Here, Starting Now*, *Closer Than Ever* is a revue of songs about relationships and life, this time from a somewhat older (late-thirty- or early-forty-something) vantage point. Although many of the songs are effective, occasionally touching, I did not find this recording to be as involving overall as its predecessor. The best numbers (eg, "She Loves Me Not," "Miss Bird," "Life Story," "Next Time," "If I Sing," and "Closer Than Ever") evince a seamless union of words and music, each component strong on its own, with the total considerably greater than the sum of the parts. In other numbers, however, the music is simply not very interesting, at times sounding like an extended vamp (eg, "Fandango"), and seems to be there merely to provide underscoring to the (admittedly, very good) lyrics. I feel somewhat disloyal saying this; David Shire's music (from *Starting Here, Starting Now, Baby*, and indeed *Closer Than Ever*) has given me a great deal of pleasure. *Closer Than Ever* has 23 numbers, almost twice as many as the average "book" musical, so that even liberal use of Favorite Track Selection leaves us with quite a few good songs. Richard Muenz, Lynne Wintersteller, Sally Mayes, and Brent Barrett perform them with a fine sense of style. This is not the sort of show whose appeal depends on dancing, costumes, staging, and other visual elements, so the recording loses little to the live performance. The redoubtable Ken Mandelbaum's *TheaterWeek* review of *Closer Than Ever*, comparing it to *Starting Here, Starting Now*, was entitled "Better Than Ever." I wouldn't go quite as far—perhaps "Nearly As Good As Ever."

Sometimes the appeal of a given recording is elusive, and it takes repeated listening to fully appreciate it. Not so for the new recording of *Babes in Arms*; for me, it was love at first hearing. There is, of course, the music itself: "Where or When," "My Funny Valentine," "I Wish I Were in Love Again," "The Lady Is a Tramp," "Johnny One-Note." Nuff said? Then there are the performances: fresh without being idiosyncratic, and all the performers (yes, all) have attractive voices and know how to put a song across. Judy Kaye's "Johnny One-Note" is a show-stopper, pure and simple, of the sort that Merman used to specialize in, but with more
Yakov Aronov
FROM RUSSIA
WITH TUBES

He came to the United States determined to produce state-of-the-art tube electronics, using the best components from two continents and the finest European craftsmanship. Above all, he wanted his tube electronics to achieve new standards in musicality. The dynamics of Mussorgsky, the melodicness of Tchaikovsky and the complexity of Stravinsky... the Aronov amp and preamp reproduce every nuance. You MUST hear this equipment if you love music. Call, write or Fax for information: 7418 Beverly Blvd., Los Angeles, CA 90036 Phone (213) 653-3045 • Fax (213) 937-6905

THE ARONOV AMP
AND PREAMP

Introducing...

ATC
SCM-20

From the Manufacturers of the Finest Studio Monitors

Dealer Inquiries Invited

P.O. Box 698
Burtonsville, MD 20866 U.S.A.

301-989-2551
(Phone and Fax)

Reference
International, Inc.

• Exclusive American Distributor •

Simply
PHYSICS

Audio Toys

...at prices you can afford!

Digitmaker
the ultimate "read only" digital cd drive unit

Byteline 001
the correct digital coaxial interlink cable

Signature Series Phono System
the world's finest analog playback system

Vinyl Vise
premier analog disc clamping system

Isodrive
state of the art cd drive system stabilizing kit

ToneCones
the ultimate conic isolation devices

ConeCouples
the premier vibrational damping pods

Isostand & Maxistand
high rigidity welded steel equipment stands

call or write for our free information package and the name of the dealer near you!

SimplyPhysics, Inc
13158 Veterans Memorial Parkway
Dept B • Houston, TX 77014

713-537-5083 • Fax. 713-537-9618

Dealer, Foreign, & OEM Inquiry Invited

232

Stereophile, June 1991
subtle attention to the lyrics. (What a great Reno Sweeney she'd make! I don't suppose any record company would like to produce another recording of Anything Goes... ) Judy Blazer, sounding at times as if her last name were Garland, sings "My Funny Valentine" and "The Lady Is a Tramp" in a way that makes you forget the myriad pop/jazz versions of these standards. Both Judys possess remarkable vocal technique, enabling them to sing comfortably in "belt" and high soprano registers. Must be frustrating for their competition.

Gregg Edelman (Stin e City of Angels) turns in another topnotch performance, making "Where or When" one of the disc's highlights. Donna Kane, Jason Graae, and Adam Grupper perform their more minor roles as if they were major ones. Throw in Hans Spialek's original 1937 orchestrations, played with a light touch by members of the New Jersey Symphony led by Evans Haile, and you have the definitive recording of this wonderful score. Buy it!

Given the huge success of Phantom of the Opera, it's likely that Jekyll & Hyde is only the first in a succession of gothic romance musicals. (I don't mean to brag, but I've already written a musical based on The Curse of the Were-wolf. The songs include "If I Were a Werewolf," "Howl for Your Supper," "Fangs for the Memory," and the number that I think has a good chance of becoming a chartbuster, "Hait!"") Frank Wildhorn is a name that's new to me; the publicity sheet identifies him as a "master tunsmith" who has written pop hits and is working on three other musicals. Leslie Bricusse has lots of musicals to his credit, having written both music and lyrics, although I've always felt that he's a much better lyricist than composer. (His Sherlock Holmes: The Musical, which I saw in London last summer, has a score that sounds like poorly recycled Lionel Bart.) On the basis of the evidence of Jekyll & Hyde, Wildhorn indeed has a marked facility for writing tunes, and Bricusse has matched the tunes with lyrics that get the job done without calling attention to themselves. (If that sounds like faint praise, it's not meant to be. More than one musical theater enterprise has foun dered on the awkwardness of the lyrics.)

This is a run-it-up-the-flagpole-and-see-if-...

5 Being a "tramp" in Frank Sinatra's version of the song implies sleeping around, and not in boxcars. The original, complete with verses, makes it clear that the lady in question is a free spirit who prefers a hobo-like existence to high society, but, as she puts it, "I'm alone when I lower my lamp." Not really Frankie's type, I'd say.

4 How does the vocal approach differ for a "belt" compared to a soprano role? I asked Judy Kaye this question after a performance of the Santa Fe Opera's production of La Bohème, in which she had played Musetta. She says she tries to use the same bel canto technique for both, but admits to "fudging" the higher "belt" notes, mixing the tone with head voice.

anyone-salutes 'concept album' rather than the recording of a fully developed musical, and all the numbers are sung by Wilkinson and Eder, putting a heavy burden on each performer. Colm Wilkinson's career goes back to the "concept album" of Evita; he was Jean Valjean in the London and the New York Les Miz, and he's currently playing the Phantom in Toronto to great effect. He does not disappoint here, although I thought in some of the numbers he was in less than ideal voice. Linda Eder is a relative newcomer who sounds like a major talent, with a voice that can go from a powerful belt to a floating near-whisper, and she sings with a lot of emotional involvement. The score is heavily pop-oriented (not surprising, given Wildhorn's background), and has several numbers that express sentiments in a generic rather than in the character-and-situation-specific way that distinguishes outstanding musical theater. Still, songs like "Once Upon A Dream," "This Is the Moment," "Someone Like You," "No One Knows Who I Am," and "A New Life" are fairly bursting with tunefulness, and, as far as I'm concerned, no musical can have too much of that commodity. The staging of Jekyll & Hyde in Houston this spring has received mostly excellent reviews, and a Broadway production is said to be in the works. I look forward to hearing a more "theatrical" version of the score; in the meanwhile, this recording serves as a good introduction.

So there you have it: seven show recordings, and not a real loser in the bunch. My personal favorites, in no particular order, are City of Angels, Babes in Arms, and Miss Saigon, but Gypsy is very well done; Aspects of Love has a few quite lovely songs, as does Jekyll & Hyde, and Closer Than Ever is no chopped liver, either. Why not buy them all—the whole set costs less than a pair of those new interconnects you've been eyeing, and, besides, the interconnects will be out in an "improved" version next year.

A word about sound quality. Gypsy and Closer Than Ever were engineered by BMG's Paul Goodman, who, although working in a commercial multimike/multitrack studio environment, consistently manages to create a reasonable auditory facsimile of a live theatrical event on disc. City of Angels, Aspects of Love, and Babes in Arms are nearly as good sonically, but Miss Saigon suffers from an overly close "pop" perspective on voices, and Jekyll & Hyde just sounds synthetic and hyped-up. I was able to compare the LP and CD versions of Gypsy and City of Angels; with my newly installed Aragon D2A doing its, uh, bit, and the CD Stoplighted and Soundringed, differences were small, but overall favored the CD.
HiFi House has been servicing direct mail accounts throughout Pennsylvania for the past 21 years. Our reputation for quality and service earned us national recognition as audio retailer of the year; 1983-84.

We realize there are discriminating ears that know the difference between a blue light special and Threshold's STASIS Power Amps. If you speak the language give us a call for a quote.

Our current top selling home and mobile products are: ADS • Boston • B&W • B&K • Luxman • Nakamichi Onkyo • Altec Lansing • Klipsch • Dual Lexicon • Ortofon • Threshold • Mitsu Sumiko • Rotel • Forte • Optonica Ariston • Velodyne • Stax • Tripplite

**Prices Too Low To Advertise**

HiFi House prices are frequently too low to advertise! All products carry full manufacturers' warranties with service done on premises by HiFi's technicians.

**Expert Custom Installations**

We specialize in commercial installations with references available upon request. Send $3.00 today for our latest flyer and receive $5.00 off your first order over $100.00. For information contact:

366 E. College Avenue, State College, PA 16801

814/237-BUYS (2897)

**Yours for the asking!**

"Here's an informative booklet on FM reception and how to improve on yours."

For your free* copy, call:

**Magnum dynalab**

The FM Specialists

1 • 800 • 448 • 8490

6509 Transit Rd. #H1

Bowmansville, NY 14026

**Apature**

The new name in precision audio cables.
Shirley Horn never makes a mistake, never bores—brilliant. You won’t forget her.

"Demme! The woman has a nest of nightingales in her stomach!" Emma Kirkby and Anthony Rooley.

Of the two symphonies offered here, Marriner’s 9 is the more successful. It takes no great interpretive risks, offers no new insights, but commands respect for its unaffected, straightforward approach. What it lacks, however, is the kinetic force, crack-of-doom intensity, and wide-ranging emotional impact present in the extraordinary accounts of Toscanini, Furtwängler, Wand, Karajan, and Bernstein (his earlier two efforts for DG). And even the somewhat cooler performance of Schmidt-Isserstedt (an exceptional bargain on a budget London CD) offers greater color, detail, and emotional punch.

Marriner is at his best in the driving second movement, where (with both repeats observed) he conveys the music’s demonic edge without resorting (as most conductors today do) to the orchestral doublings originally suggested by Wagner. But the stunning irony of the first movement’s recapitulation is tamed, the cataclysmic intensity of the movement’s pedal-point coda neutralized. The great Adagio, if somewhat understated, has a simple lyric gentleness that proves affecting, and the finale holds

Theoretically, at least, these Philips releases mark Marriner’s completion of a Beethoven cycle. If this sounds equivocal, it’s because his recordings of 1, 2, and 4 are earlier efforts (also for Philips) and have been out of print for some time. With the conductor having recorded the other six scores more recently, it seems likely that remakes of those three earlier efforts are in the works.
"Just Follow the Melody and the Rhythm"

"At Innovative Audio, the wonderfully friendly store in Brooklyn Heights, new customers go through a standard routine. The salesperson doesn't ask the customer to make fine distinctions. The point of the demonstration is to get us to begin listening critically. Innovative is probably the most comfortable place for the new inexperienced customer. Innovative exudes solicitude for customers, even the small buyer, and emphasizes follow-up and service." —David Denby, New York, February 1990

**Innovative Audio Presents**

---

**Mark Levinson**

Musical enjoyment, performance, reliability, durability, beauty, stability, compatibility, value, pride of ownership.

**Our Brands**

Adcom, ADS, Apogee, Bang & Olufsen, Boston Acoustics, B&K, California Audio Labs, Celestion, Conrad-Johnson, CWD, Creek, Dahlquist, Definitive Technology, Denon, Exposure, Klipsch, Klyne, Mark Levinson, Lexicon, Linn Products, Martin-Logan, Mirage, MIT, Monster Cable, NAD, Nakamichi, Optonica, Proceed, Proton, Spectral, Thiel, and more.

**Delivery, Installation and Repair**

We deliver and install throughout the entire region. All service is performed on our fully-equipped on-the-premises lab. Located five minutes from Wall Street. Easy to reach by subway or car. Open seven days a week. Call for our **FREE** brochure. We're in the *NYNEX* Yellow Pages.

---

**Innovative Audio**

77 Clinton Street, Brooklyn Heights, NY 11201

(212) 619-6400 or (718) 596-0888
一起还好。独奏者，如过其R值，可能好。

他说的，很多人都，轮到他们R值

而且在开口之初的alla

马利，玛琳认为贝多芬的指示

力，允许的对变奏和

drum to play with a vulgar mezzoforte。所有

最好，然后，很，好，好，但不

特别知名的表演。

玛琳的7是绝对是完全失败。像他近来的5和8，它似乎不是

的brash, eruptive, vibrant Beethoven。Arcs是

的，能量，是缺失的，和整体

在第一和第二三运动

由于他们重复了观察到的提供

的性能，只是杂乱无章，附近。

唯一在最终做什么，但这样的

解散了整个。在当前的编辑，那些的

儿子，沃纳和，林，常

Wellington's Victory，将撤出的光碟

是相当的更好，但它提供额外的

的细节可能不会满意所有的味道。

的艺术，在其他版本，玛琳认为一个"暗示

的早晨的太阳，"与鸟类

的唱歌和狗 bark。复制的和

的现实，这些效果是，根据

的声部，钦佩于贝多芬。但的音乐，如果一个

，所有的，一个，一个好的，

和可以站在自己的没有额外的

玛琳的风流和明显的感觉

的片制作他的表演的唯一原因

的理由，以获得这个CD。

的两个伦敦的光碟，就到一个结论

索利的第二完全贝多芬的光碟

的目的，将会有他的

在没有影响的情况下，它是不自然的，

的稳定，与色彩，没有压力，

和变化的任何说明的革命

的火，Cracking energy，和大

的现在的一个世纪的grandeur that stamp the great

的 account of Toscanini, Furtwängler, Schmidt

Lissenstedt, Wan, and Karajan (his most recent

DG version)。这是一个，如果索利单纯

向下的是，音乐的强度，的影响

由他的选择于Urtext

的第一运动的coda。与一重复包括在

在那运动，事情变得所有更多的

的风靡。一个可接受的，但不特别

的Egmont是无理由

这CD。

在相反，索利的1和2是非常的

的运动，看起来一个完全的不同的原

的创造力。这些是的，witty

的性能，有足够的重量来提

示需要的姿态。在两个交响乐，

的韵律，节奏，重音，是的。确实

的，不但是一个偶尔的混淆

的（第一运动的2是

一个意外的例子）。这些性能可以

拥有与最好的（托斯卡尼尼，林，维也纳

的账户，沃纳，和，沃尔特）。索利观察到所有出现

的重复在两个作品，而且增加一个

的重复在重新上演的第三运动

。在所有这些的伦敦的CDs，

的声是一个，但被揭发了（在前几

的释放）在强调的下

的中 bowed that gives an inappropiate beeinness to

的音乐，这要求一个学士的声调。

Mortimer H. Frank

BERLIOZ: Te Deum

Keith Lewis, tenor; Matthias Eisenburg, organ; Choirs

from Mainz, Frankfurt, Children's & Youth Choirs of

Hesse Radio; Frankfurt Radio Symphony Orchestra,

Eliahu Inbal

Denon 8175-76142-2 (CD only). Detlev Kittke, eng.;

Yashiharu Kawaguchi, Richard Hauck, prods. DDD. TE:

47:13

Inbal的进展，通过在他们登

的Berlioz cycle has not remained at a consistently excell

的水平，虽然他为他

的音乐，他已成功地通过充分地确定

至至少合格的 Replace recommendation，和经常

的赞美。但这Te Deum打破这一模式

是，由一个鲜明的和

的写作，它也提供了某种程度的

的声场，有稍微

的上弦，各种，Brings the soloist too far forward

in Te ergo quaesumus，而且雇佣

一个器官的声部，在深度的脚踏

的声场，有一鲜明的影响力对于

所以，如果性能会是很好的

我将不抱怨的。

但然而的脚踏。内巴似乎有

决定，认为Requiem的liturgical stable

的mate should be robbed of much of its stately

grandeur by an application of speed and the

pointing up of superficialities。在后者，其中一个

Berlioz的最大的音乐

的"Tibi omnes，" especially at the mysteri

ously ethereal start to each "Sanctus" section;

但美丽地，伴随的swaying woodwind motif is emphasized in a manner which

trivializes what can be a very uplifting experience。对于

tempo, I cannot imagine what possessed him in this respect, for much of

the work is moved along in a breezy fashion quite

out of accord with its proper spirit—especially the "Dignare" and "Judex cresetis."

There is some compensation in the inclusion of the rarely performed "Prelude，" inserted

between "Tibi Omnes" and "Dignare，" and the "March for Presentation of the Colors" at the

end, non-vocal pieces with a purely ceremonial

Stereophile, June 1991 237
Minor Miracle

$995 Apogee at Stereo Exchange

The Centaurus "Minor" is the only Apogee you can buy for under $1,000 a pair. It is the most recent of Apogee's new critically acclaimed hybrid ribbon Centaurus Series. And wonderful sound is only one of the design breakthroughs achieved in the Centaurus series which include.

† The ability to place speakers closer to the wall
† Higher efficiency
† Wide, stable soundstage
† Seamless merging through acoustic centering of drivers and advanced crossover techniques
† Narrow footprint

Come in and hear the Centaurus Series, from $995—$3,795

AMERICA'S LARGEST AUDIOPHILE STORE

STEREO EXCHANGE
the BLOCK-LONG store

Authorized Dealerships:
Audio Research Corp., Apogee, Arcam (#1 U.S. Dealer), Audioquest, B&K (#1 N.Y.C. Dealer), B&W (#1 N.Y.C. Matrix Dealer), California Audio Labs (#1 E. Coast Dealer), Carver, Celestion SL, Conrad-Johnson (#1 U.S. Dealer), Counterpoint, CWD, Grado, Infinity, Kimber Kable, Luxman (#1 N.Y.C. Dealer), Magnat Dynalab (#1 E. Coast Dealer), Micromega, MIT, Mod Squad (#1 E. Coast Dealer), Monster, NAD, Nitty-Gritty, ProAc (#1 N.Y.C. Dealer), Quad, Revolver, Rogers (#1 U.S. Dealer), Roksan, Rotel, SME, Snell, Sony ES, Sota, Spica (#1 E. Coast Dealer), Stax, Straight Wire (#1 U.S. Dealer), Sumiko, Target (#1 U.S. Dealer), Threshold & Forte (#1 N.Y.C. Dealer), Tice (#1 U.S. Dealer), Van Den Hul, VPI (#1 U.S. Dealer), Velodyne, Wadia (#1 U.S. Dealer), Well Tempered, Yamaha, etc.

LUCASFILM THX HOME THEATER, Lexicon, Proton, Vidikon projection TV, Fosgate, Tera TV

Open 7 days a week—Mon.-Fri., 11:30-7 pm, Sat., 10:30-7 pm, Sun., 12-7 pm
627 Broadway, Greenwich Village, (bet. Bleecker & Houston St.) NY 10012
(212) 505-1111 (800) 833-0071 outside NYC Fax (212) 995-5524 Major Credit Cards
function which don't represent Berlioz at his best. But it's interesting to hear the big body of harps in the March (the score calls for 12) and to note an apparent increase in reverberation during this purely instrumental music. Was this due to the absence of absorptive singers during those sessions? And the two extra pieces do at least give us another 6:39 of music to offset the mere 40:34 taken for the traditional six movements. The latter span some 6m more than this under Abbado, and over 11m more under Davis. Phillips's aging recording of Davis's splendid performance lacks dynamic sparkle, but Abbado's DG version is fine, and easily survives this newcomer as my recommended CD version of the Te Deum.

—John Crabbe

BRAHMS: Symphony 2, Haydn Variations
Wolfgang Sawallisch, London Philharmonic
Angel 7 54049 2 (CD only). Mark Vigars, eng.; John Fraser, prod. DDD. TT: 58:45

BRAHMS: Symphony 4, Tragic Overture
Wolfgang Sawallisch, London Philharmonic
Angel 7 54060 2 (CD only). Mark Vigars, eng.; John Fraser, prod. DDD. TT: 54:35

BRAHMS: Symphony 4
Sir Colin Davis, Bayreuth Radio Orchestra

BRAHMS: Symphony 1
Günther Wand, Chicago Symphony Orchestra

Here are four releases superficially similar in their approach to this repertory, but only those featuring Sawallisch (the newly appointed Director of the Philadelphia Orchestra) seem successful. His new recordings of 2 and 4 probably mark the start of a new Brahms cycle, one that could well rank with the best. Sawallisch's view of the composer may not, to be sure, please all tastes. He favors relatively broad tempos that stretch the music to its limits. Certainly his breadth in both slow movements may strike some ears as being dangerously close to sentimental. But the conductor's musicianship makes a compelling case for his preference, with a clarification of often-buried counter-melodies providing a compensatory enlivening of its own. Interestingly, too, Sawallisch, unlike many conductors, does not accelerate in the stormy middle section of the slow movement of 2, thereby suggesting how the passage is redolent of the sea that Brahms loved and lived close to at the time of the music's composition.

But if Sawallisch knows when to maintain a tight rein, he is never rhythmically rigid, his use of rubato being quite liberal yet tempered by a prevailing taste that recognizes that "robbed time" must be repaid in order to preserve a basic pulse. As a result, these performances emerge with a welcome integrity and power, climaxes carefully gauged to grow naturally out of what has preceded. Especially impressive in this regard is the coda of the finale of 2, where the theme of the movement's second subject, which first appears as a gentle, almost shy lyrical utterance, returns transformed into a proud, potent peroration, an effect fully conveyed by Sawallisch's refusal to fall into the trap of permitting the music to race ahead. Instead, his firmly maintained tempo lends the close a climactic force typical of the Toscanini edition. Similarly, the first-movement coda of 4 gains in intensity and power as a result of Sawallisch's holding to the unhurried pace he has established, the final measures having an impact absent from most other editions.

A few flaws prevent these readings from being ideal. For one thing, the London Philharmonic, though a good ensemble, is not quite world-class, a shortcoming most apparent in its relatively colorless brass. Then, too, there are in 4 a few passages of less-than-perfect chording, and the finale of the work is compromised by Sawallisch's failure to hold to a steady pace throughout. On balance, however, these shortcomings are easily outweighed by the rich expressivity of his direction. For those favoring a broad, majestic Brahms, these are preferred editions that can take their place beside the splendid (and somewhat different) accounts of 2 and 4 led by Toscanini, Dohnányi, Wand, and Karajan (his 1977 and '82 editions); of 2 led by Klemperer; and 4 led by Boult (his Angel version) and Walter (a slow but musical reading and the last and finest of this conductor's three recordings of the work).

The fillers for the Sawallisch discs comprise a mixed bag. The Tragic Overture receives as fine an account of the work as I know: taut, lean, broadly paced, yet fiercely grim in its bracing accents and slashing attacks. On the other hand, the Haydn Variations are lacking dramatic contrast and are expansive to the point of sometimes going limp. EMI's recording is consistent in all four works: wide in dynamic range, relatively close, yet free of harshness, if without the depth and dimension typical of today's best engineering. Sawallisch wisely omits the repeat in the first movement of 2.

Davis's 4—in its generally broad tempos, occasional rhythmic freedom, and not-quite-world-class orchestra—shares traits with Sawallisch's. And there are moments when Davis produces some beautiful effects that Sawallisch does not match, in particular uncommonly expressive phrasing of the first movement's opening theme. But several liabilities work against this release. Whereas Sawallisch's rhythmic adjustments sound spontaneous and nat-

Stereophile, June 1991

239
Monstrous savings on Monster Cable cartridges!

Save 50% off the old retail prices. You can buy for less than dealers used to pay!

Analog is alive and well at Audio Advisor. Monster Cable has just appointed Audio Advisor the exclusive world-wide distributor for Monster Cable moving coil (0.3mV output) cartridges. Now you can own an Alpha Genesis 1000-II or Sigma Genesis 2000 for less than the prices dealers used to pay.

Most audiophiles couldn't afford analog like this...until now!

Critics loved these cartridges at twice the price. Stereophile's Recommended Components (Vol 13, No. 10, October 1990) says the Alpha Genesis 1000-II "is almost as sweet in the top five octaves as the Koetsu Red Signature [$1950] but more detailed." Anthony H. Cordesman declared in Vol. 10, No. 5, August 1987, "No cartridge I have heard at any price is convincingly better in terms of overall performance." The Alpha Genesis 1000-II was $800, now only $399.95.

For at least once in your life...

...you deserve a great cartridge. Good as the AG1000-II is, Monster's Sigma Genesis 2000 is even better. The Sigma Genesis 2000 is smoother, more open, more detailed and dynamic. The secret lies in the 99.999999% pure copper and 100% quality control. Every cartridge is closely auditioned before it leaves the factory. Is this the best cartridge in the world? Let the critics argue. Meanwhile, this is the only one of the world's great cartridges you can get at 50% off its former retail price. Was $1,200, now $599.95.

Listen for 30 days at no risk.

All cartridges are guaranteed new and factory-sealed. Listen for 30 days. If either cartridge isn't the best you've ever owned, we'll refund your money. Not sold in stores—not at these prices! Add $5.95 shipping in the US, $9.95 in Canada, and $19.95 elsewhere in the world. Hurry, these are hand-built cartridges, only so many can be produced. Order now, avoid a wait!

CALL 1-800-942-0220 TOLL-FREE!
American Express, MasterCard, Discover and VISA accepted.
225 Oakes, SW Grand Rapids, MI 49503  616-451-3868 FAX 616-451-0709
ural, Davis's seem forced and artificial, often to the point of breaking continuity. Then, too, in the apparent interest of "expression," Davis imposes arbitrary accents and dynamic gradations that are at best clumsy and, from a conductor of his usual good taste, most atypical. Somehow it seems that he is simply not that comfortable with this music, and although his performance is certainly not bad, it is no match for the best. Furthermore, lacking a filler, the release is, at full price, rather expensive.

So, too, is the new RCA production of 1 led by Wand, which is inferior to his 1982 account available on a mid-price RCA CD. The major problem with this new full-price edition (drawn from concert performances that took place on three days in January 1989) is its heavy-handedness. Wand's earlier reading is, of course, also expansive, but enlivened by stronger accents and a sharper profile. Although the CSO is clearly superior to the Cologne Radio Symphony of Wand's earlier version, the prevalent plodding pace of this new performance neutralizes the music's inherent tension and makes it sound overblown and pompous. Only in the driving introduction to the first movement does Wand echo the vigor of his older effort, which remains one of the best among a large group of recordings featuring very few distinguished performances of this warhorse.

—Mortimer H. Frank

COPLAND: Symphony 3, Music for a Great City
Leonard Slatkin, St. Louis Symphony
RCA 60149-2-CD (CD only). William Hoekstra, eng.; Joanne Nickrenz, prod. DDD. TT: 67:14

Word is that when Slatkin/St. Louis changed their contractual affiliation from EMI to RCA and took their American music project along with them, one of Slatkin's conditions was that Copland's Third be foremost in the order of business. It's understandable. The work is one of the signature pieces of America's most signature composer, probably not the least of which could be explained by Copland's incorporation of his earlier Fanfare for the Common Man into 3's thematic framework. The mainstream public may remain nonplussed at Copland's early astringencies, as well as his later ones, but they've more than caught up with his "accessible" (I hate that word) middle period, of which Symphony 3 may be considered the capstone.

If there's a problem with Copland 3, it may be the work's nearly incredible qualities of wholesome optimism, undisturbed even by the bone-crunching crises in the two outer movements. It's almost like Norman Rockwell set to music, America in all its goodness and niceness, with nary a hint of a darker side.

One can write off Mata/Dallas on EMI as a pompous Brucknerization. It's unfortunate that Copland's own Everest recording with the LSO has been blunted beyond recognition by NoNoise on Philips. Copland's other recording, with the New Philharmonia for CBS, will be reissued by Sony later in 1991. The first-ever recording, by Dorati/Minneapolis for Mercury, being mono, lies further off in Mercury's reissue plans.

The Telarc recording by Levi/Atlanta would seem to be a serious contender. Its audio qualities are of breakthrough caliber, and the performance is largely sturdy and honest. However, Levi falls into the hyperbole trap with a ludicrous overstatement of the scherzo coda, which makes the Finale, with its famous Fanfare and perorations, seem anticlimactic. If couplings are a consideration, Levi doesn't seem to have a clue as to what Music for the Theatre is all about.

In many respects, Slatkin/St. Louis have given us a viable alternative to Bernstein/NYPO on DG. St. Louis lacks the brawny power which the NYPO brings to the piece, and Slatkin, to his credit, does not attempt to ape the overstated epic grandeur which Bernstein, as only he could have, drew from his aggregate of "hunky brutes." Bernstein never faked an emotion he didn't feel, but not every listener wishes to experience music at such heightened emotional levels. The Slatkin performance, if less "inspired," seems highly motivated, and the music is allowed to speak for itself. As such, the piece reveals its high qualities of craftsmanship and formal integrity. Fans of the more cerebral Copland should be able to enjoy this performance without embarrassment.

Music for a Great City is a recycled film score drawn from the 1961 thriller Something Wild. To my knowledge, this film is not currently in circulation. Although it would be interesting to view in retrospect, my recollection is that it was hardly more than second-rate entertainment, unworthy of Copland's talents, and that Copland's music was insufficient to raise the film to a higher level, as a good score may often do for a marginal film.

My recollection of Copland's own recording for CBS with the LSO is insufficient for comment. This new recording by Slatkin/St. Louis speaks very well for the work, a four-movement suite with descriptive urban titles (the "Great City" of the title is none other than New York). The composition is nearly contemporaneous with Bernstein's West Side Story, and just as it is impossible to hear Bernstein without hearing some Copland, it is impossible to hear the Latin music in Great City without hearing West Side Story.
Linn Selekt Records

For twenty years hi-fi enthusiasts around the world have associated the name Linn with the ultimate in turntables, the Linn Sondek LP12. Most, because of their love of music, have continued to embrace the vinyl LP as one of their primary sources of music.

As a service to those that share Linn's appreciation for the vinyl LP, Linn Selekt Records was formed. Linn, armed with orders from their distributors world-wide, has been able to convince major European and U.S. record companies to do special, one-time production runs exclusively for Linn. Prior to production, Linn evaluates sample pressings and makes any changes necessary to achieve the level of quality they demand. (Sometimes this even includes cutting entirely new masters.) Given Linn's years of experience in cutting records, you can be assured that these albums will match or exceed the quality you would expect from the original pressings.

The titles from the first two batches are listed below. Please note that our allocation for the U.S. is only 1000 of each title. When those are gone, there will be no more. The "A" series, released earlier this year, is nearly sold out. We have just started shipping from the second, or "B" series. Titles for the third series will be announced in a few weeks.

A-1 ALPHA BLONDY & THE WAILERS - Jerusalem
A-2 SOLOMON BURKE - A Change is Gonna Come
A-3 ELVIS COSTELLO - Armed Forces
A-4 THE PENTANGLE - Basket of Light
A-5 NANCY GRIFFITH - The Last of the True Believers
A-6 STEVE PHILLIPS - Steel Rail Blues
A-7 MILCHO LEVIEV QUARTET - Blues for the Fisherman
A-8 THEA KING/ALLEGRI STRING QUARTET - Crussell Clarinet Quartets
A-9 GOTHIC VOICES CHOIR - Hildegard's A Feather on the Breath of God
A-10 FAIRFIELD QUARTET - Debussy and Ravel String Quartets

B-1 T-BONE BURNETT - Proof Through the Night
B-2 J B LENOIR - Alabama Blues!
B-3 JOHNNY ADAMS - Room with a View of the Blues
B-4 BOBBY KING, TERRY EVANS - Live and Let Live!
B-5 JOHN COLTRANE QUARTET - Ballads
B-6 OSLO PHILHARMONIC - Tchaikovsky Manfred Symphony
B-7 THE MUSICIANS OF SWANNE ALLEY - In the Streets and Theatres of London
B-8 PHILHARMONIA BAROQUE ORCHESTRA - Corelli, Concerti Grossi Op.6
B-9 PHILHARMONIA BAROQUE ORCHESTRA - Handel, Water Music
B-10 PAUL O'DETTE - Kapsberger, Il Tedesco della Torba, Pieces for Lute

Linn Selekt Albums are $15 each and are available from any Linn Hi-Fi Dealer or directly from Audiophile Systems, Ltd., 8709 Castle Park Drive, Indianapolis, Indiana 46256. (Direct orders may be placed by mail or phoned into our order desk at 1-800-327-5843. Please note, there is a $5 charge for shipping and insurance on direct orders. We accept Visa, MasterCard, Checks, Money Orders, or we can ship COD.)

If you would like more detailed descriptions of these albums or wish to be on our mailing list for future releases, just call 1-800-327-5843 and ask for the FREE Linn Selekt Information Packet.
The Hoekstra/Nikrenz team has produced all of this with great skill and honesty to the sound of the orchestra and the character of St. Louis’s Powell Hall. Moreover, their work seems unspoiled by post-production.

—Richard Schneider

DOWLAND: The English Orpheus
Emma Kirkby, soprano; Anthony Rooley, lute, orpharion
Virgin Classics VC 7 90768-2 (CD only). Nicholas Parker, prod.; Tim Handley, eng. DDD. TT: 57:39

It’s good that, 14 years after Kirkby and Rooley (with the Consort of Musicke) first set down the complete works of Dowland on record for Decca Florilegium, we can simply talk about performances of this music as though it were Bach, Schubert, or whomever. There is no longer a need to apologize for Dowland and his contemporaries as though what they wrote was not “real” music. Make no mistake, there was no more perfect master of craft in any period than John Dowland. Like the sonnets of Shakespeare or the miniatures of Hilliard, his songs are, within the compass of their intentions, absolutely perfect. The new musical consciousness that has evolved over the last two decades enables us to consider these works for what they are: masterpieces to stand for all time.

Of Emma Kirkby’s singing, I can only echo John Milsom of Gramophone, who quoted the Earl of Sandwich as saying, “The woman has a nest of nightingales in her stomach!” I have always admired (to the point of adulation) Kirkby’s purity of tone, absolute security of pitch, and fluidity of line; comparing this performance with her 1976 recording, I can only marvel at how much she’s improved. The most common criticism of those early performances (voiced by myself among others) was that, if anything, they were a bit too coldly perfect and unemotional. These comments are now, as the White House might say, inoperative. Her voice has grown warmer and richer, her sense of dynamics is stronger, and her emotional connection to the music is now undeniable. There simply is no finer living interpreter of Dowland; if you want a recording of that composer, this is it.

Anthony Rooley has been Ms. Kirkby’s partner for many a record and recital; this experience is obvious here. Rooley too has improved over the years, and his greater presence is welcome in contrast to his past reticence. His solos are beautifully played, and his choice of the orpharion (a wire-strung relative of the lute) is an inspired one; it makes a lovely sound indeed, both solo and behind the singer.

Nicholas Parker and Tim Handley have done their homework as well as the performers; Forde Abbey has never sounded better, even if no one seems to know whether it’s in Dorset or Somerset. Location notwithstanding, this is a disc that any admirer of Dowland or Kirkby must have. If you don’t fit either of those descriptions, one hearing will insure that, henceforth, you will.

—Les Berkley

HANDEL: Arias for Montagnana
David Thomas, bass; Philharmonia Baroque Orchestra, Nicholas McGegan, dir.
Harmonia Mundi 907016 (CD only, alas). Robina Young, prod.; Peter McGrath, eng. AAD. TT: 67:40

Whatever virtues the composers of the late Baroque might have had, kindness to their singers was not one of them. Although Handelian roles do not destroy voices as Wagnerian singing does, they do require a degree of virtuosity that can be equally cruel to lesser performers. Performers of 19th-century works can often disguise weaknesses with showmanship; Handel’s writing, with its huge leaps and florid ornamentation, leaves every flaw in technique clearly visible.

For this follow-up to the highly successful Arias for Senesino (Vol.11 No.6), Nicholas McGegan and his crew have called on well-known early-music singer David Thomas to recreate some of the famous arias written by Handel for his leading bass of the 1732–33 season, Antonio Montagnana. Some critics have called Thomas a “bass-baritone”; this is both unkind and inaccurate. It is true that Thomas does not have the dark tone of a Wagnerian bass, but in all other respects he is a true basso, with a prodigious range (greater than Montagnana’s) and a flair for Baroque ornamentation that many a famous Boris could not equal. His tone is quite beautiful (to be noted on “Fra l’ombra” from Sosarme), his phrasing is intelligent, and if there are one or two minor problems at the bottom of the register, well, you try hitting an interval of two octaves and a fifth. (Montagnana could not accomplish the latter—the composer revised an earlier aria to eliminate this leap: Thomas restores it.) Like Senesino, this is required listening for Handelians.

I think enough has already been said about the proficiency of the Philharmonia Baroque under McGegan; once again, they come through splendidly. Precision of ensemble is even better than on the previous Handel disc, and I cannot imagine a singer having more sympathetic accompanists than Nicholas McGegan and his musicians.

Audiophiles may both weep and rejoice at this release: sorrow must be felt now that Harmonia Mundi is no longer pressing LPs (the Kapsberger I reported in April appears to have been a fluke), but I think that if you give this CD a serious listen on a good system, you may

Stereophile, June 1991 243
not be too upset. This is the best massed-string tone I have heard from digital; given that I do not have a Goldmund or Versa Dynamics, it may be the best I have heard on my system, period. Highly recommended.—Les Berkley

HUMPERDINCK: Hänsel und Gretel
Anne-Sofie von Otter, Hänsel; Barbara Bonney, Gretel; Marjana Lipovsek, Witch; Hanna Schwarz, Mother; Andreas Schmidt, Father; Barbara Hendricks, Sandman; Eva Lind, Dew Fairy; Tölzer Knabenchor, Symphonie-Orchester des Bayerischen Rundfunks, Jeffrey Tate
EMI CDS 7 45022 2 (2 CDs only). Wolfram Graul, prod. DDD. TT: 102:54

This is a wonderful, cozy reading of this perennial favorite, one which actually makes a case for it as a children's opera rather than an opera parents would like their kids to enjoy. Tate, in a recent interview, stated that he arrived at Wagner through Humperdinck rather than the other way around, and it shows—there's none of the weightiness most conductors bring to the opera. He happily avoids the Valkyrie-like accents Pritchard (on CBS) prefers in heavier orchestral moments. Tempi are quick (too much so only in Eva Lind's poorly sung Dew Fairy), and the action flows.

Aside from Lind, there's not a weak performance in the cast. Best is Lipovsek's menacing Witch, very well sung—without mugging, but with plenty of "face"—and nicely assisted by the engineers, who add some spooky effects. The siblings are terrific—Bonney is silvery and girlish, von Otter impetuous. Their voices blend beautifully. The parents, for a change, do not sound like child abusers: They're youngish and careless, but their worry when they realize their children are in danger is palpable. Barbara Hendricks's Sandman is gorgeous.

Jeffrey Tate really has a handle on this pearl of a work, and he gets lush lyric playing out of the Bavarians. The Boys' Choir is a nice touch. This is also the best sounding Hänsel on discs, with real ambience and great clarity. Von Karajan's 1953 recording remains irreplaceable, but this one is a worthy partner. Highest recommendation.

—Robert Levine

LISZT: Piano Music
*Années de pèlerinage, Deuxième année—Italie; Schubert-Liszts: Auf dem Wasser zu singen; Schumann-Liszts: Widmung*

Alan Marks, piano
Nimbus NI 5226 (CD only). DDD. 57:36

LISZT: Piano Music
Sonata in B Minor, 3 Sonetti del Petrarcha (47, 104, 123); Legend, St. Francis Preaching to the Birds
Vladimir Feltzman, piano
CBS MK 44925 (CD only). Bud Graham, Kevin Bousoe, engs.; Steven Epstein, prod. DDD. 61:45

LISZT: Piano Music
Sonata in b; 2 Sonetti del Petrarcha (104, 123); Dante Sonata
Elisabeth Leonskaja, piano

Teldec 2292-44948-2 (CD only). Eberhard Sengpiel, eng.; Friedemann Engelbrecht, prod. DDD. TT: 65:11

LISZT AT THE OPERA, Vol. I
Fantasies, Paraphrases, & Transcriptions from Auber, Bellini, Berlioz, Donizetti, Duke Ernst of Saxe-Coburg, Glinka, Gounod, Handel, Meyerbeer, Mozart, Tchaikovsky, Verdi, Wagner, Weber
Leslie Howard, piano
Hyperion CDA 63718 & 2 (2 CDs only). Trygg Tryggvason, eng.; Martin Compton, prod. DDD. TT: 2:15:49

LISZT: Piano Music
3 Sonetti del Petrarcha (47, 104, 123); Mephisto Waltz No.1
SHOSTAKOVITCH: Prelude & Fugue No.24 Op.87
PROKOFIEV: Sonata No.7 Op.83
Garah Landes, piano
Stradivari SCD-6069 (CD only). Marc Aubert, Joanne Nickrenz, engs. & prod. DDD. TT: 62:03

CORTOT PLAYS LISZT
Sonata in b; Au bord d'une source, La Leggieretta (2 versions); Legend, St. Francis of Paula Walking on the Waves; Hungarian Rhapsodies 11 (2 versions) & 2; Chopin-Liszts: Spring & The Ring; Verdi-Liszts: Rigolotto Paraphrase
Alfred Cortot, piano. 1919-1937
Pearl GEMM CD 9396 (mono CD only). Denis Hall, eng.; Charles Haynes, prod. ADD. TT: 75:00

These recent Liszt traversals invariably exhibit great technical authority, the notes being delivered with accuracy, evenness, and power. Regrettably, the majority of these recorded compilations also lack, each in different ways, some of the ingredients essential for recreating romantic rhetoric. Thus the Chicago-born Alan Marks, who currently lives in Berlin, tackles the composer's musical sojourn of Italy, a particularly poetic group of pieces, without either much sensibility for that poetry or for dynamic and coloristic subtleties. Nor does a relatively distant piano, hard in the treble region, help in evoking the grandeur and repose that these works demand. For those still interested, it should be noted that the order of the last two selections, Liszt's arrangements of two Schumann and Schubert songs, is reversed.

Vladimir Feltzman's Liszt and the B-Minor Sonata in particular seem to me a 20th-century view, precise, somewhat calculated, and a bit hard-toned and dry in color, as well as again, mostly anti-rhetorical. There is, to be sure, considerable excitement within these parameters but not a great deal to capture the emotions, a failing especially noticeable in the overly controlled St. Francis preaching to the birds *Legend*. An exception is the Sonata's gripping and moody closing pages, but Feltzman's most beautiful and eloquent playing occurs in the Sonata's lyrical middle section and, in the same vein, the more relaxed yet similarly compelling quality that may be heard in the Petrarch Sonnets. Piano tone, least good in the Sonata, is adequate and most attractive in softer sections but without any great sense of depth.

Tbilisi-born Elisabeth Leonskaja broods and

Stereophile, June 1991
questions more atmospherically in her interpretation of the elusive Liszt Sonata, though I have the feeling that she tries overly hard for a big sound. Dynamically, she exhibits a wider palette than is evidenced in the Feltman recording, but her forte passages tend unyieldingly toward harshness, something that doesn't happen with her Soviet-born colleague. The two essentially soft-voiced Petrarch Sonnets, on the other hand, elicit beautiful sounds. Here, however, one sometimes hears tonal allure without the forward momentum that ought to result from an awareness of harmonic tension. When tempo suddenly does deviate, as occurs just past the Allegro energico after the Sonata's opening, or again at the start of the fugue, I find the unexpected gear-change spurts of speed unsettling. Leonskaja's most impressive playing comes with the Dante Sonata from Liszt's Années de pèlerinage Italian series, a far more eloquent traversal of this sometimes bombastic work than in the Alan Marks version above. Teldec's piano reproduction is respectable though neither particularly ingratiating tonally nor exhibiting much depth in the image.

Vol. I of Leslie Howard's program of Liszt's operatic adaptations, part of an ongoing integral survey of all the composer's piano solo works, contains on its two CDs such choice repertory staples as the Don Juan Reminiscences, the Faust Waltz, and Isoldes Liebestod, as well as less-often-heard and even rare settings from Norma, Der Freischütz, Aida, Eugene Onegin, Benvenuto Cellini, L'Africaine, Lucia, Handel's Almire, the Duke of Saxe-Coburg's 1849 opera Tony, and one item claimed as a first recording, three pieces on themes by Aubry. This last selection, by virtue of its material, is performed in a far gentler manner than the vast bulk of the contents and is thus considerably more enjoyable. Unfortunately, most of the works are played charmlessly and without delicacy as though by the proverbial bull in the china shop. Missing are subtleties of phrasing, feeling for line (note, if you have the inclination, how fiercely the Lucia melody is banged out), and poetic sensibility. Granted that brilliance is one of the essentials in much of this Liszt, the supercharged, almost unrelievedly aggressive approach, no matter how technically impressive, is here overdone to the point that the experience of listening to more than a few pieces at one time becomes an aural onslaught. The sound of the piano is extremely clean and tonally even, but without much color.

An American student of Earl Wild (one of our time's really great Lisztians), Sarah Landes definitely bears watching on the basis of his highly impressionist debut recording of Liszt, Shostakovich, and Prokofiev. In contrast to much of the foregoing criticism, one cannot be exposed to his interpretations of the three Petrarch Sonnets without being made aware of their poetic underpinnings. From a technical standpoint, Landes is unafraid to play softly where necessary, and his rhapsodic, reflective, yet vigorous style is abetted by unusual sensitivity and awareness of color (in Shostakovich as well as Liszt). If the ultimate spark of electricity is not yet to be heard in his Mephisto Waltz or the finale of the Prokofiev Sonata, the performances overall will surely provide a most rewarding listening experience. Although the reproduction features a Baldwin with a remarkably full tone, aesthetically, in the case of the steely Prokofiev in particular, I wonder about the advisability of providing such a mellow, perhaps even unduly prominent, woolly-bass piano sound. For Liszt, however, it's fine.

Some historically minded listeners consider Alfred Cortot's 1929 performance of the Liszt Sonata to be the apogee among numerous magnificent recorded editions, this in spite of some admittedly less than note-perfect moments. Rehearing that performance (it has previously been available in various LP reincarnations), I once again was struck by Cortot's commanding concept, his poetic characterization, his elegance, rhetoric, sense of phrasing, dynamic subtleties, and, not least, the strong personality that shines through every measure. Here, as well as in the entire program of electrical and acoustic 78 sides, we finally have the Liszt that, with only a few exceptions, has largely been missing from the performances under consideration. Try the 1926 Rigoletto paraphrase or either of the fabulous Leggierenza sides, from 1919 and 1931, or the noble St. Francis walking-on-the-waves Legend of 1935; for sheer panache, listen to either of the deliciously rendered Hungarian Rhapsodies. There's a price, of course—surface noise—but it's quite amazing how much performance comes through in spite of restricted sonics; the ear quite quickly gets used to the confines of these old discs, even the midrangey pre-1925 acoustics with their weak bass. Technically Pearl has mastered its materials effectively, with especially good segues between sides, although there are occasional bobbles from, one presumes, pressing unevenesses in a few of the original shellacs. Seven of the same sides, but not the Sonata, have also appeared in a miscellaneous Music & Arts Cortot compilation; there, marginally less filtering off the top has the advantage of producing more tonal color with just slightly more impressive pianistic ambience as a result. Both discs, in spite of duplications, are highly desirable.

—Igor Kipnis
In All The World...
Only A Handful
Of the very best CD players
sound like being at a concert hall, rather than listening at home.

Only One

Mod Squad's McCormack Signature does it all for only $2,995

- remote volume control via motorized potentiometer
- remote absolute phase inversion
- fixed and variable signal outputs
- coaxial and optical digital outputs
- favorite track selection
- display control switch
- automatic music scan
- A+B loop
- indexing full function remote control
- random access
- premium hand-selected Philips TDA-1541A

S1 CROWN Series DAC is upgradable in the event of future technological advances.

AMERICA'S LARGEST AUDIOPHILE STORE

Open 7 days a week—Mon.-Fri., 11-7:30 pm, Sat., 10-30-7 pm, Sun., 12-7 pm
627 Broadway, Greenwich Village, (bet. Bleecker & Houston St.) NY 10012
(212) 505-1111 (800) 833-0071 outside NYC Fax (212) 995-5524 Major Credit Cards
MAHLER: Symphony 6
Simon Rattle, City of Birmingham SO
EMI CDs 7 54047 2 (2 CDs only), Mike Clements, eng.;
David R. Murray, prod. DDD. TT: 86:18
MAHLER: Symphony 6
Ricardo Chailly, Royal Concertgebouw Orchestra; Jard
van Nes, mezzo (Zemlinsky)
London 430 165-2 (2 CDs only). John Dunkerley, eng.;
Andrew Cornall, prod. DDD. TT: 104:22

The illumination of hindsight is a hard light to extinguish; it reinforest perceptions that look back at deep, perhaps painful experience. So it is frightfully difficult for one who grew up as spectator to one of this century's deadly conflagrations to listen to Mahler 6 and not hear the footsteps of the Wehrmacht across Belgium, the death camps or killing fields, the screams of the napalm victims; and doubly so at the time of this writing, as great forces swarm over the Middle East, intent on fulfilling the most lurid of biblical prophesies. More than any other of Mahler's works, it is hardest to deny the prophetic element in his Sixth Symphony.

But this seems precisely Simon Rattle's aim in his new recording. Rattle largely avoids our post-Holocaust associations. He broadens and rounds out the opening movement's dotted rhythms, mitigating their impact as a military march. Instead, we hear a most beautifully rehearsed legato from his Birmingham forces, as if the conductor has patiently trained this greatly improved ensemble to emulate Karajan's mellifluous BPO. The tortured meter changes of the Scherzo are likewise rounded, squared, arranged to undercut the demonic asymmetry I have always found inherent in the music. Rattle's intention, I think, is to recreate a sense of Mahler's fin-de-siècle moment of creation.

Perhaps toward this end, Rattle inverts the usual order of the Andante and Scherzo movements, placing the Andante second, the Scherzo third. This was not their order as originally composed, but the order Mahler set when he actually conducted them. Where to place these movements has long been controversial; the compact disc medium has recently allowed the listener to program them to her or his own preference, so long as they occupy the same disc. So it is perverse that EMI has put them on separate discs—you'll need a CD changer, and a ten-year-old to program it.

Rattle plays the Andante with romantic ardor, truly the highlight of his performance. It is Michael Kennedy's very appropriate comment on the Andante in his program notes that gives a clue not only to the success of this movement in isolation, but also of the relative sponginess of Rattle's performance of the symphony taken as a whole. Kennedy cites the Andante's spirit as suggestive of Rachmaninoff; indeed, I can detect that nostalgic spirit spilling into the other three movements, and wonder whether Rattle would be conducting something more fulsome and voluptuous, like a Rachmaninoff symphony.

As a last reconstruction, Rattle restores the third hammer blow, deleted by Mahler, to his rather moony performance of the final movement. One can hardly hear it, though, given the muffled appliance used to produce the effect. As the performance ends I remain confused whether this fundamentalist devotion really enlightens us to Mahler's intentions, or clumsily presumes to fix the essence of a transcendental artist hardly known for his earthbound and linear thinking. A little of both, perhaps.

The Chailly issue is certainly a better value than the EMI, filled out as it is with the Maerlitzch Songs of Alexander Zemlinsky, a fellow Viennese composer 11 years Mahler's junior. These six songs are an admirable inclusion from the standpoint of repertory—chances are you haven't any other Zemlinsky in your record collection—but the link with Mahler's music, via Alma Mahler's youthful romance with Zemlinsky, is tenuous. In spirit the songs attack themselves more closely to the stylized and tortured romanticism of Schoenberg's Verklarte Nacht. Jard van Nes's clear mezzo takes to them more naturally than to Das Lied von der Erde, which van Nes recorded, to mixed results, with Inbal on Denon. With Chailly's sensitive conducting of the sparse orchestration, these are recommendable performances.

Chailly's reading of the symphony is more conventional, probably less interesting, and certainly less personal than Rattle's. I venture that it will prove more satisfying to most listeners. The opening movement, though even broader in tempo than Rattle's and more chamber-scaled in the conductor's delicate attention, still retains a hint of the swagger and violence at the heart of the march. The Scherzo, back in second position, is a shade flaccid, but offers a spectral sense of dancing skeletons to recall Mahler's military-flavored Wunderhorn songs, one of which, "Revelle," was an influence for this symphony.

Chailly's Andante disappoints, lacking Rattle's passion. His finale again brings chamber-like refinement and a cold, hard close. Chailly omits the third hammer blow.

Chailly's performance surpasses Rattle's in the sheer virtuosity of the Concertgebouw Orchestra, which together manage the most hairpin transitions, especially of dynamics. They also enjoy a spacious, precise recording,

Stereophile, June 1991

247
Known By The Company We Keep.

MAJOR AUDIO
Adcom
ADS
Audio Research
Audioquest
Bryston
California Audio Labs
CWD
Dual
Forté
Grado Signature
Lexicon
Magnepan
Magnum Dynalab
Martin-Logan
Mission
MIT
Mondial
Monster Cable
NAD
Nakamichi
Oracle
Pinnacle
Proceed
Sennheiser
Sequerra Tuner
Signet
SME
Sota
Sound Anchor
Stax
Sumiko
Target
Theta
Tice
Thiel
Threshold
Vandersteen
Velodyne
VPI
Wadia
Yamaha

VIDEO
Proton
Tera
Yamaha
NAD

Five listening rooms, specialty accessories, audiophile records and CD's. On premise service, multi-room designs.

TAKE 5 AUDIO
105 Whitney Ave., New Haven, CT 06510
(203) 777-1750

Mon., Tue., Wed., Fri., 10-6, Thurs., 10-8, Sat., 10-5. MC/VISA/Discover/Take 5 Charge
but one less warm and rich than the EMI. That I don't strongly prefer the sound of either is a testament to the consistent, almost not-bad state of commercial CDs nowadays. What I do strongly prefer to both are the several truly great recordings available of the Sixth: both of Bernstein's (but especially the DG), Horenstein's, and Tennstedt's. The last is warm and humane in a manner Rattle might aspire to, but also acknowledges the suffering which lurks at this symphony's heart.

—Kevin Conklin

HUBERT PARRY: Songs of Farewell
CHARLES STANFORD: Choral Music
Richard Marlow, Choir of Trinity College, Cambridge
Conifer CDCF 155 (CD only). Antony Howard, eng.; Mark Brown, prod. DDD. TT: 59:41

Sir Charles Hubert Hastings Parry, Baronet, was a man of remarkable character and integrity. These qualities shine forth in the best of his music, certainly in his late choral works (1914-1917); in the earlier Milton setting, "Blest Pair of Sirens" (which Stokowski referred to as "aristocratic music"); the anthem "I was glad," written for the coronation of Edward VII in 1902; and the song "Jerusalem," after William Blake's 'And did those feet in ancient time' (now familiar from the film Charriots of Fire).

Parry belonged to a different age and type of musician of whom few now remain. He loved music, and he was a musician, author, and administrator, not for what he could get out of it but for what he could put into it. Few men were more devoted to Parry than Sir Hugh Allen, who first performed the Songs of Farewell and received the seal of the composer's approval. Although these songs are often listed as 'church music,' their texts are basically secular: "My soul, there is a country" (Vaughan); "I know my soul hath power" (Davies); "Never weather-beaten sail" (Campion); "There is an old belief" (Lockhart); "At the round earth's imagined corners" (Donne); and finally Psalm 39, "Lord, let me know mine end" — also set exquisitely by Parry's distant predecessor, Orlando Gibbons.

As Jeremy Dibble points out in his notes, great sadness darkened the close of Parry's life. But these valedictory songs breathe peace, faith, and joy. Of bitterness there is hardly a trace. He was no more a great composer than was Stanford, his senior professor of composition at the Royal College, but they both helped countless young musicians on their way to fame and fortune. Stanford, a Dubliner of legal lineage who studied the art of fisticuffs with the family butler and music with Reinecke in Germany, was a first-rate musician and a polychilo-progenitive composer with a hot temper, squabbling with his colleagues about whether a minuet was in binary or ternary form.

But he made a great contribution to music during his 31-year tenure of the Cambridge professorship, and played no small part in the development of such men as Ralph Vaughan Williams. As organist of Trinity he would have rejoiced to hear the choir sing his music with as much devotion and gladness of heart as they do in this radiantly recorded CD, and beyond that he would have given thanks both to them and to the Almighty for singing it with so little vibrato.

Stanford's Three Motets Op.38 are still, happily, in the repertory of cathedral choirs. Justorum animae, set to verses from the apocryphal Book of Wisdom, and appropriate for All Souls' Day, brings us Stanford in a fervent and uplifting mood. Although the other two texts are not identified for us, it may be of interest to know that the brightly jubilant Coelos ascendit bodie has more than a hint of Trinity Sunday. It is also a fitting piece for Trinity College, Cambridge, and the occurrence of 'Benedicam Domino... Deo gratias' shows it to be a medieval Benedictamus trope sung at the end of Mass. As for Beati quorum via integra est (the Vulgate has immaculata, so this is an alternative translation), it is in fact the opening of Ps.119 and shows Stanford in his most expansive mood. This becomes a little withdrawn for his more intimate setting of Robert Bridges's poem "Eternal Father."

The final Magnificat is not the one that sometimes coaxes congregations into singing, but a late work for double choir with a Latin inscription by Stanford to Parry, meaning: "this work which his death prevented me from handing to him in life, I dedicate to his name in grief." It is a noble, exultant work, sonorously sung and recorded, and a harmonious tribute to a sparring-partner who was also a great gentleman.

—Denis Stevens

RÓZSA: String Quartets 1 & 2, Rhapsody for Cello & Piano
Pro Arte Quartet: Howard Karp, piano
Laurel LR-842CD (CD only). Herschel Burke Gilbert, prod.; Bernie Grundman, mastering eng. DDD. TT: 66:58

Thirty-one years separate the composition of the two string quartets on this CD, yet you recognize immediately that both are from the pen of the same boldly declarative artist. In fact, most of Miklós Rózsa's career has been spent making bold declarations in the form of film scores for Quo Vadis, Ben Hur, King of Kings, and many others. In the arresting recordings under review here, Rózsa and the Pro Arte Quartet show that the large statement, the fullness of soul, can be scaled successfully to smaller dimensions, losing none of the
Superior Sound Through Advanced Technology

Acoustic Energy  Cardas  Jadis  Magnum Dynalab  Nitty Gritty  TEAC Esoteric
Airtangent  Coda  Janis  Merrill  Ryan Acoustics  Tara Labs
Audio Prism  Convergent (CAT)  Kebschull  MFA  SME  Tera TV
Audio Quest  Day Sequerra  Kinergetics  Monster Cable  Sonus Faber  Van Den Hul
Avalon  Eminent Technology  Kleine  March  Sota  Wadia
Basis Audio  Ensemble  Koetsu  MSB Technology  Smiko  Well Tempered
Benz  Lectron  Graham  Muse  Symphonic Line  Yankee Audio

* Superbly Furnished Listening Environments  
* Unique Component Comparison Studio  
* Advanced Systems Engineering Expertise  
* Innovative Biamplified Sound Systems

Call: (805) 523-3005  
For an audition  

12277 Arbor Hill Street  
Moorpark, CA 93021
power the composer displays on a larger canvas.

Rózsa's music is intensely emotional. While rooted in the Romantic tradition, it achieves a contemporary quality with its often emphatic rhythms and angular, disjunct melodic motion. Quartet 1 was written in 1950, No. 2 in 1981. What creates the consistency of style, as well as its appeal, is Rózsa's fundamental affinity for the song. In the liner notes, Christopher Palmer observes, “Writing in 1974, [Rózsa] referred to the singing of the peasants on his father's estate in rural Hungary, which deeply affected him, and commented: ‘That is where my music began and where it almost certainly will end’—ie, with song, tune, line, strong and expressive, and sufficient unto itself.”

Neither does this music lose its accessibility. Forms are mostly conventional but are worked so adroitly and with such craftsmanship that listening on even a purely intellectual level is always rewarding. Both quartets have power, intelligence, and passion. Even in the relatively melancholy, peaceful mood of the second movement in Quartet 2, a troubled spirit lurks. I feel this later quartet to be a more complete work of art than its predecessor. The Cello Rhapsody, a youthful work from 1929, is less engaging and interesting than either quartet.

The Pro Arte is an extraordinarily cohesive group, maintaining the clarity of all lines in Rózsa's often densely contrapuntal style without losing the cohesiveness of the whole. The players are also, very obviously, moved by the forcefulness of the music. And, oh yes, they are right in your room!

This recording reminds you that stereo means solid. The image of the quartet is simply astounding in its three-dimensionality. You hear space in front of, to the sides of, and behind the musicians. For the sheer illusion of having musical instruments in your listening room, this disc has no peer that I've heard. The apparent recording space was a small but highly reverberant hall that complements the scale of the ensemble and assures that you don't miss a thing. The only faults in the recording are a very, very slight cupped-hands coloration (which you won't notice immediately because you'll be stunned by the image) and an overetched brightness when the violins crank it up in the higher registers.

The NEA grant used in the production of this recording was money well spent. The music is captivating, the performance intense, and the sound superb. Look for this one; it's worth it.

—Robert Hesson

**Sousa: The Original, All-American Sousa!**

John Philip Sousa & his Band, Keith Brion & his New Sousa Band

Delos DE 3102 (CD only). John Eargle, eng.; Amelia S. Haygood, Adam Stern, prods. DDD. TT: 65:17

I guess it had to happen: the original-instrument movement now includes the music of John Philip Sousa. New Sousa Bandleader Keith Brion, who's been known to dress and make up to look just like ol’ JP himself, uses Sousa's original seating plan, modern brasses and percussion "most closely approximating the sound of the original" instruments, and the saxophone mouthpieces and "tonal conception" of the 1920s. Nonpareil Wind Bandleader Timothy Foley sought out primary sources for his alternative arrangements to Sousa's own scores (which JP himself seldom conducted as written), and even employed a clone of the Liberty Bell in the march named for it (he shouldn't have—the pitch is all wrong). Each disc includes a world-premiere recording of a long-lost Sousa march. But there the similarities end.

Brion extends his fidelity to Sousa's musical memory to replicating Sousa's podium work as well, and has put his money where his baton is by including on this disc the only recordings ever made (seven marches and a spoken introduction) of Sousa leading his own band—nominally a brave act, but in this case all too safe. In the five marches recorded here by both men, Brion is utterly faithful to Sousa in matters of tempo, dynamics (or lack of them), arrangement, architecture, and takings of repeats. But, as is all too evident in Sousa's original acoustic recordings (which date from 1917, 1918, and 1923), and all too common for composers, the March King was hardly the most thrilling exponent of his own music. Anyone who's heard the recordings of Richard Franko Goldman or Frederick Fennell (Fennell's soon to be reissued, I hope, by Mercury Living Presence) has heard what a truly insightful interpretive mind can bring to Sousa's condensed little gems. Brion is sluggish, unimaginative, dutiful, "correct" in all the worst ways—though, I must admit, not as desultory as Leonard B. Smith in the only "complete" edition of Sousa's marches (once available on 10 LPs from the Book-of-the-Month Club).

The Delos disc's saving grace is the inclusion of two previously unrecorded marches. "The Pride of Pittsburgh," one of Sousa's pastiche concert pieces, comprises tunes by two Golden Triangle sons, Ethelbert Nevin (Narcissus) and Stephen Foster ("Come Where My Love Lies Dreaming"), plus a ditty of Sousa's own. It's nothing much, though the counterpart in the final trio section, in which all three melodies are played simultaneously, is fun.

**Sousa: A Grand Sousa Concert**

Timothy Foley, The Nonpareil Wind Band

Angel CDC 7 54130 2 (CD only). John Newton, eng.; Patti Laursen, prod. DDD. TT: 66:30

Stereophile, June 1991
The Hales System Two.
Redefining musicality at $3,000.00.
"Untitled March," on the other hand, written just two years before Sousa's death in 1931, is one of his more finely crafted parade pieces, with Wagnerian (Sousa's favorite composer) brass chords in the break and a trio melody as good as that of, say, "The Free Lance" or "The Glory of the Yankee Navy." A real treat, and a substantial addition to the marching-band repertoire.

Also very satisfying are the sonics, courtesy BMG's Studio A and engineer par excellence John Eargle: full, warm, natural, accurate, with a great sense of the recording venue, and sounding anything but "digital." I prefer a brighter sound for this music, probably because I sat right in front of the brass section in my high school band, but it's far more likely that Brion's natural diffidence makes this album so muffled and musically vapid, its historical importance notwithstanding.

The Angel disc is far more successful on all counts, musical and sonic, though, again, Timothy Foley's are emphatically concert realizations of these mostly parade pieces. Still, Foley works wonders—take his handling of that old stomper, "El Capitan": the Nonpareil seems not to play above mf until the trio, but Foley finds so many gradations of accent and dynamics within that limited range that, after the initial chamber-music shock wears off, the experience is consistently interesting and always musical.

Similar and even more revisionist is the great bell-curve Foley makes of "Manhattan Beach," almost perversely contrary to standard Sousa practice. He builds magnificently to the trio's repeat, then decrescendos to a pp stinger at the end. Wild. Or Foley's substitution of bass drum for the usual cymbals in my own favorite, "The Washington Post," or the xylophone (!) trio of "Sabre and Spurs." According to Foley's research, Sousa himself did this sort of thing all the time. But regardless of their authenticity, Foley's control of dynamics and tonal color never slacken; if I don't agree with all of his realizations, finding them, on the whole, too polite, they're nonetheless always thoughtful, intelligent, and artful.

Concert bon-bons like "The Gliding Girl," a tame tango, and "The Presidential Polonaise" are better danced than listened to, though "La Reine de la Mer," a bright corsage of waltzes, has considerably more substance and life than John Wallace gave it on his Nimbus collection (Vol.12 No.1). There are three brief trumpet-and-drum marches, seldom (if ever) recorded, which will nonetheless sound familiar. "With Steady Step" was later incorporated into the trio of "Semper Fidelis," as "Here's to Your Health, Sir!" was in "The Thunderer."

The world-premiere recording of "Foshay Tower Washington Memorial" is quite a find—the march owes a small debt to von Suppé, but beyond that are exhilarating trumpet fanfares in the break, and the trio features an end-of-cadence accidental that's the most daring harmonic device Sousa ever used in a march—it'll raise your eyebrows.

A Grand Sousa Concert sounds as if a couple of mikes were set up (in the Rye Presbyterian Church) and forgotten—which is good. The constant bass drum will remind you of Telarc, but believe me, it's accurate. Tonal balance is well-nigh perfect, though ambience is consistently cut off too early.

But ultimately, this prettified, cerebral 'concert' Sousa, whether counted off by a timebeater like Brion or lovingly crafted by a musician like Foley, misses the point. We still need a Complete Sousa Edition that melds the guts of the parade ground with the precision of the concert hall, under the leadership of someone with a vital musical interest in the works of a man Paul Hindemith invariably called "America's greatest composer." Mr. Fennell...?

---

TCHAIKOVSKY & VERDI: Arias
Dmitri Hvorostovsky, baritone; Rotterdam Philharmonic Orchestra, Valéry Gergiev
Philips 426 740-2 (CD only). Stan Tal, eng.; Anna Barry, prod. 1DDD. TT: 56:41

Dmitri Hvorostovsky's recital debuts in London, New York, and Los Angeles have been so extravagantly received that one could be excused for assuming that this incipient operatic superstar is a tenor, and not a mere baritone! Although the paucity of charismatic baritones—especially those qualified to perform the Italian opera repertoire memorably—hasn't been chronicled as often as the lack of potential Pavarottis and Domingos, the need is just as great. Artistically speaking, it may be even greater.

The 27-year-old Siberian singer, possessed of an undeniably handsome, luscious instrument, could help satisfy that need. On disc, the voice seems ample in size and is freely produced with an attractive, chesty, resonantly sensuous timbre. His wide range encompasses a high A-natural in "il balen" from Il trovatore, which thrills despite being artistically superfluous. Resembling, at least vocally, a Slavic Ettore Bastianini with similarly overzealous upper-register attacks, his interpretive approach is more imaginative and already shows promise of greater artistic accomplishment. The high Verdiian tessitura doesn't appear to faze him, and, thanks to superb breath control resulting in expansive phrasing and a fine sense of line, he milks the musical virtues of arias from La

Stereophile, June 1991
RCD 855 CD PLAYER
Acknowledged as the “Steal of the Century”, this high-end CD player has the critics singing its praise. Featuring remote control and full programming, the RCD 855 is unbeatable at $399.

RP 855 TURNTABLE
The RP 855 is to analog what the RCD 855 is to digital: exceptionally musical and a steal at its price! Featuring a high mass metal subframe, belt drive and an excellent tone arm, the RP 855 is only $299, including AT 110 E cartridge.

RA 840 BX4 INTEGRATED AMP
50 watts/CHAN/RMS/8 OHMS, Class “A” front end. Selected 1% precision components. High current design, and defetable tone controls are part of the reason the RA 840 BX4 is the little amp with the high-end sound, all for only $399.

All ROTEL® components carry a FIVE year parts and labor warranty! Stereo+PLUS has been proud to offer Rotel quality products since 1984.
traviata, Macbeth, Luisa Miller, II trovatore, and, especially, Don Carlo, most appealingly.

Given additional time to reflect on the musical and theatrical demands of the characters he portrays—in conjunction, of course, with good coaching—he should be able to bring to bear an even more striking and individualized range of colors and nuances in both singing and interpretation. Palpably conversant with Verdi’s musical syntax—his enunciation of Italian is commendably idiomatic, with just a few traces of the “nyeh” sound that adulterates pronunciation for some Russian singers—it is in the Tchaikovsky excerpts that he truly excels. The vaguely lugubrious emotional tone coloration, an authentic Russian provenance, adds expressive, colloquial atmospheric validation to his Eugene Onegin and Queen of Spades excerpts. This also applies to his singing of less familiar Tchaikovsky fare from The Sorceress, Iolanta, and Mazeppa, portrayed with affecting credibility.

While the orchestra plays admirably—with conductor Gergiev’s sympathetic shaping of the music considerably better than merely supportive—the singer is sometimes swamped. The fault appears to lie at the feet of the recording team, not the musicians. Nonetheless, this CD offers a salutary intro to a fine new artist who should please many voice fanciers. While there is room for further development, this is already an impressive talent. Even at this very early stage in what should be a most successful career (in opera, the age of 27 is considered embryonic), his singing is more imposing, more satisfying than that of the reigning Soviet primo baritono Yuri Mazurok. With diligent work on vocal and dramatic finesse, Hvorostovsky could conceivably challenge the altitudinous singing standards set by his great compatriot baritone Pavel Lisitsian, who, now in his 80s, is one of the greatest vocal artists of this century.

—Bernard Soll

VERDI: Aida

Maria Chiara, Aida; Luciano Pavarotti, Radames; Ghena Dimitrova, Amneris; Leo Nucci, Amonasro; P aza Burchuladze, Ramfis; others; La Scala Orchestra & Chorus, Milan, Lorin Maazel


This release need not concern too many people. It was recorded in Dec./Jan., ’85/86, and just released, so that should tell us something: ie, that London didn’t know what to do with it or the cast had to be convinced to let it loose. Whatever—it’s not in the running.

I’ve always liked Lorin Maazel’s way with opera despite its quirinkness—he goes for a very transparent sound (his recorded Turandot is unbelievable), sometimes at the expense of line and sweep, but it’s invariably new, if not quite right. Here he’s odder than ever and rarely successful: the Triumphant Scene is not triumphantly presented, the intimate moments are not warm, the Judgment Scene doesn’t explode. The first two acts, in fact, are a mess; the Temple Scene sounds like a run-through.

The singers are either hindered by him or busy digging their own graves. Pavarotti can definitely do better as Radames—I’ve heard him do so in the opera house. Yes, his tone is always round and beautifully placed, but, heavens, he sounds bored in Acts I and II and tired in IV. That leaves us with a good III and it’s not enough. Almost the same can be said for Chiara’s Aida, although she surprises with her intelligence and musicianship. Hers is not the most luscious sound, but she knows the role and communicates by Act III. Dimitrova’s Amneris—an experiment, this, since she’s a dramatic soprano and not a mezzo—is so dull in the second-act confrontation with Aida that I had to play it again and again to make sure a channel wasn’t out. But her voice is right for the part, even if temperamentally she was out to lunch during the sessions. Leo Nucci’s Amonasro is nice and unmemorable, and aside from Burchuladze’s amazing, nasty-sounding Ramfis, the rest of the cast blends.

The recording is not good either. Voices are too prominent and occasionally it sounds like the violin mike was turned off. And the engineers should be decked for rigging the diminuendo on Pavarotti’s high B-flat at the close of “Celeste Aida” electronically. You can practically hear the knob being turned and reverb added. Ugh.

Stick with Freni/Karajan or Price/Solti and save yourself some money, time, and aggravation.

—Robert Levine

Classical Collections

CARRERAS, DOMINGO, Pavarotti: In Concert

José Carreras, Plácido Domingo, Luciano Pavarotti, tenors; Orchestras of Maggio Musicale Fiorentino & Teatro dell’Opera, Rome; Zubin Mehta

London 430 433-2 (CD only). Christopher Raeburn, prod.; James Lock, John Pellowe, Philip Siney, engs. DDD. TT: 68:18

“Ladies and gentlemen, the tenors are at the gate...”

But seriously, folks. This was probably the biggest “operatic” event of 1990: The three most visible, most popular, most widely recorded, and possibly best “Italian” tenors in the world gathered together under the July sky at Rome’s Baths of Caracalla for a joint concert.
Vacuum Tubes • FETS • Bipolar Transistors

OUR BEST PRE-AMP*

Has Them All

Counterpoint SA-5000

- Exclusive separate regulated vacuum tube power supply
- 3-Point suspended circuit board
- MM and all M.C.’s
- User control of absolute signal polarity
- Both vacuum tube direct
  or hybrid solid state buffered main outputs

* The SA-11/9—a three chassis preamplifier system is expressly reserved for the obsessed.

AMERICA'S LARGEST AUDIOPHILE STORE

Counterpoint SA-5000

$3,495

† Authorized Dealerships:
Audio Research Corp., Apogee, Arcam (#1 U.S. Dealer), Audioquest, B&K (#1 N.Y.C. Dealer), B&W (#1 N.Y.C. Matrix Dealer), California Audio Labs (#1 E. Coast Dealer), Carver, Celestion Sl., Conrad-Johnson (#1 U.S. Dealer), Counterpoint, CWD, Grado, Infinity, Kimber Kable, Luxman (#1 N.Y.C. Dealer), Magna Dynalab (#1 E. Coast Dealer), Micromega, MIT, Mod Squad (#1 E. Coast Dealer), Monster, NAD, Nitty-Gritty, ProAc (#1 N.Y.C. Dealer), Quad, Revolver, Rogers (#1 U.S. Dealer), Roksan, Rotel, SME, Snell, Sony ES, Sota, Spica (#1 E. Coast Dealer), Stax, Straight Wire (#1 U.S. Dealer), Sumiko, Target (#1 U.S. Dealer), Threshold & Forte (#1 N.Y.C. Dealer), Tice (#1 U.S. Dealer), Van Den Hul, VPI (#1 U.S. Dealer), Velodyne, Wadia (#1 U.S. Dealer), Well Tempered, Yamaha, etc.

LUCASFILM THX HOME THEATER, Lexicon, Proton, Vidikon-projection TV, Fosgate, Tera TV

Open 7 days a week—Mon.-Fri., 11-7:30 pm, Sat., 10:30-7 pm, Sun., 12-7 pm
627 Broadway, Greenwich Village, (bet. Bleecker & Houston St.) NY 10012
(212) 505-1111 (800) 833-0071 outside NYC Fax (212) 995-5524 Major Credit Cards
The CD is, as of this writing, number 36 on the Pop (!) Chart, and the video has broken all records as well.

Comparing tenors (and other singers) has always been a happy past-time of opera lovers, and this release makes it all the easier to do so. And since we are all nonpartisan adults, the thing to do is revel in the differences inherent in each voice and style rather than see the evening as "Dueling Tenors." Granted, after each has sung an aria (just for the record, it begins alphabetically, or youngest first), one fairly expects an announcer to break in with "And at the end of round one..." (My sports metaphors are mixed, but all apply.) No such thing happens; we may as well just sit back, relax, and privately take notes.

Carreras begins with Cilea's "Il lamento di Federico," and his gorgeous sound, we discover at once, is intact; he sounds just as he did before his serious illness. This, of course, means that his sensitivity, *mezza voce*, and burnished tone are most welcome, but also that when he sings either very loud or very high, there's a noticeable, unpleasant beat in the voice. Later he sings "Cor 'nigrato," and he and Mehta give it such intensity that it sounds like a masterpiece. He launches "Granada" like a champ, but when he gets to Chenier's "Imprevviso" he forces and sounds as if his voice doesn't fit the music. There's no denying the depth of feeling, however, and his interpretive near-hysteria is catching and appealing.

Domingo begins with "O paradis" (in the original French), sounding not altogether happy, but then he sings "Dein ist mein ganzes Herz" so handsomely, and with such sweep and feeling, that it melts the listener. "Non puede ser" is rich and dark, "E lucevan le stelle" is stunning if a bit detached. (Four languages—count 'em, four.) He's hit his stride—he could fight a bull.

Pavarotti opens with a very cool "Recondite armonia" from *Tosca*, but what a sound! It's as if the sun has come out. The beautiful but dumb "Rondine al nido" proves anew that Pavarotti can captivate with even the frothiest of music, and "Torna a Surriento" dazzles as it should. His last solo, "Nessun dorma," is beautifully intoned, if with the depth of a teaspoon, and he holds the final B-natural way into the aria's coda, which causes dissonance, but who cares? It's a thrill a minute.

Then comes the "medley" (arranged by Lalo Schifrin; what more could you ask for? Carol Burnett?) in which the guys alternate lines, and occasionally two sing back-up, sort of like a boy classical version of Gladys Knight and the Pips. All three sound out of place in both "Maria" and "Tonight," but once Domingo launches into "Cielito lindo" (better known to us as "Ay, ay, ay, ay"), everyone begins to have a great time, and the barbershop trio effect takes over. Andrew Lloyd Webber's "Memory" makes everyone cringe, while "Ochi thorniye" (which we all presumed we'd never hear again) is a nice, Siberian interlude. "La vie en rose" is a pleasant surprise. "Mattinata" is predictably delightful, and "Wien, Wien, nur du allein" shows Domingo to be a fine German stylist, Carreras a good sport, and Pavarotti a fish out of water. "O sole mio" ends the medley, and it's so razzle-dazzle that it's repeated. The second time, Pavarotti solos and lets loose with a trill on high A-flat and B-flat—the other two follow suit. (On the video, this is supposed to look spontaneous; if you believe that, I've got a bridge for sale.) Then all three sing "Nessun dorma," and with a million dollars' worth of voices singing a high B-natural, who could sleep?

Here are some wonderful observations: Pavarotti has the most trouble with languages other than Italian, and is also the one who could least be described as a "team player." But he's also the most vocally consistent, perhaps because he takes so few risks. Carreras takes the most chances and always fascinates but is the most laid-back as a performer, with the most uneasy sound. Domingo is a tenor for all seasons; there seems to be nothing he doesn't do well, and he's a charmer, even without trying.

These are three great singers giving their all. Mehta whips both orchestras into magnificent shape, accompanying the tenors with heart and soul. This very athletic, satisfying evening generates a great deal of heat. And as long as you don't wonder about the actual *musical* value of it all, you can't avoid having a good time. The sound is surprisingly good, if a little glaring: If you play this loud, you'll feel like you're being yelled at.

One final note: The video, also available on London, is head and shoulders above the CD as a "show." Watching these three dudes give each other the high five as one leaves and the next comes out is a sight to behold, as is their face-making, sinus-clearing, kiss-blowing, and hanky-waving. And, to boot, it makes you overlook some vocal and artistic shortcomings. I give the video an A—^for entertainment; the CD somewhere below that, but not much.

But it doesn't really matter—can you afford *not* to own a recording of this event?

—Robert Levine

---

1 I was disturbed while watching the PBS broadcast of this concert by incessant noise-pumping, as well as by the fact that the orchestral sound "ducked" every time one of the three tenors entered. Anyone else notice this? Or am I, in my dotage, just getting too fluzzy about the general lack of competent broadcast engineers?

—JA
It's important to...

CONSIDER THE SOURCE

when considering the purchase of high end audio equipment.

Whether you are a seasoned veteran at buying audio equipment or ready to make your first purchase, you owe it to yourself to talk with a real expert. Someone who not only knows music, but more importantly, makes it. A recording engineer with over 65 records and CDs to his credit, Peter McGrath is considered to be one of the top experts in the field of classical recording!

For 17 years, Peter McGrath and his staff have enjoyed talking about sound reproduction almost as much as they enjoy reproducing sound. Call Peter today. The advice he gives you is as accurate as the recordings he makes.

Mark Levinson No. 26 Preamplifier

PETER McGRATH'S SOUND COMPONENTS

High performance audio and video.
11927 South Dixie Highway, Miami, FL 33156
305/232-8848
RESPIGHI: Pines of Rome
Arturo Toscanini, NBC Symphony (NBC telecast of 12/29/1951)
RCA Victor Gold Seal 60339-6-RG (Vol.9) (mono Laserdisc);
George Mathes, original eng.; Don Gillis, original prod.; Kirk Browning, original dir.; John Pfeiffer, reissue prod. ADD.
TT: 51:51

The third installment of BMG's Toscanini compendium on CD contains a number of important reissues, notably the 1941-42 Philadelphia series. These recordings, originally scrapped due to a variety of reasons, only some of them technical (the masters were allegedly damaged and were deemed unsalvageable in their 78rpm form), were finally issued complete on five LPs in 1976, the Schubert first having been released in 1963. They present a fascinating view of the Maestro, in which one hears him with an orchestra tonally smoother, even at times more lush, than one is used to with the NBC Symphony. Of course, the fabled clarity and precision are still very much apparent, but also at times one notices a slightly more relaxed, warmer manner to the music-making, as in the Pathétique or the Schubert Ninth. Among these performances, many of them momentous but all of them of enormous value, one must mention such standouts as the Mendelssohn Midsummer Night's Dream, the Berlioz Queen Mab Scherzo, and the two Debussy works.

Although I'm certain that a good bit of work has gone into the CD transference of this material, I must confess to some disappointment at parts of the outcome, which I assume is not from the original masters but from the tapes that went into the making of the LPs. Surface noise is relatively slight, though continuous (wisely retained through pauses between movements), and, surprisingly, even instrumental details and balance subtleties emerge. However, constriction abounds in some places, as for example the louder sections of the Schubert or the raucous ending of the Strauss. Could not such moments have been more effectively tamed? There are also a few pitch bobbles in the Schubert and a disconcerting wow at the conclusion of the Mendelssohn, ostensibly from the originally off-center pressing.

The Boito and Verdi make an excellent combination. The Mefistofele Prologue and the last act of Rigoletto in particular being among Toscanini's very greatest recorded performances. I would consider this essential for any library, but it is regrettable that the Boito cannot be described as free from constriction. Furthermore, I recall the original LP pressing, especially at the outset, conveying a vast, almost eerie, feeling of space, which aesthetically, of course, is perfectly suited to the scene. In comparing that brighter-sounding LP with the CD,
I can only conclude that a low-pass filter appears to have removed some of the treble but in so doing has also caused the loss of some ambient information. Curiously, the heavenly brasses now emerge unatmospherically earth-bound (one also hears a few, newly audible, moments of imprecision). The electrifying Rigoletto act and the Lombardi Trio, on the other hand, reproduce with remarkable vividness.

Without question Beethoven's Missa Solemnis was one of Toscanini's monumental statements, and this particular performance, in spite of its distant soloists, slightly anemic bass, and somewhat shallow soundstage, is an important part of his recorded heritage. It is the Cherubini, however, which gave me the greater pleasure, both for the rediscovery of a deeply moving work and reproduction which impressed me as superior to the original LP issue.

With the four laserdiscs at hand, all ten of Toscanini's telecasts made between 1948 and 1952 are now available to the purchaser. I was long under the mistaken impression that only isolated fragments of these black-and-white kinescopes had survived (occasionally bits would turn up on programs devoted to Toscanini), so it is truly a major event that, in spite of primitive photography, these programs are presented in whole and, for the most part, eminently viewable and listenable form. The quality of these naturally vary very considerably, the earliest ones usually (but not always) being the least satisfactory visually for reasons of lighting, camera work (static, poorly framed images, wrong subjects), or other technical reasons, such as the present Brahms program, which has two-thirds of the Double Concerto out of focus on all cameras. From time to time, as on the Brahms and Mozart/Dvorák/Wagner programs, ghost-like double images also crop up. In general, however, the sonics, which wisely are derived from transcription discs rather than that of the poorer kinescope soundtrack, are, to my mind, slightly superior in terms of less raucousness in heavily scored passages than in some of the seven previous LDs. However, one reproductive problem, most obviously heard in Respighi's Pines of Rome, has an almost invariably uniform loud volume level for the final "Pines of the Apuan Way" in which the Roman legions are portrayed as marching ever closer, thus totally nullifying Toscanini's quiet passages and his remarkable, finely judged crescendo. Some skillful postproduction monitoring could easily have improved on this original failing of gain-riding procedures.

Toscanini—fiercely concentrating, head beaded at times with perspiration (occasionally forcing him to direct with closed eyes), vigorously singing along, forewarning of important entrances with his cues, cautioning his orchestra about dynamic balances, and, not least, vigorously belying his age by the intensity of his gestures—is the fascination here. Because watching him is so absorbing, even at the expense of not being shown in usual fashion what instrumentalists are playing at any given moment, the best of the discs tend to be the ones which concentrate on the conductor. Thus, I would surely recommend the all-Wagner program, an extraordinary, passionate experience on all counts in very satisfactory sound. The Mozart/Dvorák/Wagner is visually less ideal, with constricted string reproduction, but both the Tannhäuser Overture and the Dvorák, otherwise commercially unrecorded by Toscanini, are fantastic as performances. Finally, the discs, at least as viewed on a large-screen, high-definition projection TV, often reveal a snow-like inclusion, a pressing-quality problem that is most obvious when dark backgrounds are present. On smaller screens, the defect will be less noticeable. —Igor Kipnis

**Jazz**

**LES BROWN: Anything Goes**

USA Music Group CD-685 (CD only). Mike Tacci, Jim Champagne, engs.; Les Brown, Jr., Frank Comstock, prods. DDD. TT: 36:39

Anyone who was around during the '40s and '50s and loved pop music with strong jazz roots surely remembers Les Brown and His Band of Renown. Though a flood of nationally known big bands emerged on the scene during that period, only a few were of compelling musical interest. Les Brown's was one of them, and while it was such fare as "Sentimental Journey" and "I've Got My Love To Keep Me Warm" that resounded from virtually every jukebox in America, there was also the jazz side of Brown's band, its fine roster of soloists and red-hot forays into such atypical big-band vehicles as "Slaughter on 10th Avenue" and "Peter and the Wolf."

The sound and spirit of that group—including the straight-ahead swinging and razor-sharp ensemble that were always Brown hallmarks—is very much in evidence on this CD featuring danceable arrangements of classic pop and show tunes. A few inclusions such as "Desifinado," "A Taste of Honey," and "The Way We Were" are of more recent vintage, but you won't find any stylistic updating from the road band of yore except for a slightly expanded color palette in the form of French horns, harp, vibes, and some added woodwinds and percussion. Most of the charts are by Brown collaborator of no less than 48 years Frank Com-
stock (whose writing talents contributed so heavily to the success of the Hi-Lo's in the '50s)—which means there's as much to lift your spirits and whet your intelligence as there is to keep your toes tapping.

Although Brown has maintained his long association with comedian Bob Hope over the years, the band that began life as the Duke (University) Blue Devils in 1934 has made only sporadic recordings during the past three decades. This welcome one includes still-vibrant voices from the group's heyday in sparkplug drummer Jack Sparling, multi-windwood player Ronny Lang, and bass trombonist Clyde "Stumpy" Brown. Interestingly, trombonist Dick Nash, who turns in several warmly swinging solos, is the brother of veteran Brown tenor man Ted Nasl, while Dave Pell, who also filled the band's featured tenor chair with distinction from 1948 to '55, collaborated in the album's digital mastering.

So much for nostalgia—though I would guess this CD will be bought mainly by those who appreciate such golden oldies as "I've Got You Under My Skin," "Georgia On My Mind," "The Way You Look Tonight," and "These Foolish Things," all displayed in glistening big-band wrappings. If the music echoes another era, the sound is very much of the '90s in its brightness (occasionally a bit too much so in the trumpets), realistically defined soundstage (not a lot of depth, though), and crystalline clarity. There are also plenty of punch and wallop, which is just the way the best big bands sounded in those days when an evening with Kenton, Herman, Ellington, Basie, or Brown was as good as it got. —Gordon Emerson

MORDY FERBER: All The Way To Sendai
Mordy Ferber, electric, 12-string acoustic, & classical guitar, guitar synthesizer, voice; Nana Vasconcelos, percussion, voice; Tiger Okashi, flugelhorn, trumpet; Bob Mintzer, flute, tenor sax, bass clarinet; Brad Hatfield, Teese Gohl, keyboards; Gilda Bole, Miroslav Vitous, bass; Marty Richards, drums
Enja R2 79643 (CD only). Rob Jaczko, Gragg Lansford, engs.; Mordy Ferber, prod. AAD. TT: 46:03

MITCH WATKINS: Curves
Mitch Watkins, guitar, guitar synthesizer, Bob Berg, tenor sax; Jay Anderson, bass; Dennis Chambers, drums
Enja R2 79649 (CD only). Mike Marciano, eng.; Mitch Watkins, prod. ADD. TT: 45:38

A few months ago, I noticed that the majority of my jazz listening centered around artists who shared the same label. My fingers seemed to gravitate toward pulling the latest releases by trombonist Ray Anderson, organist Barbara Dennerlein, percussionist Bobby Previte, and guitarist Mitch Watkins.

These performers all record for the Mesa/Blue Moon group of labels which includes Mesa, Blue Moon, Enja, and Grammavision. Like many jazz labels such as Blue Note, Prestige, and Impulse, Mesa/Blue Moon has a sound. Unlike those other labels, the Mesa/Blue Moon sound is hard to define, refusing to fit into a neat category like soul/jazz or hard-bop. It's almost easier to say what it is not. It is not fusion (or, more often, fuzak), jazz-lite, or wunderkind jazz (New-Kids-on-the-Be-Bop-Block). It is not "happy jazz."

Mesa/Blue Moon features seasoned players who have developed distinctive voices incorporating all the musical forms that the global village has to offer. They come together under this banner to offer creative compositions and interactive improvisation. They are equally comfortable playing inside or outside, as at home with dissonance as with consonance. And if the recordings are not equipment-demonstration quality, they are nevertheless clean and clear, adding to rather than detracting from group interplay.

In the time-honored jazz-label tradition, the musicians guest on each other's projects. It was on Barbara Dennerlein's debut that Texas guitarist Mitch Watkins's playing first excited my attention. His bluesy approach and aggressive attack, combined with harmonic sophistication, helped tear the roof off that incendiary album.

His own debut as a leader was disappointing—his distinctive touch lost, for the most part, in the anonymity of synthesizers and drum machines, the compositions sounding like Weather Report outtakes. His latest, Curves, fares markedly better. Guitar synthesizer is used tastefully and sparingly, and jazz/funk meister Dennis Chambers is left alone to drive the tunes to the heights of groove and swing with his monster chops.

A sense of space and strong internal logic help Watkins compositions like "Ocho Rio" and "Point to Point" come alive. Saxophonist Bob Berg, used primarily to double the lead lines, gives the album almost a trio feel. His few solos are exciting, but there's no vagueness about whose date it is.

If "Sublime in Time" brings Watkins's blues-rock roots to the fore, it also points up a weakness: tone. Excessive distortion disguises rather than enhances his dynamic attack, as does excessive compression in his clean tone (we're talking guitar-effects choices here, not engineering or pressing problems).

Mitch Watkins's greatest strength, and one that sets him apart, is the sense of joy that comes through in his composing and playing on his own album and those of his labelmates.

Growing up half a world away, Israeli-born Mordy Ferber exhibits an entirely different set of influences. His compositions have a haunted-

Stereophile, June 1991
Music is our Reference

MUSIC REFERENCE
BY RAM LABS
SANTA BARBARA

Fine Vacuum Tube Audio Equipment • Computer Tested Tubes

MUSIC REFERENCE DEALERS

BROOKS BERDAN, LTD.
Monrovia, CA
818/359-9131

TWEAK SHOP
Santa Rosa, CA
707/575-8626

HCM AUDIO
Chico, CA
916/345-1341

THE REFERENCE ROOM
Ohio Valley

SIMPLY STEREO
Greater Chicago/
Hoffman Estates
708/882-2885

SOUND II
Boston/Rhode Island
508/996-5454

LISTENING ROOM
Baltimore, MD
301/239-2020

AUDIO CONNECTION
Verona, NJ
201/239-1799

SOUNDS GOOD AUDIO
Floral Park, NY
516/326-4945
desert quality achieved through the use of voices singing, whispering, and muttering, and through his highly personal style of composing and orchestrating. A cursory listening to the beginning of the title tune might sound like something from a "Wave"-programmed station. Closer listening reveals, right from the start, an ominous tonality that tells you this ain’t “happy jazz.” By the time Ferber’s halfway into his solo he’s throwing chords into dissonance with his whammy-bar and whipping off sonorous clusters—this guy means business!

Even when “Flowers Affair” goes into a standard fusion struts, the use of a bass clarinet solo gives it a mournful quality in keeping with the album's atmosphere. This is not to say that this is a very dark work—more, mysterious.

Ferber’s tunes are neither “head-blow-head” bebop nor “let’s-see-how-many-tricky-rhythmic-hits-and-convoluted-lines-we-can-play-together” fusion. They are fully realized pieces, with mood, melody, and sections that flow easily into one another. That they are often less cinematic than reminiscent of a Mike Post TV score is in no way a criticism (check out “Rockford Files” reruns).

Both Mordy Ferber and Mitch Watkins exhibit yards of personality in both their playing and composition. In fact, that may be the key to the Mesa/Blue Moon sound—personality. With rare exception, the artists on this family of labels have distinctive personalities unrestricted by genre and fashion. These two guitarists are, each in his own way, unique enough to belong there, and they have found a good home.

—Michael Ross

MIKE GARSON: The Oxnard Sessions, Volume One
Mike Garson, piano; Bob Summer, trumpet; Bob Shephard, sax; Rick Zunigar, electric guitar; Brian Bromberg, acoustic bass; Billy Mintz, drums

Wow! This album is something else. For lovers of modern jazz, Reference Recordings has released the album we’ve been waiting for.

Multi-talented keyboardist/composer Mike Garson served for several years as David Bowie’s music director. Not bad for a Juilliard-trained classical pianist! Garson is also a prolific composer, credited with over 1300 pieces of music. One of these, “Without Self,” starts Oxnard off. A spirited jazz waltz, it features outstanding ensemble playing and sparkling solos by Garson, Bob Shephard on soprano sax, and Billy Mintz (who goes berserk during his drum solo). Obviously, Garson has chosen his sidemen well. The band works together as a unit with lots of give and little take. “Nothin’ To Do Blues,” also by Garson, is a trio with a humorous, impish feel which reminded me of Thelonious Monk. There's some great acoustic bass playing by Brian Bromberg, especially on his solo. The standard, “Tenderly,” is given a solo treatment by Mike displaying not only his command of the piano but his understanding of the instrument's history in jazz. Garson has learned well.

The ballad “Wind Beneath My Wings” is another trio setting; this time the mood is relaxed and melancholy, Garson displaying a keen touch. The sound is particularly seductive, with the piano's rich, resonant harmonics riding on waves of sound created by the acoustic bass and tasty drum accents. A great song, and one of my favorites on the album. And what a magnificent instrument Yamaha Concert Grand #454100 is! “Spontaneity” is a high-powered trio, the boys going full-tilt. Garson shines here, really flaunting his chops. Miles Davis’ “Solar” is done as a guitar/piano duo with Rick Zunigar really digging in. Garson doesn’t hold back either, reminding me in places of Lennie Tristano. I especially liked the improvised counterpart between the two halfway through the piece. The puckish trio version of the evergreen “Sweet and Lovely” sounds as if everyone was having a good time (based on the vocalizing I heard), Brian Bromberg contributing another great bass solo. "Oh, Lady Be Good," solo Garson, is a musical tour-de-force, effectively incorporating diverse piano styles. If there was any doubt as to Garson’s abilities, this cut should quell them.

The recording puts you just in front of the stage at the Oxnard Civic Auditorium, which has, in Garson’s words, “superb acoustics for piano, with beautiful natural reverb.” I concur. The level of detail captured and the believability of the sound are stunning. If ever there was a “there” there, it’s manifested on this album. The hall sound is the best I’ve ever heard. That Keith Johnson managed to capture each subtle detail of the marvelous-sounding Yamaha Concert Grand, yet preserve its firm placement within the soundfield, is a testimony to his genius.

It’s somewhat disconcerting to hear music this well recorded. With the volume turned up and the Jeff Rowland Model 1 amp in the system, I sensed the barrier between live and recorded music was being dramatically erased. I only missed the extraneous and often distracting noise of a live audience. CD and LP sound remarkably similar. The DMM LP (flat as a pancake, and with surfaces that disappear, thanks to RTI of Camarillo) has the unsettlingly quiet background associated with digital; the CD has a level of ambience recovery usually associated with analog. Both approaches let the music shine through. If pressed to pick nits, I’d say the.
Stereo Exchange Announces
An Extraordinary Group of Audiophile Cables

the new M SERIES®
by MONSTER CABLE®

Utilizing new technologies never before applied to audio cables Monster Cable engineers have developed a complete new series. Building on the popular M 1 and M 1000 Mk II the new M SERIES now features five interconnect cables and five speaker cables.

Designed to interface with the latest advancements in today's state-of-the-art audio components, including bi-wiring, bi-amping and balanced line configurations using XLR connectors. New Multi-Twist manufacturing with Isotec vibration dampening cable jackets take this series of cables to new performance standards.

Ask about our program to allow you to listen to these cables in your home with your own music system ... and trade up your old cables for the new M SERIES.

Designed By ... And For Audiophiles

AMERICAS LARGEST AUDIOPHILE STORE
STEREO EXCHANGE
the BLOCK-LONG store

Open 7 days a week, Mon.-Fri. 11-7:30 pm, Sat. 10:30-7 pm, Sun. 12-7 pm

- 627 Broadway, Greenwich Village, NY 10012
- (212) 505•1111 (800) 833•0071 outside NYC Fax (212) 995-5524
LP rendered the piano's upper registers with a bit more thickness, the nasal, raspy sound of the soprano sax was a tad more convincing, and the heft of the acoustic bass could be more easily felt. If all CDs sounded this good, though, record reviewers would spend more time discussing the music. The CD includes alternate takes of four of the songs and lets the listener in on performance details (count-offs, studio chatter, etc.) usually kept behind the scenes.

Mike Garson is one hell of a talented, versatile musician; RR-37 demonstrates this by mixing robust, balls-to-the-wall jam-session combos with often intense, though sometimes introspective, piano solos. Reference Recordings has once again served the music lover well; I recommend Oxnard Vol. One highly. Now, Marcia, when do we get Vol. Two?—Guy Lemco

DAVE HOLLAND QUARTET: Extensions
Dave Holland, bass; Steve Coleman, alto sax; Kevin Eubanks, guitar; Marvin "Smitty" Smith, drums
ECM 1410 (841778-2, CD only). James Farber, eng.; Manfred Eicher, prod. DDD. TT: 59:00

Since 1982, Dave Holland has run one of the world's best and tightest jazz bands. After the wild good humor of Jumpin' In, the downright goofiness of Seeds of Time, and the Wayne Shorterish two horn charts of The Razor's Edge, Holland has pared down his group to four for the darkly brooding Extensions, and added his first chording instrument in a long time. I missed Kenny Wheeler at first, but this disc, with Steve Coleman's sax fluidics, Kevin Eubanks's blend of Scofield and Metheny guitar voicings, and Marvin "Smitty" Smith's full-voiced drumming, offers plenty even without the trumpeter's melancholy voice.

Holland could have called this one Etudes and said a lot more about what goes on in this dense hour of music. These rigorous jazz studies in rhythm and listening achieve an almost Bach-like balance of voices and timings. Listen to "Black Hole," which manages to avoid "One" (fe, the downbeat) for all of its ten minutes, or the astringent sultriness (how's that for an oxymoron?) of Holland's "Processional." His long (14:32) "The Oracle" is probably the richest, most interesting track, switching as it does between Afro-Brazilian atmospherics to neo-bossa nova and Holland's own churning solo. The tune is deceptively easy to listen to—actually, it drives relentlessly without sounding a bit forced. This combination of relaxed looseness and inevitable propulsive power is also true of Eubanks' "Color of Mind," with its angular Zappa-ish unisons, and his dramatically building "Nemesis." So much of this drive and pulse are due to Smith's drumming that I kept thinking of this as his date: here's that reflexive New Orleans rhythmic core, constantly second-guessing and commenting on itself, that gave birth to jazz, reggae, and rock 'n' roll. You can hear here all those extensions of the mother drumming tongue.

Eubanks's guitar is the band's only electric instrument, but it's fascinating to hear how the best aspects of rock and fusion can inform the playing of an acoustic jazz band. This music could not have existed without funk, the electric Miles Davis (Holland played on Bitches Brew, In a Silent Way; and other Davis dates), Weather Report—or ECM producer-founder Manfred Eicher, whose hyper-intimate, deep ear recording style savors every nuance of sound and harmonic, giving the listener a musicians'-ear-view. No, not what you'd hear at the tiny front table of some sticky-floored jazz club; yes, exactly what you'd hear if you played in the band. Fine by me.

Holland plays only what he has to play to make the music real—there's not an extra note on the whole disc—his full, gutsy tone is the blood and flesh on Smith's rhythm bones. There are hardly any solos, per se; this is no blowing session, but group music, ensemble music, music by four strong voices singing as four as one. These guys listen so hard it hurts, and let each other get away with nothing and everything. Recommended? You bet. Important music.

—Richard Lehnert

SHIRLEY HORN: You Won't Forget Me
Shirley Horn, voice, piano; Charles Ables, bass; Steve Williams, drums. With: Miles Davis, trumpet; Buck Hill, trumpet; Branford Marsalis, tenor saxophone; Wynton Marsalis, trumpet; Boots Thielemans, harmonica, guitar; Buster Williams, bass; Billy Hart, drums

As I've stolen from JA and said before, the coolest part of being an audio reviewer is turning people on to great music, so it makes sense that the second coolest part is getting turned on yourself! Richard Lehnert laid Shirley Horn's new one on me, but strangely, I'd never heard of her before. "Just go buy it. Do it now," he said. I'd been led astray a few times too many lately by well-meaning friends; Neil Young's latest, in particular, was the fastest back to the store for exchange. But Richard and I happen to share a deep, burning love for Herradura tequila, the Audio Research SP-14 phonostage, and Delbert McClinton, so I went right out and picked it up.

And man, is this disc great! Not only is the music fantastic, but the sound is some of the best I've heard yet from digital. The imaging's not as precise as the Chesky's; it definitely wasn't a crossed-cardioid affair. The bass isn't as stigym as the Telars; Shirley don't shoot off
EXPOSE YOURSELF
to the finest selection of audio components
available under one roof, such as:

THE STEAL OF THE CENTURY:
ROTEL RCD-855 CD PLAYER

♦ Musical  ♦ Accurate  ♦ Refined  ♦ Transparent
♦ Superior 5-Year Extended Warranty

The CD player that conquered *Stereophile Magazine*
and the audio press around the world!

FLASH!!—Now there’s an even more amazing product
from Rotel—the RCD865BX bit stream CD player!

Also Featuring

VANDERSTEEN  Legendary baffleless designs; openness and imaging comparable to planar speakers. Superb values, outperforming competitors twice their price. The awesome 4A must be heard to be believed, as well as the fabulous new model 3!

APOGEE  Sonically and visually stunning ribbon speakers, frequent “best sound at show” awards; available in decorator finishes. Come hear the acclaimed yet affordable Stage I.

JSE  Patented Infinite Slope crossovers assure smooth, sweet detailed sound. Lifetime warranty.

CELESTION  World renowned mini-monitors of astonishing openness and clarity. *Stereophile* recommended component.

CARY  Beautifully crafted tube and hybrid amps possessing exceptional sonic performance. The SLA sets exciting new standards for musicality, affordability.

JEFF ROWLAND  World’s finest electronics for the audio connoisseur who demands the very best. The new Consonance sets the sonic standard for remote control preamps.

Apogee • Ariston • Audioquest • Bel • B & K • Cary • Celestion • Counterpoint • Eminent Technology
Fried • Forte • Fostex • Grado Headphones • Jamo • Jeff Rowland Design • JSE • Kimber Kable • Klyne
Magnum-Dynalab • Melos • MIT • Mod Squad • Monster Cable Alpha • Musical Concepts • Nitty Gritty
Onix • Ortofon • Premier • Precise • PS Audio • Revolver • Rotel • SME • Sonographe • Sony ES • Sota
Stax • Talisman/Alchemist • Target • Tube Traps • Van Den Hul • Vandersteen
Vendetta Research • Wadia • Wharfedale

33 Union Place, Summit, NJ 07901—We Ship Anywhere  908-277-0333

Stereophile, June 1991
no cannons. But the overall acoustic is very intimate, with fairly realistic depth and soundstaging. The reverb sounds real; if it’s fake, it’s the best fake I’ve ever heard. The cymbals, usually the worst-sounding instruments on digital after horns, are clean and present. The piano is the least realistically portrayed instrument here, stretching as it does across the entire soundstage, but it sounds so lovely it’s only slightly distracting. Horns, especially Miles’s, are extremely well-recorded, with great size and sense of acoustic.

But the best-sounding horn of all is Shirley Horn; her voice on this CD will be a revelation to you. On song after wonderful song, she sits there very definitely in front of the speaker plane and seduces you with that sensuality that drives men to buy expensive rigs to listen to female voices like this in the first place. In the same stylistic bag as Betty Carter and, to a lesser extent, Sarah Vaughan, Shirley’s one of the few singers I’ve heard who never make a mistake yet never bore; her phrasing, tone, and dynamics are just so brilliant that I’ve been kicking myself for not knowing about her sooner. Add in her beautiful piano chops, and I want to know why Shirley Horn isn’t as well-known as some of the jazzers who trade jokes with Carson; she’s a great one.

This is late-night, lights-out music, make-out music even. I defy you to play Shirley’s slow, languid take of “It Had To Be You” and not think about the one that got away, and if you think I’m talking about a large-mouth bass, then brother, you need help bad. Branford’s tenor on this track is burnished-gold, less-is-more brilliance that should by all rights be impossible to play until you’ve been through junk and 40 years of blooming in exile in Paris. Brother Wynton gets his in as well, returning the favor after Shirley guested on his Tune In Tomorrow soundtrack; his deft, muted phrasing on “Don’t Let The Sun Catch You Cryin’” is cool blues as only the Automaton His Clean Sef can too, and probably as loose as he’s likely to get without a good hard rolling. Perhaps playfully, his use of the mute recalls his arch-enemy, the man who, frightened out of his hair-ewe by the pre-pube prodigy, once nervously told Wynton’s father Ellis that the youngster should switch from trumpet to something, anything else; the man who gave birith to the cool, Miles! And it wouldn’t surprise me a bit if they found his track on a decades-old reel and dubbed in all the rest; I haven’t heard Miles play this well in a long, long time. Freed of the hard funk vamps and slick grooves of his last few bands, Miles stretches beyond the occasional blat and squawk every 15 minutes of intolerably bad random funk that wows ‘em at all the tobacco jazzfests, and dips into his bag of stark melody, the bag I thought he’d traded ten years ago for that stupid red horn.

You Won’t Forget Me gets my highest recommendation, as it’s the kind of disc that doesn’t come around very often: it sounds as good as the music plays. Look, I like Mötóhead, and I’m nüts over Shirley Horn; I can’t imagine a safer bet. Go buy it!

Thanks, Richard.

—Corey Greenberg

KENNY WHEELER: Music for Large & Small Ensembles

Small Ensemble: Kenny Wheeler, trumpet, flugelhorn;
John Abercrombie, guitar; John Taylor, piano; Dave Holland, bass; Peter Erskine, drums. With: Norma Winestone, vocal; Derek Watkins, Henry Lowther, Alan Downey, Ian Hamer, trumpets; Dave Horler, Chris Pyne, Paul Rutherford, Hugh Fraser, trombones; Ray Warleigh, Duncan Lamont, Evan Parker, Stan Sulzmann, “Julian Arguelles, saxes (* & flute)

ECM 1415/16 (843 152-2, 2 CDs only). Jan Erik Kongs- haug, eng.; Manfred Eicher, prod. DDD. T: 104:25

All of the tensions and contradictions inherent in the very concept of “big band jazz” are present in Kenny Wheeler’s Music for Large & Small Ensembles: improvisational and conservatory styles side by side; the written note vs the inspired line; the division of players into a definite hierarchy of core blowers and rank-and-file chart-readers, session men playing what’s written, no more, no less. Can’t help but think that, ultimately, the listener’s experience is cheapened as much as the players’. Such duly noted prejudices should put my following remarks in perspective.

MLSE’s problems are particularly underlined when compared with Wheeler’s recent The Widow in the Window, the quintet date resulting from these same sessions, and which I raved about last December (Vol. 13 No.12). It’s astonishing how much more music, of such greater depth, intimacy, and downright profundity KW can create with so many fewer musicians. Rather than a concentration and amplification of Wheeler’s potent spirit, which I’ve come to cherish since 1976’s Gnu High, MLSE seems more a watering-down, a spreading-too-thin among 19 players of the creativity, intimacy, and harmonious musical equality that Wheeler usually shares among five, six, or seven musical equals.

Nor does MLSE offer anything in the big-band format you haven’t heard more interest-

2 And women, too; I know plenty who like nothing better than to dim the lights, slip into something black, and put on Aaron Neville. And sometimes they listen to music, too. Buh dum bump.

3 If Harry Connick Jr’s hit version is a numbing Nonoxynol-9 safe-sex condom, Shirley’s is a slow, wet kiss along the back of your neck that makes the hair on your legs stand up and do the hula hula dance.
Audioquest Ruby Audiophile Interconnect Cables
• Fully balanced Hyperllitz cable construction
• 4 solid copper conductors
• 2 for positive & 2 for negative signal
• Heat a dramatic sonic improvement
• 1 meter pair
Our Low Price $79.95 (AQG RUBY1M)

Maxell Metal Vertex 90 Ultimate Audio Tape
• The audiophile tape • Ultra-low modulation noise & ultra-wide dynamic range • Each special limited edition tape is individually numbered & hand-collated.
Our Low Price $74.95 5-tapes (MAX MVO)

Beyerdynamic DT-990 Audiophile Stereo Headphones
• High accuracy dynamic open-design provides exceptional ambience • Very low mass diaphragm & moving coil assembly • Response 5-35kHz • Light-weight • Adjustable headband
Our Low Price $189.95 (BNY DP190)

Sony Super Beta Video Recorder
With Hi-Fi Sound
• For the demanding audiophile • Ultra-sharp picture • Digital memory for special effects including picture-in-picture zoom, multi-strobe & jitter-free freeze frame • 151-channel tuner • Remote
CALL (SON 11848700)

Target Tilt & Swivel Speaker Wall Bracket
• 18 degrees up or down • Swivels left or right • 50 pound rating • May be used indoors or outdoors • Hidden from view when in use.
Our Low Price $29.95 pair (G1611)

NIM 7818
$9.99 Per CD

Other Prima Voce titles also available at 9.99 per CD:
ROYAL OPERA HOUSE
An Early History On Record ... (NIM 7819)
EIDE NORENA ... (NIM 7821)
JOHN McCORMACK IN OPERA ... (NIM 7820)
CARUSO IN SONG ... (NIM 7809)
SCHIPA ... (NIM 7813)

Leslie Dame Compact Disc Storage Unit
• Crafted from solid oak • Holds 576 CDs or 345 cassettes in any combination (also hold 6x video tapes on top 2 tiers) • Includes 8 dividers • Choose natural oak or black
Our Low Price $149.95 (LD COST249/245)

SUMITOMO

ORDER TOLL-FREE 1-800-221-8180 Outside U.S.A. 1-718-417-3737
Order by FAX - 24 Hours A Day: 1-718-497-1791

TO ORDER BY MAIL: SEND MONEY ORDER, CERTIFIED OR CASHIER'S CHECK, MASTERCARD, VISA, AMERICAN EXPRESS OR DISCOVER CARO (Please include Interbank No. expiration date and signature.) TO: J&R MUSIC WORLD, DEPT. SPO691, 59-50 QUEENS-MIDTOWN EXPRESSWAY, MASPETH, QUEENS, NY 11378. Personal and business checks must clear our Authorization Center before processing. Shipping, Handling & Insurance Charge is 9% of total order with a $4.95 minimum (Canadian Orders Add 15% Shipping, with a $9.95 minimum charge.) For shipments by air, please double these charges. $25 MINIMUM ORDER. DO NOT SEND CASH. SORRY, NO C.O.D.'s. NEW YORK RESIDENTS PLEASE ADD SALES TAX. ALL MERCHANDISE BRAND NEW, FACTORY FRESH, AND 100% GUARANTEED. Copyright 1991 J&R Music World

J&R Music World, Dept. SPO691, 59-50 Queens-Midtown Expressway, Maspeth, Queens, NY 11378

Stereophile, June 1991
ing from Gil Evans, George Russell, Bob Moses, or even Dial & Oatts or Frank Zappa. In the "The Sweet Time Suite" that takes up all of Disc 1. Wheeler's melodies are simpler, more direct than those he writes for his smaller combos, but such simplicity is not what I value him for. "Consolation," with Norma Winstone's winsome vocalise, is particularly pretty—but again, I'm used to a lot more than 'pretty' from this man. Things begin to get going with "Freddy C," a series of chromatic changes which builds rolling momentum toward KW's whinnying solo, "Closing." But for most of this disc I didn't write note one, waiting for something to happen.

Disc 2 starts off better, with a shorter, pastoral suite. "Sophie" drives gently as it supports KW's melancholy, knowing solo, Norma Winstone sings her Enya-like lyrics to the Caribbean driftdream of "Sea Lady," and "Gentle Piece" is just that. Wheeler becomes a jazz Delius here, using the large ensemble to paint watercolor chordal washes complemented by Peter Erskine's cymbal surges.

Then things really get going. The final six tracks are from the Widow sessions: five wholly improvised miniatures—two "Trios," three "Duets"—and a wildly freewheeling reading of the standard "By Myself." The Trios and Duets are as immediate and real as jazz gets: totally alive, entirely unpredictable, always exciting. Experiments like these are the essence of jazz: that element of surprise is constant, the perfectly realized structures evolving organically from the confluence of moment and players.

The "Trios" are Wheeler/Holland/Erskine, but even more interesting are the three pianodrums "Duets" of Erskine and John Taylor. Taylor floats into and out of tonality like a cloud adrift. The music is bare, stripped down, totally in the moment after moment after moment, and nowhere so delightfully as in "Duet III," where you can just hear Taylor and Erskine daring each other to finish together—and doing it. The big-band stuff sounds so limp and soggy in comparison I'm amazed ECM released the two dates together.

Running counter to his usual form, Manfred Eicher has miked the Large Ensemble distantly; the results are hazy but convincing. The Small Ensembles are far more closely observed—jazz chamber music for an intimate chamber—and fully in the ECM tradition of life-sized, three-dimensional instruments sitting there between your speakers. Maybe a little euphonically mellifluous for hard-core audiophiles, but the sound is satisfying.

Steve Lake contributes scholarly liner notes, but MISE is a surprisingly pale letdown from someone who has consistently delivered intense, moving, often profound post-jazz music. Lake laments that all of Wheeler's earlier big-band recordings are out of print; if Music for Large Ensemble is representative of his work in the genre, perhaps that's just as well. Music for Small, as the other half of The Widow in the Widow; is a different story altogether.

—Richard Lehnert

DCC DZS-054 (CD only). Steve Hoffman, CD remastering; Hite & Dorinda Morgan, original prod. A/D. TT: 37:57

Just what all us cultural ostriches needed to complete our Beach Boys collections: after sitting in a closet for 30 years, the original master whale-oil–preserved tapes of the Beach Boys' very first recording sessions 'way back in '61—when they called themselves the Pendletones in hopes of scoring some free shirts—have surfaced in (where else?) California.

What we got here is the previously unreleased "Luau" and "Surfin';" lots of alternate takes and studio chatter, "Judy," and the original of "Surfin' Safari" before Capitol goosed it up a whole step and released it to the huzzahs of millions. There's an ur-surf instrumental called "Beach Boy Stomp (aka Karate)" that proves that Carl Wilson, the youngest (15), had his instrumental chops more together than anyone; plus the first recorded version of "Surfer Girl."

These scrapings from the reptile brain of what was soon to be called Surf Music were originally released on producers Hite and Dorinda Morgan's X, Candix, and Randy labels. The music is pretty rough, folks, and the Boys, unrescued this early in their not-yet-career by the squads of studio musicians to come, could only just barely play. Dennis's drums sound like the death throes of a '50s sci-fi hero as he tries to sweat to death with a rolled-up newspaper some awful thing disguised as a pile of empty cardboard cartons.

But wait! Two gems glint among the studio dust-pussies: a totally callow, boy-soprano solo by Brian on "Barbie;" a weepy teen lament by the Morgans' son Bruce (he also wrote "Luau") and released to sink like a Day Care Bill by "Kenny And The Cadets"—ingeniousness, thy name is Brian—and an acapella "Lavender;" by Dorinda, that hearkens back not so much to the Four Freshman as all the way back to the Yale Glee Club its wiffenpoofin' self. "Barbie" is so artlessly innocent it's scary—why did I keep thinking of Klaus Barbie singing "Tomorrow Belongs To Me" in some sun-drenched Munich

Stereophile, June 1991
We are the original mail order phono cartridge and stylus replacement specialists. Since 1972 Lyle Cartridges has helped audiophiles locate replacement stylus for their cartridges at reasonable prices and with excellent service. Our goal is to help those who still prefer to play analog recordings.

SEND SELF ADDRESSED STAMPED ENVELOPE FOR OUR FREE CATALOG.
We still carry 78 rpm replacement stylus for collectors.
DEALER INQUIRIES INVITED

LYLE CARTRIDGES
Dept. S1. Box 158
Valley Stream, N.Y. 11582
Phones Open Mon-Sat 9 am-8 pm

CALL TOLL-FREE FROM U.S. OR CANADA FOR PRICE QUOTES AND VISA/MC ORDERS, N.Y. STATE (516) 599-1112
(800) 221-0906

VST-V $99.95
SHURE V15 V-MR LTD EDITION $139.95
ULTRA 500
SUMIKO BLUE POINT
GRADO SIGNATURE SERIES NEW SIGNATURE HEADPHONES
STYLUS CLEANING KIT FREE with any purchase of $100 or more.* With mention of this advertisement *while supplies last

*ad.
Biergarten?—and even if “Lavender”’s harmonies sound sour, Brian’s arrangement is flawless. The never-played masters were recorded on a now-defunct tape stock that used whale oil as a lubricant. This is clean stuff. But no, sorry, all rumors aside, Lost & Found is not the Beach Boys’ Sun Sessions. For hard-core collectors and pop historians only. You know who we are. 4 Really, folks, the Boys barely knew what they were doing here, but they sound like they had fun barely doing it. Now if they’d only release “Barbie” and “Lavender” as a single... —Richard Lehner

EDIE BRICKELL & NEW BOHEMIANS: Ghost of a Dog

Bo Diddley recently observed that he didn’t understand why the blues—and consequently his work—was suddenly so popular. A colleague did: “Doesn’t matter what color you are—everybody’s got the blues.” If you’re singing them professionally, however, you’re probably black, and Edie Brickell should have known better than to let herself be put about as the heiress-apparent to Janis Joplin.

Jazz, blues, or MOR, signature vocal style usually derives from life experience, and there’s a lot of gospel and hard times inherent in any blues interpretation tougher than a bunch of Girl Scouts humming “Kumbaya” around the camp fire. “I love what Barbra Streisand does with her material,” noted a black singer and musicologist on a PBS special showcasing Eta James, “but I couldn’t do it.”

Which brings us back to Edie, the Winona Ryder of Anywhere, Texas. Compared to the perfectly controlled guided tours through the nightside of love and loss conducted by Sarah Vaughan, say, and Billie Holiday, Edie Brickell rocketing down a West Texas highway to nowhere wondering if the dog in the back of the pickup is going to jump is pretty pedestrian (“Woyah”).

“Mama Help Me” is her bow to Joplin. In it she discovers that most people are “crazy mean” and can’t be trusted, and wonders if she can make it on her own. By the end of the album, so do we. At least she tries to get down and boogie, but her vocal trickbag is so limited it’s almost exhausted in this opener. Edie’s really out of her league. If you can imagine a Tex-Mex version of Greenwich Village retro-poet Suzanne Vega trying to sing like Heart, you’ve pretty much got this album.

Brickell’s somewhere in her 20s, but her views and death-like grasp on bad poetic imagery put her somewhere to the left of 17. Fans of adolescent angst will relish “Forgiven,” where the Christ-child within us all (yes, Edie, we get the reference to the basket of Easter grass) vies with “boomerangs of birds” and “vacant engineers riding trains of thought” in an effort to be forgiven for being just whatever it is it is. Dismissing more advanced concepts like personal struggle, growth, and redemption, Brickell notes that she doesn’t believe the essence of a person changes. “I think it’s the mind that creates the vision of a tarnished soul,” she said in a statement attempting to “explain” the track.

Her political sophistication crests with “Carmelito,” a pleasantly interesting musical reading of a Joe Ely–like story song about sociopathic hispanic banditos. “Better him than me in America,” Brickell observes of the “happy wild and free” Carmelito who, after enjoying the wife of his buddy, dispatches him to the hereafter. This is worked out in a color scheme of red (blood), white (snow), and blue (sky), making one especially glad Ghost of a Dog was cut before we mobilized to liberate Kuwait. Indicating a woman skating dangerously close to the door of battered martyrdom, over half the tracks focus directly on some messy interpersonal relationship somehow characterized as “love.” Clearly Brickell’s true feelings are summarized accurately, if anachronistically, in the album’s final track. “I’m glad it’s just me here by the sea / I’m glad there’s no one here to mess it up for me / But man, I wish I had a hand to hold.” Edie, find a shrink. Don’t tell us.

Only the title track contains a wisp of feeling, a thread of genuine connection. It’s nicely mixed, too—spacious, acoustic in feel, and clean—by Susan Rogers, who created a similar sound for “This Eye.” Rogers has been getting a lot of good work lately (some of the better work for Prince’s Graffiti Bridge). Bob Clearmountain has also turned in his usual impeccable full-dress digital record and mix, and once again the question is why so much production talent was lavished on a band that belongs in a West Texas bar. To date, Brickell’s best work remains her hit from Shooting Rubberbands at the Stars. “I am what I am / Are you what you are / Or what?” those lyrics go, establishing what we thought was a charming examination of honesty and self-assertion. Unfortunately, what we seem to have here is obsession: with Edie, what you see is exactly what you get, and this child-like Empress has no clothes.

—Beth Jacques

Stereophile, June 1991

4 As Richard hands me this month’s Record Reviews copy file, I’m still in shock. I’m looking at the two tickets in my hand that I had no option but to buy. Yup, it’s true. The Beach Boys are playing a benefit concert for the Albuquerque Dukes Triple-A baseball team. On a stand erected over home plate. At the end of the ninth inning, is nothing sacred? —JA
Our 17th century architecture houses a tantalizing array of 21st century audio gear as well as thousands of compact discs.

The Digital Ear offers a distinctive blend of audio hardware, displayed in four elegantly appointed sound rooms.

Our audio/video specialists excel in personal, professional service, offering consultation and custom installation.

In addition, Digital Ear features over 30,000 CD's. You'll find one of the most comprehensive selections of classical, rock and jazz, as well as, country, folk and blues. Open 7 days.

Featuring . . .


Digital Ear, 13011 Newport Ave, Tustin, CA 92680 (714) 544-7903
There’s little doubt CD boxed-set mania, like rock and roll, is here to stay. The attraction to collect, archive, compile, repackage, and inject a second shelf-life with improved (?) sound quality into heretofore forgotten, lost, or previously unissued gems is, for the record companies and our CD-crazed society, too great a temptation to pass up. As last year closed, boxed-set fever reached a new high.

The Byrds’ comprehensive 4-CD Columbia set covers this seminal band’s lifetime, from 1965–1990, and holds enough material to satisfy any completist. There’s all the early greatest, greatest AM hits—“Mr. Tambourine Man,” “Turn, Turn, Turn,” “All I Really Want To Do,” and “It’s All Over Now, Baby Blue.” There’s the longer, more complex material centered on Roger McGuinn’s voice and Clarence White’s distinct, soft-styled wah-wah guitar, tunes like “Chestnut Mare” and “Lover of the Bayou.” There are selections taken from the Byrds’ country/bluegrass period, from Sweetheart of the Rodeo, that saw Chris Hillman assert himself and move toward the formation of the Flying Burrito Brothers.

As is the case with all successful, elaborate boxed sets, The Byrds contains two very important elements, one theoretical, one practical. The practical, easier to spot and judge, offers potential consumers alternate takes, previously unreleased renditions, and “newly discovered” material. Strategically sprinkled throughout each disc, such placement ensures greater sales of the complete set rather than volume-by-volume purchases. The Byrds delivers a total of nine heretofore unheard selections and seven unreleased alternate takes, a respectable enough percentage of the 90 total cuts. This doesn’t include re-mix technology, quite in evidence here, which adds to the collection’s appeal. Putting it succinctly, this configuration will permanently shelf your now-scratched Byrds LPs. The set offers immaculate-sounding music.

The set’s theoretical attraction is the accompanying literature. The enclosed 50-page booklet is extensive and informative, well worth-while. There’s David Fricke’s obligatory historical essay, but more important is the clearly constructed, distilled “Historical Time Line” that allows those of us with fading memories to recall the band’s genealogy, to recall just how influential the Byrds are, and to remember just how many spinoffs sprouted from the initial McGuinn/Hillman/Crosby/Clark/Clarke five-some. These would include: Buffalo Springfield; Crosby, Stills, Nash & Young; and the Burritos.

The Byrds affected not only their direct descendants but a slew of other bands as well, from Pure Prairie League to Poco. McGuinn’s Rickenbacker guitar sound gave birth to Tom Petty and the Heartbreakers and R.E.M. In fact, a good case can be made that these bands are merely Byrds copycats with technological advances. But that’s another story.

In the meantime, The Byrds is well worth its weight in plastic. The band’s stature cannot be disputed. If nothing else, by buying this set you can have a good chuckle when you read that, as late as 1969, Crosby listed his weight at 140 pounds.

—Jon W. Poses

THE HOT SPOT: Original Soundtrack
Miles Davis, trumpet; John Lee Hooker, guitarist, vocals; Taj Mahal, guitar, vocals; Roy Rogers, slide guitar; Bradford Ellis, keyboards; Tim Drummond, bass; Earl Palmer, drums

Waitaminnit—back up. Run those first four by me again, wouldja . . . ? Miles, Hooker, Taj, and Roy Rogers?!? Yow! Get back! Is that a band er wub? Well, yea, though Roy Rogers is a 30-something slide guitarist, not everybody’s favorite ageless, chiseled, squint-eyed, Presbyterian cowpoke. Dennis Hopper has rounded up a bunch of old musical buddies to score The Hot Spot, his neo-noir film, with “original music;” it sez ratcheer on the CD, “composed by Jack Nitzsche.” Well, if this music is “original,” I’ll eat Miles’s shades. Compositions? Songs? It is to laugh. For one thing, you can find the original of “Empty Bank” in Taj’s “Wild Ox Moan” on his 1970 album De Ole Folks at Home. Other than that, these 13 tracks are proto 1-LV-V blues riffs that any guitar jerk with bad posture has already used to peel the paint off the inside of his garage.

I bet this session didn’t take much longer to tape than it takes to listen to, but believe it or not, you’re actually reading a positive review. Hey, this is one comfortable album that you don’t even have to listen to to like. In fact, it’s better if you don’t. Just put it on next time you’ve got the blues and want some old black guys to soothe yo’ mizzable soul by playing slow and loose with the most primal American music there is. Mumblin’ John Lee strews his hoodoo voodoo mess here, moanin’ & groanin’ while a, shall we say, very relaxed Miles backs & fills in the little spaces with inspired crackle-glazed afterthoughts and Taj does his...
Eardrum offers you the ultimate listening experience

Audition the Jadis JA 80s and Sound-Lab A-3s at Eardrum.

ARCAM • AUDIOPHILE CDS • B&K • B&W • BANG & OLUFSEN • SME • CARDAS CABLE • CELESTION SL • CWD FURNITURE • FOSGATE CALIFORNIA AUDIO LABS • ELECTROCOMPAHIET • GRADO • FOSTEX • JADIS • KINERGETICS RESEARCH • MFA • MAGNUM DYNALAB • MOD SQUAD • MONSTER CABLE • MUSEATEX/MEITNER • NAKAMICHI • NAD • NILES • P.S. AUDIO • ROGERS • ROTEL • SIGNET • SOTA • SOUND-LAB • SOUNDWAVE • STRAIGHT WIRE • SUMIKO • SUMO • STAX • TERA • TICE • VELODYNE • WADIA and more...

eardrum audio + video

148 East Route 59, Nanuet, N.Y. 10954 (914) 623-3983
usual hoarse crooning and Nat 'I. Steel string-strangling. Roy is almost too tasteful for such funky company, but hey, I'm easy. Like I say, don't listen to this album, just put it on. This is Old Age musical wallpaper, stained and streaked by whiskey, rainwater, and a little blood. Man, don't even look at the mattress.

Production is simple if not minimal. Best I can say is the instruments sound real and the engineers don't call attention to themselves. Like the music.

These guys could have made this record in their sleep. Maybe they did. Good thing—no pretensions, nothing new, some jive, no bull—shit. What it is. Honestly. —Richard Lehnert

NILS LOFGREN: Silver Lining
Rykodisc RCD 10170 (CD only). Shep Lonsdale, eng.; Kevin McCormick, Nils Lofgren, prod. AAD. TT: 49:34

Sideman's Disease is, aside from the crabs, rock's most dreaded malady. Take a sideman out from under a leader's wing, give him rolling tape and a free rein, and more often than not you get ample reason why he's not the frontman. There's the occasional exception like Phil Collins or the dreaded Don Henley, but usually you wind up with a jazz-blues-rock noodle-fest full of vapid, meandering, simplistically vacant songs that could only be written by someone who's lived on Cheetos in the back of a tour bus for the past 15 years, with song titles like "Lady Luck," "Arabesque Jam," and "Who Am I Anyway?" The thing is, you don't want to know most of these people; unlike many of the truly fascinating, self-invented Rock Stars you love to read endless minutiae about because they lead lives/think thoughts/champion environmental causes you wish you had the time and charisma to yourself, most sidemen are completely boring, emotionally stuffed lost souls with the intellect of a 14-year-old and the writing/singing ability of you when you were in your first garage band. Most sidemen are sidemen for VERY GOOD REASONS, and gladly trade the spotlight for steady gigs and jumbo shrimp cocktails from room service. But there are those who have the courage to dream.

How do sidemen get solo deals? It's kind of like the Reese's Peanut Butter Cup commercial: you've got the sideman walking down the street thinking, "Man, it should be me out in front; Rod/Mick/Bruce can't even play the damn guitar! If only I could concentrate on this train of thought for longer than just these few minutes of confused frustration on my way to get some more Cheetos, I'd BREAK AWAY and do my OWN THING...hmm, should I get crunchy or regular...?" But walking down the side street on a collision course with the sideman is a small record company A&R man, who'd just love to sign a sideman out of Bruce/Sing/Mick's band and sell a few thousand units to B/S/M completists and the vaguely curious, and WHAMMO! They crash into each other head-on, and the result is the Buddy Miles Express.

Nils Lofgren has a long and varied career, both with his own band Grin and as a sideman with Neil Young and, most recently, Bruce Sprinsteen. Nils's forte is that generic, blue's-rock guitar work that's well-nigh indistinguishable from about a couple thousand other sidemen like Ron Wood,4 Tommy Bolin, Robben Ford, Gary Moore, Peter Green, and everyone else who's ever played in John Mayall's band except Clapton. Nils can also do a running flip while still playing his guitar; I saw him do it on MTV.

What can't Nils do? Sing, write, and, reportedly, ride Space Mountain at Disneyland.6 His song titles tell the story best: "Bein' Angry," "Walkin' Nerve," "Little Bit O' Time," "Girl In Motion." The sound's fairly good, but the music's so pedestrian you don't even notice how well it's recorded; 4/4 standard-issue radio-rock with smooth'n'creamy power chords, distorted solos that could all be out-takes from Dire Straits' "Money For Nothing," and a bland dirty whiteboy voice singing inanities like "You put me out, you had no cause, dead you're gonna wish I was." And "Sticks and stones, babe, sticks and stones, sticks and stones will break my bones, but your words, they break my heart, words will break my heart." And "Caught him in Dodge, he was carryin' silver, he never had a chance to deliver, overheard him at the bar, he was talkin' me down, somethin' told me, tonight he'll be sleepin' underground." And the most unbelievable of all, "Remember why we revolutionized? It's black and white in the Constitution."

It's almost too funny to be true, but then the best/worst sideman records usually are. Springsteen, Ringo Starr, and Levon Helm make cameo appearances, but you'd never notice unless you read the liner notes. Levon Helm is one of my favorite drummers of all time; Jerry Wexler once called him the only man who could make drums cry. So why is he confined to half-ass harmonica fills Robert Klein would sneer at? The whole record's this unchallenging, both to the players and the listener, and

5 Now there's a sideman! His work with the Faces and Stones was absolutely classic, but his solo albums are arguably the most musically empty and boring of any sideman in history except maybe Noel Redding's Fat Mattress albums of the late '60s. Ronnie's albums, Gimme Some Neck in particular, define Sideman's Disease far more eloquently than I've tried to here.

6 Although not medically considered a dwarf or midget, Nils is something like three feet tall, and it's been said that this ability to make his frontmen appear taller on stage has been a major component of his success.
once it's over you can't remember a single word or note of it. So you play it again. And again and again and again, hoping, grasping for something to stick in your head so you can hum it at work or something, but it never does! It's Teflon music, mall-rock to walk in time to just like you're in a movie, except I can guarantee you that no matter how little you have going on, your life is like Mardis Gras compared to the comically paltry, smallfry ideas floating through "Silver Lining." Nils says it best in the middle of the title song: "Each day I'm more amazed, at what a funky haze I live in."

Elvis Costello must be sweating hollow-points.

—Corey Greenberg

JONI MITCHELL: Night Ride Home

I know what you're thinking: "Hey, look, Joni Mitchell's so washed up they got the medieval music guy to review her record!" Listen, just because I turn 40 in two days doesn't mean I'm not up to date. I listen to Ferron and Phranc and the Bodeans and the Smithereens and the Replacements and K.T. and k.d. and—I mean, I'm so hip I'm arthritic. So I really dug it when Joni said a couple years ago, "You can't just say, 'I only like the music of the '60s,' and fogy out." Me "fogy out"? No way, lady. The problem was that you were looking for the sound of today in the sterile pop garbage and studio manipulations of Top 40. Thomas Dolby? Willie Nelson? Cut me a break. Maybe the real problem was you were afraid of growing old; well so, by God, am I.

This is the best Joni Mitchell album in a very long time; I heard it for the first time driving to work, and I thought, "My God, it's the real Joni Mitchell." It's as if somewhere between the wretched Chalk Mark in a Rainstorm and this release, Mitchell had a good long cleansing laugh at herself, and came to grips with age and aging, with love and politics. The writing on Night Ride Home regains the intimate point of view that always characterized the best of Joni Mitchell's work; it's also nearly as unself-consciously poetic as those first miraculous songs of her early period. It's about freedom, God, and the passage of time; it's gently melancholic, like Ray Bradbury when he was good. In an age of instant co-optation, it's the product of a fiercely independent spirit. It's also music for grownups, pure and simple.

Some brief ups and downs: the title track is the only real upbeat tune on the record and I like it, even if the imitation crickets are a drag. "Cherokee Louise" is a nice understated tale of childhood friendship that hides an implied subtext of abuse and revenge. "Slouching Towards Bethlehem" is Yeats's "Second Coming" with an effective Mitchell setting, while "The Only Joy in Town" is a fascinating update of "Carey" (from her Blue period). I didn't much like "Ray's Dad's Cadillac"—I mean, c'mon lady, high school was 30 years ago, and who cares anyway? "Nothing Can Be Done" (music by Larry Klein) did nothing for me either, but if you can listen to the opening riff of "Two Grey Rooms," with Joni back on a real piano for the first time in who knows how long, without getting a chill down your spine, you're probably some kind of space alien.

Sound is better than any of Joni's recent releases; arrangements are mostly spare and effective, and while there's still too much processing, it's maybe half of what we've gotten accustomed to of late. The LP is warmer and better than the CD, and you'll probably like it better if you can find it. Fat chance. Anyhow, this is a genuine Joni Mitchell record, and it just don't get better than that.

—Les Berkley

THE TEXAS TORNADOS
Repriese 9 26472-2 (CD only), Bill Halverson y Los Texas Tornados, prds. DDD. TT: 31:19

DIOS MÍO! Los Texas Tornados esta un badass Tex-Mex conjunto y rock'n'roll banda aye ceebe wab wab! Consista de Doug Sahm, Freddy Fender, Augie Meyers, y Flaco Jimenez, cuatro de los muy formidable dudes en la Tejas historia música. "Los Texas Tornados" esta un ejemplo primero de qüe los disco compañia weasels cooking up una Tejano Grupo Supremo por los dinero giganticos; pero who cares cuando la musica esta este matador? ¡Los weasels a Warner Hermanos, GRACIAS!

Los Texas Tornados esta un clasico de la musica funda en los border towns de Tijuana, Nogales, y Nuevo Laredo; parte conjunto, parte Spanish canciones de amor, parte Gulf Coast r&b, parte garaje rock, Tex-Mex esta no como los green ink pens, anillos de Navcom, o los crysurgery. ¡Creo que estoy enfermo! ¡Tex-Mex esta como SEXO! El folleto hasta inclua una lista de los "Gringo Lingo": "Besos" = kisses; "Cerveza" = beer; "Bonita" = pretty; "Chavala" = good-looking Mexican girl; "Texanita" = little girl from Texas; "Qué Paso" = what's happenin'; "Dinero" = money; "Pantalones" = pants. ¡Tengo hambre!

Doug Sahm y Augie Meyers forma El Sir Douglas Quintet en los '60s tempranos, y recuerda los smash hits "She's About A Mover" y "Mendocino"; Meyers los acompanaba con su Vox Continental órgano esta una de los sonidos frios en historica musica, solo-mano definir la palabra "Cheesy". Freddy Fender esta quizá el mas celebre de los Tornados, a causa
de el clásico “Wasted Days and Wasted Nights.” Flaco Jiménez es una maestra de acordeón diatónico Hohner Corona, y ha colaborado frecuentemente con otros músicos, incluido Ry Cooder, Dwight Yoakam, y diversas artistas Tejano para incluidos aquí. El denominación común para los cuatro Tornados esta San Antonio, Tejas, el natalicio de los dudos. El secuencia rítmico esta dos de Austin, Tejas’s mejor: bajo el hombre Speedy Sparks y el batería original de los Fabulosos Thunderbirds, el estupendo Mike Buck. Austin guitarristas Derek O’Brien (Lou Ann Barton, Antones) y David Grissom (Joe Ely) contribuyen acústica y eléctrico apoyo.

Los Texas Tornados esta ¡No! el disco por “audiophile” meetings/Tupperware parties. ¡No! el disco por imaging, soundsaging, y midrange liquidity. No el disco por esta sentarse en el “sweet spot,” inmóvil. Los Texas Tornados esta el disco para las fiestas fuertes, por marca amor a, por las noches cuando usted engulla Cuervo Gold tequila fuera de la botella y dance como you haven’t danced in años. Compra este disco. Cuanto antes. ¡De nada, vato!

—Corey Greenberg

YO LA TENGÓ: Fakebook
Restless/Bar None 76421-1 (LP), -2 (CD), John Siket, eng.: Gene Holder, prod. AAAAAD. TT: 44:24

Does the prospect of listening to an album made by a rock critic tempt you to reschedule that long-postponed root canal? Well, this review may be hazardous to your dental health.

One of Yo La Tengó’s? founders, Ira Kaplan, pays the rent on his Hoboken apartment by writing about music in a variety of underground and not-so-underground publications. I submit that Fakebook succeeds because of his rock-critic leanings, not in spite of them.

The concept here is simple. Just pick a dozen great songs you always liked playing live, add four more of your own, get a few friends together, load the Ampex, and roll tape. The covers in question run the gamut from John Cale to Cat Stevens to Rex Garvin and the Mighty Cravers, but the band’s semi-acoustic presentation is so seamless (and the songs so obscure) that you’d swear they were originals. In that way, I’d liken Fakebook to the Cowboy Junkies’ Trinity Session, although it’s a whole lot more lighthearted. While it’s hard to play favorites, I’d single out Peter Stampfel’s “Griselda,” “Oklahoma USA” from the Kinks’ Muswell Hillbillies, and drummer Emily Hubley’s totally ingenious version of “What Can I Say.” Kaplan tops off this mini-course in rock trivia with an appropriately casual set of liner notes.

Once and future YLT member Dave Schramm earns a special commendation for his country-tinged guitar parts, while Emily contributes lovely harmonies and solid, understated drumming. Ira sings like a rock critic, but he’s careful not to exceed his limited range, and smart enough to avoid the siren song of the Aural Exciter From Hell.

Here’s yet another example of a chump change recording budget paying big sonic dividends. The pure analog sound is a joy. Schramm’s Gretsch sounds like it once had branches and roots, and you can hear the tubes in the loop. A dab of reverb is applied here and there, but producer Gene Holder (late of the dBs) generally keeps it simple. Hubley’s drum kit retains that wood-on-skin sound, and her cymbals keep their brassy sheen. One nitpick is that I’d like to hear Al Greller’s double bass further up in the mix. The CD’s fine, but the LP’s even better, with an even sweeter top end and a better illusion of depth.

Time and again, when my required listening was done, I found myself putting Fakebook back on the turntable. That’s just about my highest recommendation. Who knows, it might even be good enough to make you treat the ink-stained wretches of the rock world with a little more respect.

—Allen St. John

7 The band takes its name (which means “I got it” in Spanish) from a particularly embarrassing moment in New York Mets history, the gory details of which can be found in Chapter Four of Roger Angell’s Five Seasons.
Changing the Standard of Stereo

Some of the many fine products available at the... Reference Room

P.O.Box 57 • Sugarcreek,OH 44681 • Telephone (216)852-2222

RoomTune™ "Passive room treatment, designed by Michael Green..."
Lindsay-Geyer magnetic interconnect
Editor:
In a nutshell, JA's review states: "I couldn't see anything with an 8-bit digitizing 'scope, so there can't be any effect." If everyone believed that, there would be no audiophiles, or for that matter no high-end audio equipment or magazines like Stereophile.

No matter what causes cables to sound different, it must involve transients—that's mostly what the ear notices. So JA's test, if done properly and with adequate sensitivity, should reveal differences among cables. But he couldn't even tell a high-quality audiophile cable from an RS-232 link, so his experimental sensitivity must be completely inadequate.

A question I always ask about audio test equipment is: If I ran a music signal through the electronics in these things, would I like the resulting sound? If not, can the equipment really detect subtle 'audiophile-like' differences? Perhaps that's one reason why engineers can't measure what we're hearing in high-end audio. How do you think JA's 8-bit sampling 'scope would sound as a preamp?

David S. Lindsay
Lindsay-Geyer

I have no quarrel with Dr. Lindsay's or Dick Olsber's statements as to bow Lindsay-Geyer cable sounds, only with the technical story put forward as to why it should sound that way. Dr. Lindsay's letter weaves non-sequiturs into the semblance of an argument but he still fails to address the main point made in my "Follow-Up." Which is: if the transient "echoes" that Dr. Lindsay claims to be present in nonmagnetic conductors are actually at least 68dB below the signal level (the maximum dynamic range of my test setup), why should they be so subjectively important? I await his answer with interest.

—JA

B&W Matrix 800 loudspeaker
Editor:
We at B&W would like to thank Stereophile and Lewis Lipnick for their truly outstanding review of our Matrix 800 loudspeaker. John Atkinson's and Robert Harley's measurements and comments are also very much appreciated. Suffice it to say, this is the highest critical acclaim ever accorded a B&W product. As long-time Stereophile readers know, that is saying a lot.

The design brief for the Matrix 800 was simply to apply the various improvements and refinements which Dr. John Dibb believed could refine the overall sound quality of B&W's vaunted Matrix 801. Also the requisite sensitivity (6dB higher than the 801) and power-handling capabilities (double) were required in order to achieve peak sound-pressure levels of 120dB!

The product's lofty price tag notwithstanding, it is important to note that it was not deemed necessary to "reinvent the wheel" in terms of technology. B&W's own Kevlar mid-range (now widely imitated by others), Cobex cones, and metal-dome tweeter (a larger, higher power handling version was developed here), and, of course, Matrix enclosure technology, were all that was required to achieve, in LL's words, a "study in perfection."

Twenty-five years ago, John Bowers founded B&W on a desire to bring reproduced sound closer to the essence of the music. For B&W, it is the listening experience of musicians like LL, his National Symphony colleagues, and the noted conductor Andrew Litton (not to mention the redoubtable JA and RH) which provides the most gratifying practical confirmation that John Bowers's quest for perfection is actually being achieved. No higher praise is necessary, or even possible!

Chris Browder
Executive Vice President, B&W

Audio Research DAC1 digital/analog converter
Editor:
To add further commentary to Robert Harley's summation that the Audio Research DACI "is clearly an unprecedented bargain" would be gilding the lily. We are gratified that he finds the results of our first effort in the digital arena both musically convincing and cost-effective, and we thank him.

One technical observation might be appropriate. The measured output of the DAC1, at 1.75V, was chosen to allow the volume controls of preamps and line stages to operate in their most linear and sonically least detrimental range. With output above the 2V level, we believe too much attenuation is asked of the typical volume pot—resulting in poor tracking and higher noise at a minimum.

As far as the suitability of this output level for use with so-called "passive" line controls, we would merely point out that it is our belief that an active gain stage incorporating high-quality controls and low output impedance is by far the most practical, and sonically preferable, method of facilitating overall level control with a variety of input sources. Like our other prod-
"MY SYSTEMS ARE DESIGNED TO MAKE YOUR FRIENDS EAT THEIR HEARTS OUT."

 Audition an audio marriage made in heaven: Linaeum Model 9 Four-Tower Speaker Array driven exclusively by Krell Electronics.

 Specializing in custom installations engineered by acoustical and architectural experts.

 A bevy of first-rate recordings featuring the stunning new Lyrita CD's.

 Introducing a Signature Series of Monitor Loudspeakers designed and handcrafted by Dick Sequerro exclusively for Harlequin.

 1-718-479-6155 or 1-800-872-9262

 Major Credit Cards Welcome. We Ship World Wide.

HARLEQUIN

216-11 Kingsbury Ave., Bayside, New York 11364
ucts, the DAC1 is intended to offer truly high-resolution musical performance within the context of real-world practicality.

Thanks again for introducing the DAC1 to your readers. Terry Dorn
US Marketing & Sales Manager
Audio Research Corporation

Sumo Andromeda II
power amplifier
Editor:
We would like to thank Tom Norton and Stereo phile for the time spent accomplishing a thorough review of the Sumo Andromeda II. To receive such favorable comments from a reviewer of TJN’s stature is most gratifying to Sumo equipment owners and those of us dedicated to the continuing development of Sumo products.

It was especially welcome that TJN chose to audition the Andromeda II with an excellent collection of associated equipment. Tom mentioned that the Andromeda II seemed a bit touchier in matching with associated equipment, but we take this as a positive comment. We believe what Tom has discovered is that the Andromeda II achieves a high degree of music involvement with very little coloration. While this may not hide the weaknesses in some area of a given speaker, it will allow the strengths to be fully revealed. The same is true for CD transports, D/A converters, and phono cartridges. Meaning the Andromeda II will be the strength of an audiophile system, never the weakest link that determines the overall sound.

The three-dimensional imaging and overall transparency TJN heard with the Andromeda II is a testament to its low overall feedback design. Such a design presents some special challenges in sub-$2000 200Wpc amplifiers. Many of the improvements in the sound of amps in this price class have come from the elimination of invasive protection circuitry, output-stage current sourcing increases, and increasing energy storage in the power supply. The Andromeda II takes things a notch or two further by using a fully complementary balanced topology and proprietary linearization circuitry. The combination of these two circuit approaches results in an amplifier that is intrinsically clean and wide-band before the application of feedback. As a result, the Andromeda II sounds open and transparent under the highly dynamic conditions of music reproduction.

We suspect some form of ground loop in TJN’s measurement of separation. The left and right channels are on opposite sides of the chassis and the channel separation typically measures in excess of 90dB.

Also, our selection of power-supply rail fuses, which Tom found could be blown into loads below 4 ohms, is not an indication of the driving capability of the Andromeda II. The output-device power dissipation of the Andromeda II is fully five times (1200Wpc) greater than its rated power output, and the amp can deliver considerable amounts of power into 2 ohms. The particular value of fuse we use seldom blows in home use (regardless of speaker type) and gives us a good benchmark as to whether Andromeda II owners may be inadvertently over-driving their speaker systems with its considerable output power.

It is worthy of note that Tom’s approach to reviewing is to tackle the same kind of component mixing and matching that the audiophile consumer faces. Often, one sees amplifier reviews which look to validate prior opinions of associated equipment, rather than investigate the sound characteristics of the amplifier under review. As a result of Tom’s approach, Stereo phile readers have an opportunity to gain useful knowledge as to how equipment under review may sound in their home systems.

Michael Custer

Audio Research SP9 Mk.II
preamplifier
Editor:
We are, of course, delighted that Guy Lemcoe concurs that the sonic improvements brought about by the substitution of the 6D18-H in the SP9 Mk.II preamp are dramatic, musically involving, and cost-effective. We would only add that similar results are obtainable when the 6D18-H is used in any of our other preamps as well. Best of all, the tube still costs just $19.95, and is available through any authorized Audio Research retailer.

While we’re on the subject of vacuum tubes, your readers might be interested to learn that Audio Research engineers are working with representatives of the Shuguang tube works in Beijing to develop an improved series of power output tubes. This is the same factory that produces the 6D18-H.

In our current series of hybrid power amplifiers, Audio Research uses both 6550s and KT88s supplied by the Shuguang plant. Upon delivery to our factory, these vacuum tubes undergo extensive testing and selection before installation in Audio Research amplifiers. This sorting-out process includes over 70 hours of burn-in time in our test fixtures, a series of high-frequency stress tests, and measurement of each individual tube for three different technical parameters. Only when a tube has passed all of these hurdles is it accepted into our inven-

Stereophile, June 1991 281
TRANSPARENCY FACTOR™: RE-DEFINED

"It should be apparent that I like these speakers."

"Music through the Screens was exciting and musically involving."

"...illusion of a soundstage miles deep was reproduced with exceptional spatial detail by the Screens."

"The Screens reproduced bass with depth, dynamic impact, and authority."

Robert Harley - Stereophile Magazine
Vol. 12 No. 7, July 1989

Our pursuit of sonic excellence has led to significant improvement to the Vortex Screen since that review. By adding state of the art transducers to our transmission line technology and revolutionary crossover circuit design, we have re-defined the meaning of the term, Vortex Transparency Factor™.

The new Vortex Screen is now available to the discerning audiophile via our 30-day in-home trial offer, exclusively on a factory-direct basis from our facility. It continues to set new precedence in real value and will do so for many years to come.

For personalized assistance in arranging for your in-home trial, just call:

1 (800) 437-VORTEX

Vortex Acoustics, Inc. P.O. Box 1316 Guasti, CA 91743
tory for eventual use in one of our amplifiers.

The man-hours we spend in testing and selection are the reason our output tubes are slightly more costly than identical tubes offered by some after-market vendors. But it is also the reason why our tubes perform better and last longer in our products than run-of-the-mill alternatives.

Thanks again for your timely follow-up on the SP9 Mk.II. Terry Dorn
US Marketing & Sales Manager
Audio Research Corporation

AudioPrism 8500 antenna
Editor:
We applaud Mr. Sommerwerck's evaluation of our AudioPrism indoor antennas. Each one of our three models has been designed to solve different reception problems. No single antenna design will perform best in all locations.

When a potential customer calls us, or writes for information, our first question is, "can an outdoor antenna be installed?" If the answer is Yes, then our immediate response is by all means install an outdoor antenna. You cannot do better than a rotator-controlled Yagi antenna. If the customer cannot install an outdoor system, then one of the three AudioPrism models may be the best answer. The one exception being, of course, if there is no signal present, no antenna of any design will solve reception problems.

We will be publishing a technical pamphlet that explains FM reception and gives guidelines for selecting the correct antenna.

Sam Lewis Victor Tiscareno
President AudioPrism Engineer

Arcici Superstructure component rack
Editor:
Thank you for including our Superstructure Component Rack System in your "Recommended Components" section (April '91).

However, I believe you have confused the Superstructure with the prototype of our new Upscale Component Display System that we exhibited at the WCES.

As you may recall, during a conversation that JA and I had at the show, I had pointed out that, although the Upscale offered certain distinct advantages, we did not recommend it for phono turntables because we felt that it lacked the "ultimate" in torsional rigidity. (This, by the way, to a large extent, has been corrected in the production unit.)

The Superstructure, with its canted upright supports, was specifically designed for torsional stability and, in fact, for that reason, is highly recommended for turntables. In addition, the optional Zorbex-damped Isolation Platform does an excellent job of decoupling the turntable from its environment.

"Recommended Components" is one of the best-read columns in Stereophile. Therefore, we very much appreciate the honor of having our products selected for inclusion. However, an erroneous comment can be damaging and we thank you for this correction.

Ray Shab
Arcici, Inc.

Dynavector XX-1L phono cartridge
Editor:
I want to thank Stereophile and Thomas J. Norton for a thorough and well-written review of the Dynavector XX-1L phono cartridge (May 1991, Vol.14 No.5). I find Mr. Norton's observations on the sound of the XX-1L quite similar to my own. However, there are several points in his review that merit further discussion.

Mr. Norton comments on the rather inconsistent distribution of Dynavector phono products in past years. While Dynavector has been in constant production, the various distributors may have caused it to appear that the product was in jeopardy. This was not the case. Rather, this perception was caused by the unstable nature of the prior distributors. Muse was given the opportunity to become the Dynavector distributor a year or a half ago; this we gladly accepted. As Mr. Norton comments that he was "impressed by its openness, transparency, and detail," we too found these qualities present in the Dynavector cartridge line. If for no other reason than the respect this product has earned, we feel committed to representing these fine products. We hope that our commitment will displace any reservations that might have been caused by the actions of any prior Dynavector distributor.

This brings me to the most important issue of this review; the ever-present debate of musicality vs. accuracy. Mr. Norton's observation of "laying bare the flaws of less than very good recordings" indicates that he found the XX-1L accurate enough to hear through the recording chain. This is certainly high praise for any component, and would indicate that the XX-1L is a highly transparent and accurate cartridge. Whether it is possible for a product to "slightly exaggerate them" is a matter best left to a first-hand (make that first-eat) experience. Mr. Norton's comment that the XX-1L "demands to be used in a compatible system" is certainly true. I found that phono cartridge/tonearm/turntable combinations are perhaps the best illustrators of the phenomenon of product interaction. His final comment that "It will not 'glamorize' or

Stereophile, June 1991

283
CHESKY JAZZ
NOW ON LP

YOU CAN HEAR THE DIFFERENCE
THESE TWO RECORDS ARE MADE FROM THE ORIGINAL MASTER ANALOG TAPES. MASTERCED BY TIM DE PARAVICINI ON AN ALL TUBE CUTTING LATHE.

ANA CARAM
RIO AFTER DARK
JD/JC/JR28

CLARK TERRY
PORTRAITS
JD/JC/JR2

New Jazz CD'S

NOW THE GAP GETS EVEN CLOSER. NEW AND IMPROVED—128X OVERSAMPLED CD'S!

NATASHA
JD48

PHIL WOODS
THE LITTLE BIG BAND
JD47

JOHN PIZZARELLI
MY BLUE HEAVEN
JD38

DAVID CHESKY
NEW YORK CHORINHOS
JD39

Chesky Record CD's, Audiophile LP's and Cassettes are available in Fine Audio and Record Stores, or order direct with Visa, MasterCard by calling 1-800-331-1437 or 212-586-7537, or send check or Money Order: CD's $14.98, LP's $16.98, plus $3.00 postage and handling. (Add 8 1/4% tax in New York State).

To: CHESKY RECORDS Radio City Station, PO Box 1268, New York, NY 10101
'prettify' marginal program material" sums up the XX-IL quite nicely. This is exactly what any fine audio component should do—nothing more, nothing less.

Mr. Norton's measurement of a difference in "interchannel crosstalk" is a perfect illustration of the necessity of an azimuth adjustment feature on all fine arms. It is rather difficult to insure that the relationship of the stylus to the cantilever, and the cantilever to the coil assemblies, are maintained in an exact, perfect relationship. Left-to-right and right-to-left separation can be improved by using a tonearm like the Graham 1.5 or, better yet, the Wheaton Tri-Planar (both of these possess an azimuth adjustment). When the crosstalk is optimized, the size and shape of the soundstage is simply stunning.

One final comment: Tom Norton refers to Reaching Out from the Inside, a very fine direct-to-disc recording by Cardas Records (CR 5813). It should be noted that Kip's last name is Dobler, not Tobler. This might become of importance should anyone search for the recording by artist instead of number.

Kevin Halverson
Muse Electronics

KEF R107/2 loudspeaker
Editor:
T33 is our generic name for a tweeter having an overall diameter of around 33mm, just as there are several B10s and B200s.

As regards the HF contour, JA's findings totally vindicate the design objective. This control operates on the mean frontal energy response (hemispherical) of the speaker, and is specifically designed to operate on those characteristics of the speaker that are going to be affected by the room, namely directivity. It compensates for different reflective/absorptive room characteristics, and for differing listening positions. In a dead room, the on-axis response is of primary concern, off-axis energy being absorbed by the damped nature of the room. Conversely, in a live room the off-axis energy reflected around the room contributes more to the overall sound of the speaker. This control modifies the energy fed to the speakers to take account of these conditions. It operates in the area where sibilance can be troublesome, and where strings can become hard. Simply put, in a dead room you would turn the control up, and in a live room, particularly at a distant listening position, you may well need to turn it down. In fact "flat" (ie, 12 o'clock) on KUBE is not flat at the speaker. Speaker "anechoic flat" is about 4 o'clock on KUBE. The 12 o'clock position is an "average room" setting.

This is all borne out by his finding with and without the Abfusors, which, of course, themselves modify the room, necessitating a resetting of KUBE response.

It's always very difficult to talk about notions of "flat" to people who don't fully understand the implications. Label a variable control "flat," or give it a center detent, and people will be reluctant to deviate from this idealized notion of "flat," while at the same time complaining about the gross response aberrations the control was designed to eliminate! Flat should be redefined as "the desired response." We are immensely gratified to hear that JA feels the revised 107/2 touches the soul of both music and listener—isn't that what enlightened listening to recorded music is all about?

Oh, and John, don't forget to try the bass line on "In Memory of the Martyrs," by Barclay James Harvest.

David Inman
KEF Electronics of America, Inc.

Tice TPT Clock
Editor:
I normally do not believe that editorial comments deserve responses from the parties involved. However, I found JA's diatribe "Of Clocks, Gravity, and Audio Dragons," and his postscript to the TPT Clock review (both in March 1991) so intentionally pretentious, biased, and contradictory that I cannot allow his comments to go unchallenged.

I was most displeased with his thinly veiled attempt at subterfuge by associating Tice Audio with Peter Belt, who is considered by most audiophiles to be a charlatan and fraud. This is evidence of his deliberate intent to discredit Tice Audio and TPT. Guilt through association? Any time the press wishes to discredit a person or an idea, they associate them with Peter Belt. How obvious! This all seems like déjà vu.

It was only five years ago that we introduced the Power Block and Titan (power-line conditioning system). They have now become the standard by which all others are judged. When we first introduced them we met with the same skepticism. You would think we would be getting used to this by now. John, quotes like: "But when the price is high and the explanation is bullshit, life's too short! File it away in your pending tray until someone else you trust tries it out" are, at best, foolish. This is the same "if my mind can't believe it my ears can't hear it" attitude taken by much of the mainstream press today. If audiophiles had followed JA's "Law of Effective Tweaking" 15 years ago when expensive specialty cables first began showing up in the marketplace, no one would have ever tried them. Yes, they were expensive and the explanations often did sound like "bullshit." John, your "bullshit" comment, besides being
WE REFUSE
To begin designing high-end audio components that are based on integrated circuit operational amplifiers.

DID YOU KNOW
That SUMO is one of the select few US manufacturers producing reasonably-priced, fully-discrete components? While IC op-amps have improved, they still cannot match the performance of properly-designed discrete circuitry:

- Discrete circuits can operate with much lower amounts of feedback (as much as 60 dB less!)
- Discrete circuits allow access to the individual gain stages, allowing proper compensation and local feedback
- Discrete semiconductors are superior to individual IC devices, with much better gain and linearity characteristics
- Discrete circuitry can be used with much higher supply voltages than IC designs, allowing greater headroom and dynamics
- Discrete circuitry can be designed to operate in class-A and drive difficult loads, which even the best ICs can't do without additional discrete components

Thus, all things being equal, a fully discrete design promises better performance.

LISTEN
And decide for yourself. The Athena II preamplifier is fully discrete, fully complementary, features a bandwidth of over 1 MHz, and can swing 50 volts peak-to-peak into a 600 ohm load, for virtually unlimited dynamic range.

Sumo products are proudly made in the USA.

West Coast: The Sound Company, Locations in San Diego County, (619) 582-4148
East Coast: Sound Advice, Locations throughout Florida, (800) 226-4434
crude, demonstrates your personal dislike and bias against our TPT technology.

Why would Stereophile be making a concerted effort to see that the TPT Clock fails? I believe the answer lies within the first paragraph of JA's remarks: "You know—the kind of mystic pseudoscience that gives high-end audio a bad name. The tweaks and treatments that make it harder for this industry to become accepted out there in the 'real' world." Since Stereophile is going after the readership of the mainstream audio magazines, it certainly would be difficult for Stereophile to justify saying anything positive about a technology which, on the surface of it, seems hard to believe.

We feel strongly that JA has significantly stepped over the line separating objectivity from his own personal prejudice. It is therefore with great reluctance that we inform you of our intention to suspend advertising in Stereophile. It should be understood that our decision is not due to Tom Norton's negative review. It's just that we feel JA's crude "bullshit" comment and his attempt to associate Tice Audio with Peter Belt are displays of his own personal prejudice against our product. We feel personal prejudices have no place in an open forum like Stereophile. John, we feel strongly that an apology is in order.

I urge readers to rely on their own ears and decide for themselves. This may come as a shock to many audiophiles: equipment reviewers are not omnipotent God-like creatures whose words come down from the mountain carved in stone. All of our dealers will allow you to try a TPT Clock with a complete moneyback guarantee. You have nothing to lose.

It is important for Stereophile readers to know more about the circumstances surrounding Tom Norton's rather uninformed TPT Clock review. In an effort to brief Tom on some of the new advancements regarding the TPT technology, I called Tom at least six times during the last three months. To my dismay he refused to accept or return any of my calls. Out of total frustration I called Robert Harley. At that time, I indicated that the TPT technology could also be applied to cables, recording tape, and even CDs. I suggested Mr. Harley send along some sample items which we would treat and return to him in an effort to validate the TPT process. Mr. Harley agreed that it would be a great idea. Were any items ever sent? No!

Tom, you attended the 1991 Las Vegas CES. We were later informed that you were in the room next door to ours for half an hour auditioning speakers. Couldn't you have stepped into our room to learn more about the TPT technology? After all, you were in the process of writing the TPT review. How can we substantiate our technology if no one at Stereophile is willing to learn!

Tom Norton (Stereophile's technical editor), in his original draft of the TPT Clock review, deemed our explanation of electron flow and the TPT technology to be "off the wall" and lacking "credibility." Tom scoffed at the idea that electrons flow in a somewhat random and chaotic manner. As soon as we sent Tom documented proof of random electron motion, he then saw fit to change the final draft of the review, indicating that he knew it all along. (Sure, I Knew That!) Mr. Norton, this is kindergarten-level electronics that you should have known. Had you been interested in learning the truth, we would have gladly treated interconnect cables or other items to demonstrate to you and John Atkinson, once and for all, that the process has nothing to do with digital noise, Radio Shack clocks, or air ionizers. How absurd!

Quite frankly, Tom, your actions remind me of that old adage, "my mind is made up—please don't confuse me with the facts!"

In closing, I would like to go back to the quote used at the top of John Atkinson's "As We See It" column: "When a true genius appears in the world you may know him by this sign: that all the dunces are in confederacy against him." I do not consider myself a genius, but as to the rest of the quote, well, if the shoe fits...

George & Francine Tice
Tice Audio Products

I discuss the TPT effect in this month's "Letters" section, but there are three points raised by the Tices to which I must respond.

First, I don't give a damn about whether or not Tice advertising appears in Stereophile. In what media a manufacturer chooses to place advertising should be a pure business decision. I assume that the fact that we received Tice's advertising for their Titan and Power Block was not connected with our positive review of those products; if the Tices feel that withdrawal of advertising is how they will "punish" Stereophile for my negative comments about their TPT Clock, then good luck to them.

Second, Tom does not scoff "at the idea that electrons flow in a somewhat random and chaotic manner," only at the idea that a digital clock—or a CD!—can fundamentally change the behavior of those electrons. And as to non-communication, in view of George Tice's statement that it wasn't necessary to understand how the TPT Clock worked, only that the reviewer should listen to it, TJN didn't feel that further communication was necessary once he had a clear understanding of how the TPT
**In-House Test Lab ★ 30th Year of Tube Sales**

**Prices subject to change.**

### POWER TUBES

<table>
<thead>
<tr>
<th>Tube</th>
<th>Singles</th>
<th>MP</th>
<th>MQT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6L6G</td>
<td>10.00</td>
<td>20.00</td>
<td>40.00</td>
</tr>
<tr>
<td>6L6GC</td>
<td>25.00</td>
<td>50.00</td>
<td>100.00</td>
</tr>
<tr>
<td>6L6G (China)</td>
<td>12.50</td>
<td>25.00</td>
<td>50.00</td>
</tr>
<tr>
<td>6L6F6</td>
<td>22.00</td>
<td>44.00</td>
<td>88.00</td>
</tr>
<tr>
<td>EL34</td>
<td>15.00</td>
<td>30.00</td>
<td>60.00</td>
</tr>
<tr>
<td>EL34 (China)</td>
<td>12.00</td>
<td>24.00</td>
<td>48.00</td>
</tr>
<tr>
<td>KT88 (China)</td>
<td>25.00</td>
<td>50.00</td>
<td>100.00</td>
</tr>
<tr>
<td>300B</td>
<td>225.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6550</td>
<td>19.00</td>
<td>38.00</td>
<td>76.00</td>
</tr>
<tr>
<td>6550A</td>
<td>30.00</td>
<td>60.00</td>
<td>120.00</td>
</tr>
<tr>
<td>7591A</td>
<td>25.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6922</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PRE-AMP TUBES

<table>
<thead>
<tr>
<th>Tube</th>
<th>Singles</th>
<th>MP</th>
<th>MQT</th>
</tr>
</thead>
<tbody>
<tr>
<td>5AR4/GZ34</td>
<td>15.00</td>
<td>12AT7</td>
<td>6.50</td>
</tr>
<tr>
<td>5U4GB</td>
<td>20.00</td>
<td>12AU7A</td>
<td>(El) 6.50</td>
</tr>
<tr>
<td>6AN6A</td>
<td>12.50</td>
<td>12AX7</td>
<td>(El) 6.50</td>
</tr>
<tr>
<td>6FQ7/6CG7</td>
<td>16.00</td>
<td>12AX7A</td>
<td>(China) 6.50</td>
</tr>
<tr>
<td>6DJ8 (Jan Philips)</td>
<td>12.00</td>
<td>LM-12AX7/A</td>
<td>(Low Noise) 12.00</td>
</tr>
<tr>
<td>6DJ8 (USSR)</td>
<td>10.00</td>
<td>12BH7A</td>
<td>14.00</td>
</tr>
<tr>
<td>6JK6</td>
<td>14.95</td>
<td>5751</td>
<td>7.50</td>
</tr>
</tbody>
</table>

**Shipping & Terms**

- 2nd Day Air $11.75
- Ground UPS $9.75
- UPS COD - Cash or Cash in Advance/Money Order/Cashier's Check/Cash/Visa/MC accepted
- 7% Sales Tax in CA

**World-Wide Shipping**

ARS ELECTRONICS
Electronic Tube Specialists
7110 De Celis Place • P.O. Box 7323
Van Nuys, California 91406
Fax: (818) 997-6158 • (818) 997-6279
Clock was to be used, given his skepticism about the explanations offered.

Finally, and most importantly, comparing the TPT Clock with cables is irrelevant. In the late '70s, when the first audiophile cables appeared, their effect was immediately recognizable, easily demonstrable, and didn’t depend on the listener having to place his or her faith in a pseudo-technical fairy story.—JA

Modjeski, Music Reference, VTL, & tubes

Editor:
Oops, sorry. Didn’t mean to start a war. Please print this public apology to Mr. Manley for my letter in the September 1990 issue. I was very busy at the time preparing for my visit to the EI-RC tube factory in Yugoslavia and did not have time to draft a more careful reply to Mr. Manley’s letter in the February 1990 issue. At first reading, I thought it needed no reply and was simply going to let it lie. However, an associate of mine felt that Mr. Manley’s letter must be answered, so I hastily summarized the points on which I disagreed with Mr. Manley technically.

Further, I thought Mr. Manley’s term “Tube Rollers” was quite humorous. It inspired me to create the Nimble Tube Roller Society. Mine was an honest effort to respond to Mr. Manley’s first letter in kind. I am truly sorry that he missed the spirit of fun in my reply—and that is the extent of my apology. I stand by the technical content of my letter.

After reading Mr. Manley’s December 1990 reply, I am still not certain what accusations he has leveled against me, though my ears are still ringing at their volume. A large part of the letter concerns would-be modifiers and “mumbo jumbo spread by tube merchants that pushes up tube prices, helps keep consumers in the dark, causes them worry . . .” I am not sure if the parenthetical “(not RAM)” exonerates me or not, but I shall say that, first, I write sound technical articles with the aim of illuminating the truth. Second, I always tell my customers where a tube was made (regardless of where some “tube merchant” told me it was made). Third, I have not purchased an interest in any tube factory. Fourth, contrary to the inference of Mr. Manley’s letter, tubes are available “with the simple correct (and complete) facts” from RAM Tube Works.

Mr. Manley and I appear to have very different philosophies and experiences of the tube and amplifier business. Readers of this magazine know I have published many articles sharing my research in this field. In actual fact, business comes second in my life, as my main interest is research, experimentation, and teaching. At Stanford University I taught while doing my graduate work in electrical engineering. I have made my technical research available to anyone upon request, and it is in this tradition that I offer this letter.

Fortunately, a new design comes out of my studies every few years. The Music Reference RM-9 is the first power amp with compensated bias, three-position feedback flat-calibrated in each position, direct-coupled fully differential 2-stage driver, and an output stage tolerant enough to accommodate several output tubes without sacrifice in quality. It took a great deal of research and thought to see that these output tubes (6550, KT88, KT77, EL34) are more alike than different. In fact, as we test thousands of these monthly, we see that their bell curves for bias and Gm actually overlap. A low-bias 6550 tests much the same as a high-bias EL34, yet they sound different. No doubt—they are very different structurally, but then so are a GE 6CA7/EL34 and a German EL34.

My discovery was that an amplifier with a wide-range bias adjustment (a good thing), a stable feedback loop (another good thing), an output transformer that matches the combined safe limits of tube voltage and current (which are virtually the same for the types mentioned), was quite feasible. I did not say “easy.” It took two years to work out the details. Knowing this, I could make a dozen variations on the design in short order, but I’m really not interested in a family of amplifiers. The RM-9 is nine amplifiers (or more) in one, and is also a 200W monoblock with nine variations.

On the technical front, I am still awaiting solid evidence to support Mr. Manley’s concerns about “tube swapping.” I did not and do not recommend “tube swapping” in any amplifier but my own RM-9. The examples cited by Mr. Manley—6146 and 7027A—are extraordinary and, of course, do not even plug into these circuits without rewiring; nor do they have the characteristics of a 6550/KT88 or EL34.

I recommend only certain tubes as usable in my amplifier. Obviously, as Mr. Manley points out in his letter, audio customers are interested in “tube swapping.” However, the 6L6 (which I do not recommend) is an interesting situation. It can be used in my amplifier in a pinch with no difficulty. The reduced heater current is no problem. My filament winding is well regulated (3.3% change from no load to full load) and well within the ±10% required by the tube’s specifications. In my amplifier, all element ratings are within the design maximums of this tube. The user need only adjust the bias and multiply the output tap impedances by two. Thus, the 4 ohm tap would be used for an 8 ohm speaker. This is done to properly “match”
the tube to the load. As revealed by the published 6L6 characteristic curves, $I_{\text{A(max)}}$ is about one half of the KT-88/6550/EL-34. All else is similar. The complete formula for $R_{\text{pp}}$ (plate-to-plate load resistance)—i.e., matching resistance—is given later in this letter.

The second issue he raises is even more unsettling. In my research on tubes from GE, Sylvania, RCA, Siemens, Mullard, China, El-RC, and the USSR, I have seen great reliability problems with screen grids (G2) operated over 450V. We buy the same tubes from the same sources. However, what I do with them is quite different.

The problem with operating tubes beyond their voltage rating is this. If a given manufacturer publishes a 450V maximum screen grid voltage, he is promising that every tube that leaves his factory has been tested to that value or higher and that a designer, manufacturer, or user will have no trouble achieving good results at that voltage or below. No doubt some percentage of samples will operate safely at 500V, some smaller number at 525V, and so on. But above 450V the tube manufacturer is making no promises. A commonly made design mistake is to re-rate a tube to a higher voltage based on a single manufacturer or particular batch which seems to take it. I would love to make amplifiers with $B+\over 450V$. I could give the customer more watts for the same cost. But will tubes from the next batch or some other manufacturer have the same excess voltage margin? I wouldn't bet my nickel on it.

I stick to the published, universally accepted rating for each tube. I do not "rate tubes differently" than the manufacturer—it is not my place to do so. Even if I could convince a manufacturer to special-test and give me the cream of the crop, what would the owner of my amplifier do if something happened to me or my supplier? I design amplifiers so that any 6CA7, EL34, 6550, KT88, or KT77 that adheres to the standard characteristics and ratings will work well. The fact that VTL does not recommend "Continental Slimmies" for use in their amplifier because "we run EL34s at 500 or 525V" is not evidence that they are an inferior tube (p.65, The VTL Book, 2nd edition). It is also interesting to note that the 6CA7/EL34 data sheet (Appendix NN, VTL Book) rates that tube at 425V maximum screen (G2) voltage (fourth line of "Ratings"). It appears that Mr. Manley has up-rated the tube by 75–100V. In a review of VTL's Ichiban in Issue 61 of The Absolute Sound, the reviewer states, "while the Ichiban uses a 560V rail, the output tubes are not overdriven." I assume that this triode design is of the standard type where screens are connected to the plates and are, therefore, at rail voltage (560V!). I wrote a letter to the Editor of that magazine, enclosed the Amperex (creator of the EL34) Data Sheet and pointed out that they are indeed overdriven by 135V (32%). To my knowledge, the letter was never printed.

I was further shocked to see a great discrepancy between VTL's circuit values and published ratings which are reprinted in The VTL Book. In Appendix L, Part D (VTL Book), the values chosen for VTL's output tube G1 bias return resistances (grid #1 circuit resistances) for the various amplifiers range from 274k ohm to 475k ohm. May I call attention to Appendix OOO, where the maximum rating (for fixed bias) is 50k ohm? A little bit of gas in the tube (which is bound to occur as the tube ages) will cause a shift in bias, and in the presence of large signals (loud music) can lead to bias runaway and a glowing red plate. If the amplifier is shut down immediately the tube may survive, but will be prone to the same behavior. However, tubes aged to this point can still be used in an RM-9 or Audio Research amplifier where the G1 circuit resistances are the recommended value of 50k ohms. In my opinion, it appears obvious that VTL amplifiers will consume their tubes at a much faster rate than amplifiers designed with the proper grid-circuit resistances and screen voltages. I offer this in the spirit that "constructive criticism is highly valued by us at VTL." (Mr. Manley's letter, Stereophile, February 1990.)

Mr. Manley's third concern: "There are such matters as plate impedance." Well—what about it? He brought this up, and I'm still waiting for some answer. Plate impedance does affect output impedance (damping), but it is not what one matches through an output transformer. The matching impedance is simply $R_{\text{pp}} = 4(B+ - E(\text{min}))/I_{\text{A(max)}}$, where the $B+$ is the supply voltage, and $E(\text{min})$ and $I_{\text{A(max)}}$ are the voltage current at the knee of the $V_{\text{Gi}} = 0$ plate curve. It has absolutely nothing to do with plate (anode) impedance; there's nothing "loose" about that formula. My report "Comparison of KT88 types" gives the optimum load (matching) impedance for the four types tested and with the optima being 6500 ohms for MOV, 4600 ohms for China, 5500 ohms for Sylvania 6550, 6500 ohms for German EL34, and 2800 ohms for VTL's KT90. May I point out that my swap of EL34 for MOV KT88 is an exact match and that my Sylvania and China swaps are far closer than VTL's KT90 at 2800 ohms—a mismatch of 2:1.

The production figures previously quoted are obsolete; I would like to update them for the record. Our current production of equipment is about 300 pieces per year, which suits me just fine. My goal is not to produce vast
quantities of audio equipment in innumerable variations to appeal to every conceivable end user. My goal is to offer the sophisticated audiophile the most carefully designed and built, reliable, user-friendly audio equipment possible.

The other half of my sales is in RAM Tube Works. We presently buy about 50,000 tubes a year, the bulk of which go happily to the replacement market with wide acceptance. RAM Tubes has been a rewarding business for me and remains the only supplier of tubes that are computer tested, matched, and supplied complete with data to the user. I am pleased when I see in the pages of Audio Mart quality used equipment advertised "with RAM tubes." I am also constantly rewarded by our customers' praises of our tubes.

Mr. Manley seems to misunderstand me, though. I do not "imply" that "smart audiophiles should opt for matched output sets." I state it directly! In fact, I wrote a paper on it titled, "The Virtues of Tube Matching." It is available to anyone, including this magazine, for publication. As to Mr. Manley's "biggest problem with single bias controls and tube matching," and not having a "crystal ball" in his "comprehensive range of test equipment," I don't have or need one. My research confirms that a two-way match of bias and transconductance will result in similar aging and retained matching. "And how does one go about replacing just a single failed tube?" Just call (805) 962-4445, give two numbers off the computer label on the end flap of the RAM tube box for the failed tube, and an identical tube will be on its way that day. You can even order a spare or two to fit your set. And, only if you want to experiment, you can buy "a whole damn 'big band' of matched output sets," rather than a "range of amplifiers."

Upon further reflection, I recalled that the accepted US industry translation of STR is Special Tube Request, not Special Test Requirement. I credit Mesa Boogie with making the term popular (though the term predates them). To them, Sylvania, and me it designates a variant of tube made in answer to a special request of a customer. The Sylvania STR 415 and STR 387 were extremely rugged tubes with 6L6 characteristics, specially designed to withstand the abuse of guitar amplifier service. I have many of my own. Yet I feel it is a disservice to customers to design amplifiers around nonstandard tubes which have uncertain and limited availability.

I did not intend to cause anyone to believe that the "tube industry is in a shambles," although in my opinion, it is obviously not what it was in the 1950s and '60s. Out of my concern to secure future suppliers as remaining reserves of Sylvania, Mullard, RCA, and GE are depleted, I got involved with EI-RC of Yugoslavia. I liked their small tubes (12AX7, 12AU7, 6DJ8) a great deal and have been using them for years. Many of the Telefunken-branded 12AX7's were made by them. They made a broad line of TV types under Philips license using Philips equipment and tooling designs. Unfortunately, only one of their audio output types—the 6BQ5/EL84—is a Philips design, and it is excellent. Their EL34 is a hybrid (a tube made up from parts of other tubes), and I, sadly, cannot recommend it. I find the characteristics do not conform to published EL34 characteristic curves and are undesirable for good-quality amplifiers (though we are working with them on a replacement for this tube which addresses these issues). Sadly, the KT90 has many of the same problems. I have included a full report on both types to verify these statements for your publication if you wish. These tests took many hours to perform. The results produced much emotional anguish. I do not wish to insult anyone and certainly do not wish to offend the EI-RC factory which has kindly agreed to produce my tube design as a large part of their audio tube offering for the coming year. I must, however, call them as I see them.

According to EI-RC, Mr. Manley made two brief visits to the factory. The tube was already in development before he came; they told me that his contribution to the project was to become their first customer for the KT90. What really confused them—and worried me—was that shortly after I sent them a preliminary test report on samples of KT90 and 6L6 tubes in July stating that both needed a great deal of correction in characteristics and ratings, Mr. Manley informed them that the KT90 was "the greatest audio breakthrough of the decade." I spent two weeks talking with these very same people. They admitted that they had reservations about the KT90 and knew that their EL34 was not accepted by knowledgeable audio or music professionals. They simply said, "Well, that's why we asked you to come." I asked why they released the KT90 when samples sent to a number of users had resulted in comments similar to mine. The answer? They released it to Mr. Manley simply because he had the money and they needed the business. The truth of the KT90 is a painful truth for me. I would like to recommend it to support the factory. I have formed close relationships with the people there and I am committed to working with them to develop a premium line of tubes. Yet I am also dedicated to "truth in audio," and feel compelled to share the results of my tests of the KT90.
In the three and a half decades since the arrival of stereo, no one has done more than J. Gordon Holt to develop and define a consistent vocabulary for describing reproduced sound. This is actually two dictionaries in one: a glossary of subjective audio and a comprehensive plain-English guide to nearly two thousand technical terms. If you aren’t exactly sure about “liquid” midrange or “hard” sound, or find yourself puzzled by an unfamiliar word or alphabet-soup abbreviation, you’ll find a concise explanation in this handy, compact reference volume.

But watch out! When you least expect it, Holt’s dry humor emerges. You’ll learn that a cassette is “a small cass,” a chube is “a British tube,” and a code causes “blockage of the dose.” Whether you chuckle or groan, you won’t be bored!
I would like to review VTL's claims for the KT90 as written in a direct-mail advertisement to owners of VTL equipment:

1) "The gorgeously smooth sound and rugged reliability of the legendary, genuine, British Gold Lion KT88;"
2) "We have something better...this tube can simply be plugged into your amplifier in place of the 6550s;"
3) "The VTL KT90 Power Tube—an almost 50% upgrade of the 6550A and 15% upgrade of the British Gold Lion KT88."

Point by point, my concerns are:
1) The KT90 doesn't come close to the British Gold Lion in the laboratory or the sound room!
2) This sounds like Nimble Tube Rolling—do we have a new member?
3) A 50% upgrade of what?

For those interested in some real, hard data, my test report compares the MOV KT88, Chinese KT88, Sylvania 6550, and the VTL KT90. Included are actual measured characteristic curves, notes on the curves, and an article on how the curves were made and what they mean. There is also comparative testing in various amplifiers on the bench and in the sound room. It represents about 100 hours of research, testing, and study.

I challenge Mr. Manley to support his claims about the KT90 with something that can be confirmed by anyone knowledgeable in the field. I also request that he drop the "KT" designation. That mark belongs to a fine family of "Kinkless Tetrodes" to which the KT90 does not belong.

I am pleased to see Stereophile add Robert Harley's technical input and a philosophy that measurements have value. Without them, all we have is opinion. Roger A. Modjeski

Music Reference/RAM Tube Works

Manley, VTL, & RAM

Editor:

I thank Roger Modjeski for his apology given both to me personally at CES and in his letter above, wherein he also spells out that his recommended tube-swapping pertains to his amplifier only, which was all we sought to clarify in our original letter anyway! As to his "oops, sorry, didn't mean to start a war" line, I'm surprised that he did not realize that war is guaranteed to follow impudent personal attacks on one's industry competitors—a rule most professionals know and understand instinctively. Roger may well feel that his learned-scholar status places him above this code, but it is the astute readership of this magazine who will judge from whence it comes.

Too, I would recommend that Roger rethink his denigratory attitude toward EI of Yugoslavia who, I can assuredly attest, are outraged at his allegations and imputations.

Roger criticizes EI for building the KT90 and belittles VTL's role in its design and initiations (while not knowing the correct "how and when" it started, which was almost two years before his first visit to Yugoslavia). To top it all, he now infers that EI "asked him to come" to help them sort out this and other tube-design problems—can you imagine a proud, 40-year-experienced factory's reaction to this effrontery? (Roger, we learn, is a man partial to issuing challenges. Here's one for him: show us proof that he was in any way invited to the factory on a consulting basis...for a fee? Air fare, hotel expenses paid by them? My information is that the factory extended their best goodwill and customer relations efforts and Roger now rewards their friendliness with insults. Attaboy, Rog—you'll go a long way with this approach.)

Roger is doing his best to kill the KT90 (but he won't succeed)—to the extent of circulating a paper on it at the WCES. He virtually says he wouldn't give it house-room, but the EI factory people tell us he was pretty pissed when they informed him that they could not supply him with it. Perish the uncharitable thought, but could there be any link between his zealous prosecution of the KT90 and its unavailability to him? (He could, of course, buy it from us, just as his major select-and-brand competitor is doing.) For our part, we at VTL are unreservedly proud to be closely associated with EI. Even more so that we were able to initiate and entrusted to launch the KT90 as the outstanding (yes, and technological breakthrough) tube it truly is. You see, the KT90 fulfills all the objectives we sought; we believed that VTL/Manley (and the whole world, for that matter) needed a new, freshly designed tube of the heavyweight variety (a "supertube," if you will) to be continuously available with reliable quality from a stable source.

Precisely put, we were not interested in an "attempted clone-build" of known existing types. Nor were we satisfied at all with the available "over-the-counter" alternatives: contrary to Roger's assertion that "we buy the same tubes from the same sources," the fact is we do not. VTL will not use the EL34 "Continental Slimmie" of which Roger is so fond (and which he claims emanates from Germany, though he cannot name the factory or its hometown), nor will we use the sadly pale Chinese copy of the KT88 because neither of these will reliably function at "book-spec" voltages. Roger's spoken and written suggestions that VTL should compromise the power output of my designs by reducing voltages to accommodate these.
Why Music Lovers Buy from Square Deal.

Square Deal auditions virtually everything — but carries only the best models of the best brands. You get to choose from the cream of the crop! A quiet expert is always on hand for your inquiries or to take your order. Your major credit card is welcome.

Square Deal
456 Waverly Avenue
Patchogue, New York 11772

Local: (516) 475-1857
Others: 1 800 332-5369

Since 1925. We must be doing something right.

AKG • Apogee
Arcici
Audio Quest
B&O • B&W
C.A.L. • Carver
Classe Audio
CWD • Dahlquist
Electro Companiet
Fosgate
JBL Pro/Urei
Lexicon • Listen Up
Magnum
Monster Cable
NAD* • Nakamichi*
Onkyo • Ortofon
Sonographe
Sony ES*
Straightwire
Sumo • Target
Terk • Thorens
Tice • Velodyne
& More!
*In-store sales

NORTH CAROLINA

• Cary Audio
Camber • N.H.T.
Kimber Kable
Philips • Rotel
• Well Tempered
• Dahlquist
Stand Design
• Acoustat
• Monitor Audio
Tube Traps
Eminent Technology
Sonance • Micro Benz
Grado • Shahinian

919 - 481-3880

Advanced Audio 1263 Kildaire Farm Rd. Cary,
aforementioned two wimpy tubes do not satisfy me either. I cannot think of a single reason to use a (purportedly) 42W Chinese KT88 at 450V to generate scarcely more power than a good old American 6L6G; unless, of course, the idea was to run them class-A at a continuous 90mA, which the Chinese KT88 cannot withstand for long either—I know, I've run the tests.

I hope I have made clear why we at VTL went to the considerable trouble and expense of causing the KT90 to go into production. We had the foresight to predict the GE 6550's cessation, and the balls and commitment to Vacuum Tube technology to bring a dream to reality. Roger decries us for this, preferring the merchant's facile dogma of "sell the stock you have and can get again at a good price." Why does he not beat the Chinese over the head for producing a KT88 that will not deliver what the historic "fine family of tubes" name promises? Why does he not beat the man over the head who paints "KT88" on a GE 6550? Come to that, why is he attacking me or my designs at all? There's an answer here somewhere.

Roger's negativity notwithstanding, I can only say that I am truly thrilled with the way the KT90 turned out. So is every single customer to whom we have supplied the tube. Confidential trade decorum precludes me from naming some of the leading manufacturer's who are seriously considering switching to the KT90 in their equipment. A few pieces of KT90-fitted amplifiers are in the hands of major reviewers; I look forward to their reports with confidence.

Because (high) power output is irrevocably linked to (high) voltage rail, I made the comparison to the original KT88 in the spirit of even more power being available through the KT90's greater voltage-handling (and the M-O KT88 was the undisputed maximum watts/volts leader in the range of feasible audio tubes available to amateur constructor and manufacturer alike). Yes, it is true that the KT90 clips more harshly in a pure (separate screen-grid supply) tetrode-mode: VTL does not use them that way, preferring pure triode or "ultra-linear" mode (partial triode, with a proprietary screen-tap; and, oh God, this tube performs breathtakingly in triode). Also please remember that by virtue of its higher power/voltage-handling capability, a single pair of KT90s will, with the appropriate rail, produce 160W very comfortably; hence the onset of clip point is at a good 50W more than was available from a pair of original M-O KT88s when they went into their (gorgeously graceful, I do concede) clip-point at around 100W. But the M-O KT88 king is dead! They're not available—if they were, we (and everybody else) would be buying them!

Now to rebut some of Roger's technical observations: The maximum recommended grid-resistance path of an EL34 is 500k ohms, according to the Mullard tube manual (p.134), and 220 for the KT88 (M-O white paper on KT88).

I will give Roger the benefit of the doubt in misinterpreting (rather than willfully misquoting) my book in "how I rate tubes differently"—this was specifically related to anode-to-anode loads, where I prefer to use the (generally lower) European-recommended ratings. One other thing that I would dearly love to debate with Roger (perhaps at a forum at Stereophile High End Hi-Fi Show) is the topic of screen-grid maximum voltages. I learned this 20-odd years ago from John Holland (still alive and well in England) when he was a senior engineer at Mullard-Osram: Mullard in particular, and the other known majors too, generally state in their manuals the tetrode screen-grid maximum voltages in the sense of "when the screen voltage is derived from a totally different source from the anode"—ie, a dedicated, possibly even regulated, separate screen-grid supply, as is common in classic tetrode usage. But when the screen voltage is derived from the anode itself or anode-winding, the screen voltage can (and should, intelligently) be substantially raised; ie, when the tube is triode-strapped or used in an ultra-linear (screen-tap) configuration.

The proof of this does exist in the literature; I'll cite just two examples: on p.441 of the RCA Manual concerning the 7027A's "Design Maximum Values," the screen-grid maximum is given as 500V. Farther down, under the heading "Push-Pull Class ABI Amplifier" subheaded "Grid No.2 (screen) of each tube connected to Tape on Plate Winding of Output Transformer," it says, "MAXIMUM RATINGS: Plate and Grid No.2 supply voltage: 600V." (This raised screen-voltage permission is repeated again under the RCA 6L6 ratings.)

Another example—this relates to Roger's complaint about our ICICHIBAN, which is triode-strapped (and, we note, jarred our policeman-of-the-truth so badly that he was moved to write a letter)—appears in Langford-Smith's respected tome, p.346, and concerns the "American-build" of the legendary Williamson amplifier. The circuit uses 807 output tubes (whose screen-grid maximum is unequivocally shown as 300V in both RCA and Tungsol Transmitting Tube Manuals) triode-strapped to a rail of 475V—an increase (authoritatively permissible) of nearly 60%. Seemingly, Roger would have Messrs. Williamson and Langford-Smith beside me in the same dock, jointly charged with screen-grid abuse-by-voltage; however,

Stereophile, June 1991

295
I'd suggest he devote some more of the "research half of his life" to the facts before calling the case.

Happily, the comfortable 850V plate-handling and 650V screen-handling of the KT90 allow me to get the output I seek for our discerning audiophile customers in a climate where modern loudspeakers are ever wanting more power rather than less.

With the next production-run—only set to commence as this issue of Stereophile hits the street, am I glad that we have in our warehouse right now the world's entire extant stock of the EI KT90? You betcha! David Manley VTL of America

VAC on VTL vs RAM
Editor:
As a manufacturer of high-quality vacuum tube amplifiers, I am somewhat concerned that the recent exchange of letters between Roger Modjeski and David Manley in these pages may leave a negative impression in the minds of those considering tube electronics. I would like to offer a few comments in hopes of calming the debate, which seems to have strayed beyond engineering and sound into philosophies and personalities. There is much truth in what both have written.

The debate seems to be founded in three areas: Can one select for tube quality? Can certain tube substitutions be acceptable and rewarding? Can a single bias control for four tubes be justified?

I think that all involved with tube equipment can agree that tube sonics and reliability vary from plant to plant. Why this should be is fairly obvious. Line up a dozen 12AX7's manufactured in the US during the 1960s and you will probably see at least six different plate shapes: some taller, some boxier, some with a pattern, etc. They also vary in ways that we can not readily see, such as coatings, chemical purity, heater construction, etc. There are actually tremendous areas of discretion within the specifications for a particular tube type. That each different implementation measures about the same but sounds different in a particular circuit is hardly surprising. The electronic measurements we make do not always accurately reflect what we hear. This simple and annoying fact applies to vacuum tubes just as it does to cartridges, digital, amplifiers, and cables.

Quality is a vexing issue, and one which RCA, Sylvania, and others struggled with mightily in the years following World War II. Each audiophile knows what quality means to them, but how can tube manufacturers define it? They usually work by the numbers and statistical probabilities. Is quality getting close to target transconductance and mu specifications when new? Rate of drift in use? Boundaries of drift in use? Percent lasting to 5000 hours? Microphonics or noise, and in what frequency range? To the audiophile, the most important components of quality are probably sound quality (can it be measured?) and life.

Our experience indicates that sonic characteristics must be designed-in, not selected for. For example, take a pair of EI (Yugoslavia) 12AX7As, one measuring correct on all parameters, the other measuring out of spec in some ways. Also take a similar pair of Chinese 12AX7As, one in spec and one out. Compare their sounds in an audio circuit. Often the good and bad Yugoslavian tubes will sound more alike than do the in-spec Chinese and Yugoslavian tubes! So it would seem that a particular tube's sonic traits in a particular circuit are largely designed-in, not selected for.

This does not mean that tube grading is without value. While consistency of electrical characteristics and low microphonics are functions of the design and manufacturing process, both may be selected for with a good degree of success. This may not be quite as good as a very tight design and manufacturing process, however, because the same problems that lead to variability among new tubes may also allow for greater changes within a particular tube over its lifetime. Long-term reliability is harder to select for than to manufacture for.

On the issue of tube life, even supertubes, such as the RCA Special Red series, could not guarantee tube life. Some tubes will fail in the first 10 hours, some after 7000 hours, and some after 20,000 hours. (For example, see RCA Review, September 1953, pages 413–426.) A term such as "10,000-hour life" means that a certain percentage of that particular tube will reach 10,000 hours of operation without going outside of a certain window of performance. This window often includes deviation to only 85% of specified output! It also often refers to applications where the tube is not switched on and off. One of the major record companies reported back in the 1950s that 12AX7's left on continuously for two years were quieter and closer on transconductance than when new, while those that went through even one off/on cycle each day were far worse!

Now, let's change gears and look at the amplifiers that use the tubes. The contention that a power amplifier is "consummately balanced and optimized" reads well, but is not a full reflection of reality. Every choice a circuit designer makes is a judgment call, a balancing of often conflicting performance goals. Are we after minimum distortion, maximum power, good efficiency, wide bandwidth, maximum...
Your Full Service Audio Headquarters For...

★ Audible Illusions
★ Belles
★ Cardas
★ Chronos
★ Fried
★ Grado
★ Harman Kardon
★ Kinera
★ Kimber Kable
★ Klipsch
★ Lectron
★ Linaeum
★ Magnum Dynalab
★ MFA
★ Möric
★ Music Reference
★ Musical Fidelity
★ Parasound
★ PSE
★ Rotel
★ Spendor
★ Taddeo
★ Tice Audio
★ VPI

615 Bloomfield Avenue, Verona, N.J. 07044
(201) 239-1799

Why New England’s Oldest Audio Dealer Does Not Pay Its Salesmen
By Commission!!

Commissions can be hazardous to your hearing. If the salesman advising you is on commission, he is only working for himself. He is not being paid to see to the long-term satisfaction of his employer’s customer. He is not going to get help for you from another salesman who may be the firm’s expert for your question. And his only interest in you is in selling you whatever will give him the commission check that week. You, dear customer, are viewed as a disposable commodity.

At The Music Box, over sixty years of experience shows us that a staff of salaried specialists is the type of staff most likely to keep you coming back year after year.

For New England
Quality Sound Since 1928

The Music Box
58 Central Street • Wellesley • MA • 02181
(617) 235-5100
symmetry, low feedback, minimal output impedance, or any of a dozen other goals? The answer is always complex even in a no-holds-barred amplifier, and no great circuit ever completely dominates another on all parameters.

It is precisely because true optimia do not exist that a surprisingly successful set of swaps can be made among types 6L6GC, 5881, 6CA7/EL34, 6550A, KT66, KT77, and KT88 if the amplifier has sufficient margins and adjustment ranges in certain key areas, the tube socket ties pins 1 and 8 together, and provided that certain voltages, currents, and other circuit values are not exceeded. Amplifier performance will undoubtedly be different, but may still be of significant sonic merit. Where possible, swaps allow an audiophile a type of choice similar to that which he or she will exercise with speakers, preamps, and cables, all of which interact with the power amplifier. It is also worth noting that swaps of tube brands, not types, can have a major impact on the sound of an amplifier. As an extreme case, we are aware of a brand of EL34 that sounds to us remarkably like a good 6L6GC in most circuits.

To demonstrate that optimia do not exist, VTL would not want you to swap 6550A and KT88, since the two tubes have certain differences (see the Tube Substitution List in The VTL Book, Second Edition). Yet consider a card I recently received from VTL introducing the new "KT90" as something "better... that can simply be plugged into your amplifier" in place of either a 6550A or a KT88. Is not the notion of replacing both types with a single new tube somewhat reminiscent of Roger's contention that certain tube types may be interchanged with minimal deleterious side effects? After all, if one amplifier is consummately balanced and optimized for 6550A, and another for KT88, how can both be optimal with the KT90? Clearly, complete optimality does not exist, though certain swaps are permissible in certain designs. While the additional voltage handling and plate-dissipation maxima of the KT90 will do little for owners of existing amplifiers, it will undoubtedly sound different, and each interested audiophile should judge the result in their own system and with their own ears.

It should go without saying that substitutions must be done with extreme care, and strictly at one's own risk unless blessed by the manufacturer. If VTL says don't swap (except as noted above), then don't in their amps. It may well be that a certain swap is safe and sonically rewarding in an RM-9, but not in a VTL. This does not mean that there is anything wrong with what either designer has done!

Some substitutions can be disastrous, including one suggested in error in The VTL Book's Tube Substitution List: 6BG6 for 6L6GC. These two types have different pin assignments, and one requires a plate cap. No one is perfect!

The debate over the RM-9's single bias control is just not critical. Roger Modjeski feels that it is valuable to have approximately the same DC bias voltage on each output tube's grid. This helps ensure that grid circuit clipping will occur at the same drive amplitude on each tube, which in turn helps ensure clipping on both the positive and negative sides of the output waveform at the same power level. This requires four matched tubes, and is part of Roger's design philosophy.

And here is the ultimate point. No designer has an exclusive on the one uniquely correct way to achieve perfect sound! No amplifier will ever be perfect or immune to improvement. Roger's choice will help yield a symmetrical clipping characteristic and requires a matched quartet of tubes (but, incidentally, does not require that a second set of tubes be matched with the first set, so no "octets" or "big bands" will be required). David is quite correct in noting that tubes may unmatch as they age, and this may cause the RM-9 to be somewhat less symmetrical than intended, although the statistical probabilities may still favor matched quartets over unmatched tubes. Of course, if you lose one tube you do have to start over with a new foursome.

While neither our amplifiers nor David Manley's amplifiers use Roger's technique, that does not invalidate his philosophy.

We would welcome contact from either manufacturer if they feel that we have done violence to their words or have made any misstatement of fact.

There are many ways to build fine-sounding amplifiers. I would like to encourage those who toil with me in this vineyard to get on with making better amplifiers and better tubes rather than clouding the field with smoke from their battles. As we collectively make better amplifiers the market for tube equipment will expand, which will in turn increase interest in the manufacture of quality tubes. In the end, that is the only way that manufacturers and audiophiles both win!  

Kevin M. Hayes  
Valve Amplification Company

Air Tight KT88 tubes

Editor:
We take exception to Mr. Tellig's swipe at our KT88B tubes (February 1991, p.99), and believe that his strong bias against Chinese tubes is misdirected.

While we were designing the ATM-2, we evaluated many KT88s, from "brand names" to those manufactured in China, and discov-
AUDIOPHILE RECORDINGS

Celebrating Our 15th Anniversary

NEW ARRIVALS:

• MARTIN-LOGAN QUEST
• KRELL CD DSP
• AUDIO RESEARCH D TO A
• JADIS DEFY 7
• ARAGON ACURUS
• BASIS TURNTABLE
• DAY SEQUERRA TUNER
• GRAHAM 1.5 TONEARM
• DUNTECH ESQUIRE

AUDIO RESEARCH • ARAGON • B&K • JADIS • KRELL • CAL MEITNER • POLK • DUNTECH • THIEL • DAHLQUIST • LUXMAN NAD • BOSTON ACOUSTICS • PROAC • VPI • WADIA • B&W

UPPER MONTCLAIR
201-744-0600

BERNARDSVILLE, NJ
908-953-9777

Stereophile, June 1991
ered that there were no discernible qualitative differences between brandname KT88s and Chinese KT88s. Because of our high quality standards we have asked Gold Aero and Penta Labs to supply us with their specially selected KT88Bs and KT88Ses.

For the record, Air Tight looks at all KT88s, including "brandname" tubes, with suspicion, and challenges the integrity of each KT88 that we use in our amplifiers.

Please let me explain.

After receiving our KT88s from Gold Aero and Penta Labs, each tube goes through an exhausting three-step quality-control procedure:

1) A plate voltage of 310V and a bias voltage of -45V is applied to each tube through a triode connection of a single amplifier to see if it can handle 38-52mA of plate current. 20% of the tubes we received fail this test.

2) During our second phase of testing, we use a push-pull amplifier generating a plate voltage of 590V to see if the tube can produce 0.5V at the cathode output. Here the tubes are tested in matched pairs. This is a 100-hour burn-in test with a music-signal input.

3) Finally, tubes passing the rigors of the second phase are placed in an ATM-2 and are burned in for another 100 hours.

Despite what you may read about KT88s, we believe that our selected and tested KT88s are many times more reliable than many of the brandname KT88s now being sold.

We are never satisfied with the quality of the KT88, but since our initial testing of the KT88s from China, we have discovered that the quality has steadily been rising. In fact, we have found that Chinese 12AX7 and 12AU7 tubes have attained world-class quality standards.

With that success in mind, we expect the KT88 to reach such standards in the very near future.

Art Manzano for A. Miura
Edge Marketing Director, Air Tight

Oracle & Absolutely Sound!

Editor:
It has recently come to our attention that our phone number in Oracle Audio Corporation's ad is wrong. Any questions about these fine products should be directed to (301) 424-8955.

J. M. Mock
Absolutely Sound!

Musical Fidelity & Audio Connection

Editor:
I'd just like to drop you a note regarding the article on Musical Fidelity products in Thomas J. Norton's UK report on p.74 of your February issue. It is mentioned that there are currently no distributors in the US; however, I'd like to bring it to the readers' attention that we at Audio Connection have always been dealers for both the Musical Fidelity line as well as the Chronos equipment from Michaelson Audio, and are proud to demonstrate the quality of this fine audio equipment to all who are interested.

If anyone is interested, we are at 615 Bloomfield Avenue, Verona, NJ 07044, Tel: (201) 239-1799.

John Rutan
Audio Connection

Apollo Audio Digital Touch

Editor:
All of us at Apollo Audio would like to thank you for mentioning Digital Touch (now called LaserGuide) in your September 1990 issue, a product we have researched for AudioQuest. Your articles have allowed audiophiles to learn how they may improve their compact disc sound for pennies a disc.

At the same time, we also have some criticisms over how the entire ordeal was handled. For one, from the very beginning it appeared that very little research was done as to why such products as Armor All, Rain-X, and 303 Protectant may have an effect. And, as in the case of Armor All, we find that by not doing the proper research into the product, one may encounter catastrophic results in the long run.

Second, one must consider the intended uses of such automotive products, many of which contain harsh degreasers and oils that are there to remove grime from tires and to give one's dashboard a bright shine. These are not good for compact discs. Some are aminofunctional products that will bond to surfaces, in the process breaking some of the bonds of the surface they attach to. This allows the products to last through several car washes, but may also cause microscopic swelling of the surface.

Another point I feel should not have deserved such great attention is cost. Sam Tellig mentioned, "Of all these products, I prefer 303
ORDER
STEREOPHILE’S
NEW CD—
“INTERMEZZO”
SEE INSERT
BETWEEN
PAGES
98 & 99

PART II
WE’VE EXPANDED
AGAIN...
TO ELEVEN SERIOUS
LISTENING ROOMS.

CENTRAL OHIO’S
EXCLUSIVE
DEALER
FOR:
Adcom
Counterpoint
Krell
Krell Digital
Mirage M-1
Mondial
Mod Squad
Sumiko/O.C.O.S.
SME 5
Spectral
Spectral Digital
Sota Cosmos
Theta Digital
Thiel CS 5
Vandersteen
Wilson Watt II/
Puppy

AUDIO MART
Hitting your
target market—
STEREOPHILE CLASSIFIED
(505) 983-9106

Progressive Audio
614/299-0565
1764 N. High St., Columbus, OH 43201
Protectant—partly because it is primarily an automotive product and priced accordingly.”

Yes, it is true that when a company has the ability to run tens of thousands of bottles a month, they are able to offer the consumer a lower price. These companies are also not selling a couple dozen bottles at a time to a high-end store, but thousands to an automotive distributor. These products probably do not utilize such strict quality control as we do—they do not have to. Furthermore, one must put these price differences into perspective. Utilizing an automotive product, one may pay as little as $1 per disc; LaserGuide costs approximately $5. Considering the value of compact discs and the improvements in sound, these $3 or $4 should not be a major consideration.

Last, when I spoke to Sam Tellig over the phone he told me how pleased he was with LaserGuide. I obviously was quite pleased myself. Sam told me he was going to mention LaserGuide in an article, along with 303 Protectant. He asked if I thought there were any problems that may arise by using 303 Protectant. I then mentioned that one must be cautious when using any automotive product. Sam assured me that I would receive a copy of the article prior to its publication. I thought to myself, in that case, I would just send Sam of any new information when I received the article.

As it turns out, I did not receive a copy of the article and I had found out quite a bit more about 303 Protectant. Ashraf Chaudry, who holds an MS in chemistry from U of P, is the Director of Research and Development for American Chemical Research Laboratories. Ashraf, a highly qualified chemist, who actually assisted in the preparation of the production version of LaserGuide, tells me that Blue Magic (the parent company of American Chemical Research Laboratories) actually manufactures 303 Protectant. Ashraf assured me that 303 Protectant is a fine product, and I can’t agree more. When I visited the factory I was very impressed; everything was topnotch, and by the looks of things this was a very successful automotive product. But when asked if this product was safe for use on compact discs, especially because it was amino-functional, Ashraf reaffirmed my opinion. He agreed that because 303 Protectant is amino-functional does not guarantee it will cause a compact disc to eventually swell, rendering it unusable, but it is possible. He cautioned that one must take the time and money to do extensive research to assure that no problems occur; as we have done with LaserGuide over the past year.

Soudy Khan
Apollo Audio

who graduated from Stanford; I studied at Cal Poly.

**ConjuTech & Sonotube**

Editor:

I hope this letter is not received as whimpering or sour grapes on my part, however, I have to respond to Peter Mitchell’s article “The Ground Floor” (Vol.14 No.3) concerning using Sonotube for subwoofers.

At the 1990 WCES we displayed three of our subwoofer products, all using Sonotube. I explained to Mr. Mitchell, who came by our room, why we had chosen it for our single 8”, single 12”, and double 12” push-pull systems. My description was remarkably similar to the one appearing in this issue.

Yes, there is nothing proprietary about this approach. Our engineer Jeff Swauger developed the systems for us in ’89 and has written a white paper on the benefits.

This is still not my concern. We are a small start-up company, with no recognizable names on our roster, as Genesis and others have. But we do have close to seven figures of our own money invested in our subwoofer, satellites, amplifiers, and patent development. We elected to display at the Sahara Bi-Level, and the Riviera the year before, because there is no real place for companies like us to display at CES. The convention center is definitely unsuitable, and even though we were in awe to be surrounded by Conrad-Johnson, VTL, and Perreaux, it was easy for us not to be taken seriously.

Just as the Specialty Retailer may be a forgotten piece of the chain, the start-up manufacturer is in an even more precarious position.

Since our products were one-of-a-kind prototypes, we never expected a review. We did receive a “Gee Whiz” award for our Satellites in your ’90 post-CES issue.

My point is this: a lot of products displayed at CES, and the companies displaying them, may never make it to market. This does not necessarily mean that the people behind these endeavors are not innovative, or lacking in the love of audio. Sometimes a little recognition from a reviewer of a publication like **Stereo** **phile** could go a long way toward helping; at a minimum, it sure would make us feel good.

John F. Goad
President, ConjuTech

P.S. We have since found recycled-paper form manufacturers that can make these tubes in any size and density, and even cut holes for ports and electronics with high-pressure water, at very reasonable prices for OEMs.
At Woodbridge Stereo we take our business seriously by choosing only the best designed components in the world. Our audio/video professionals keep in step with the latest technology. Our customers get no-nonsense information, assistance, and service.

Adcom • Audio Research • Bryston • B&W • CAL • Dahlquist • Denon • Esoteric • Forte • Fosgate • Grado • Infinity • Janis • Lexicon • Magnepan • McIntosh • Mirage • MIT • Monster Cable • Nakamichi • Oracle • SME • Snell Acoustics • SOTA • Spica • Stax • Sumiko • Threshold • Theta • Velodyne • VPI • Wilson Audio

NEW, EXPANDED MANUFACTURING FACILITY ESTABLISHED IN CONNECTICUT
792 PACIFIC ST, STAMFORD, CT 06904 • TEL. 203/325-1791 • FAX 203/325-0263

SEQUIRRA EXPANDABLE SPEAKERS
The most AFFORDABLE products today. DIRECT FROM DICK FOR ONLY $490 A PAIR.

Unconditional 30-Day Money-Back Guarantee — Dick Pays Shipping Both Ways!

DISTRIBUTION ESTABLISHED IN
AUSTRALIA, Melbourne, Absolute High End; CANADA, Vancouver, B.C., H.P.S. Distributing; HONG KONG, The Sound Chamber; IRELAND, Cloney Audio; ITALY, Linea Audio; JAPAN, Tokyo, Unico Electronics Ltd.; KOREA, Corex International; SINGAPORE, Stereophile Audio; SPAIN, Nova Systems; TAIWAN, Audio Vertex; UNITED KINGDOM, Path Premier.

Write or call Dick Sequerra personally for complete information. R. Sequerra Assoc., Ltd., 15-26 215th St, Bayside, NY 11360 • Tel. 718/225-4159 • Fax 718/445-8246
Hi-End Audio

CALL US
(508) 996-5454
Route 6
North Dartmouth, MA 02747

TRADE-INS WELCOMED
WE HAVE TRADE-INS TO SELL

electronics
ADCOM • ARAGON • Classe • MFA
TARA Labs • Atmosphere • Magnuni • Dynalab
NAD • Mod Squad • Tice Audio
Music Reference • Wadia • Symphonic Line • V.A.C.
Prodigy • Micromega • Rowland Research
CABLES, etc.
CARDAS • TERA • COGAN HALL • TARGET-ARCLIC • SILTECH
AUDIOQUEST • PURIST • PURIST • ROOM TUNES

SPEAKERS
EMINENT • TECHNOLOGY • CELESTION • JANIS • ACOUSTIC • ENERGY • SONY LAB • YANKER AUDIO • DUNTECH • J.S.E.

ANALOGUE
SUMIKO-SME • VPI • EMINENT • TECHNOLOGY • SOTA • REGA • AUDIOQUEST • GRAHAM • KOETSU • LYRA-CALVLS • VERSA • DYNAMICS

See the Music...

Over the past eight years, we've been chosen by these eight manufacturers to be their exclusive dealer for all Long Island:

Audio Research
Bryston • Klyne
Martin Logan
Oracle • Proceed
Thiel • Threshold

Visit us...We'll become YOUR choice, too!

4 Large Music Rooms • Private Demos by Appointment
Delivery and Expert Installation throughout Metro New York

"Nothing matters but the music!" Lermontov, The Red Shoes (1947)
FIESTA!
Dallas Wind Symphony
Howard Dunn
RR-38 (CD, LP)

To kick off our exciting new series with "America's Premier Wind Band," we built a program around one of the most rousing pieces ever written for concert band, La Fiesta Mexicana by H. Owen Reed. Also included are favorites for band by Morton Gould, Roger Nixon and Clifton Williams, all with colorful fiesta themes. Audiophiles will have a field day with this one, recorded by Prof. Johnson in the already-legendary acoustics of Meyerson Symphony Hall in Dallas. Single Digital Master compact disc, or a special, deluxe Pure Analogue 2-LP set, half-speed mastered by Stan Ricker.

HOLST
Dallas Wind Symphony
Howard Dunn
RR-39 (CD, LP)

A companion volume makes available on one disc the two well-known Holst suites for band, Hammersmith Prelude and Scherzo, and A Moorside Suite for brass band (rarely heard), all in the original instrumentation specified by the composer. Maestro Dunn has distinctive ideas about these seminal works, which, with the brilliant performances, make them fresh and new. If you love the Mercury recordings of the Eastman Wind Ensemble, you will not want to be without these important new releases!

At better music stores, or factory-direct, ppd:
$16.98 CD or single LP;
$21.98 Fiesta 2-LP set: Check/Visa/MC
Free catalogue. Dealer inquiries invited.

TO ORDER: 1-800-336-8866

REFERENCE RECORDINGS
Box 77225X, San Francisco CA 94107

In Canada: May Audio Marketing, 514-651-5707
Audiophiles and Audiophile Dealers

Are you having trouble selling your used or exotic equipment, or locating that special component?

Call Now 1-900-USA-HIFI is your solution

USA-HIFI is a unique service, offering a comprehensive listing of used high-end components for sale across the country. Dealers and individuals can use the system to quickly locate available merchandise or leave messages describing equipment for sale or wanted merchandise. Simple to use, with listings grouped in the following categories:

- Turntable Equipment
- Tuners and Signal Processors
- Loudspeakers
- Cables and Headphones
- Preamplifiers
- CD Players and Digital Processors
- Power Amplifiers
- DAT and other Recording Equipment

• QUICK • EASY • INEXPENSIVE •

99¢ a minute

ATC SCM-20 • Acoustic Energy Audioquest • Audible Illusions ASC • B&K • Sonata • Cardas Celestion • Classe’ Audio • Coda Technologies • Esoteric Digital Kimber • KEF Custom • Lexicon Ensemble • Entec • Mission/Cyrus Magnum/Dynalab • Mod Squad PSE • Philips Audio/Video • Niles Rega • Sims • Sonus Faber • Stax Sonrise • Sound Anchor • Tara-Labs • Target • Tera/Video • Tice Power Block • Velodyne

VAC Valve Amplification Co.

301-890-3232

FOR INFORMATION OR APPOINTMENT

NEW

HEAR NOW!

VANDERSTEEN 3 SPEAKERS

COUNTERPOINT SOLID STATE ELECTRONICS

McCORMACK CD DRIVE

Music by the Sea

542 North Hwy. 101
Leucadia, CA
(619) 436-7692

Stereophile, June 1991
For Sale

PS AUDIO 4.6 with M500 power supply, mint, with boxes and manuals, $600 plus shipping. Fred, (212) 749-0331, leave message.


ACCENT ON MUSIC—WESTCHESTER CO., NY. Now on demonstration, Linn Lingo LP12 outboard power supply and the first 3D Linn Selek LPs. Radford tube amps from England. Plus Naim, Rega, Rotel, Arcam, Creek, Epos, interesting LPs and CDs. Our care and attention to detail include delivery and installation. 175 Main Street, Mount Kisco, NY 10549, (914) 242-0747.

CELLO EQUIPMENT FOR SALE. Absolutely mint condition. 33%-35% off list price. Audio Suite (includes P101 and P301); Palette equalizer, power supply, and four-piece Performance power amplifiers can be purchased separately or together. Call (212) 923-7545.

COUNTERPOINT SA-5000, $2450 OBO; Krell KSA-250, $4200 OBO; Sony 707ESD and Denon DCD-3300 CD players, $450 each OBO; all excellent condition. Call Tony, (714) 854-3745.

30-60% SAVINGS TO PURCHASE DIRECT from Hong Kong! DAT, CD player, amplifiers, and accessories. Ask for price lists with $2 postage. Winston Camera & Radio Co., Ltd., Mall Order Division, 55 Hankow Road, Hong Kong. We accept Visa/MC, Fax (852) 369-9313.

QUICKSILVER PREAMP, $1000; Spica Angelus, $550; Spica TC-50, $400; Vandersteen 2C with Vandersteen stands, $550. All equipment excellent. Prices firm. (912) 587-2314.

MUSICAL CONCEPTS-modified Hafler DH-101 preamp and DH-200 amp, $500; M&K V3 subwoofer and LP-1S filter, $600, mint condition. (908) 647-0159 evenings.

MAUGHAN (LISTEN-UP) B&W 801 equalizer, Meitner Translinks, Meitner 30' interconnect. Best offer. Steve, (213) 598-8025, 7pm-10pm Pacific time.


COUNTERPOINT FACTORY UPDATES—Recently engineered updates assure Counterpoint owners that your purchase is a lasting investment. SA2, SA3, SA3.1, SA4, SA5, SA7, SA7.1, SA11, SA12, SA20, SA3000. For details, cost, and a return authorization number, call Counterpoint at (800) 275-2743, ext. 103.

HIGH-END AUDIO IN CENTRAL NY—We are your newest source for Arcici, B&K, Cardas, Merlin Signature, Philips, PS Audio, Roomflune, and TARA products. Call Mark or Rich for sound advice—sound price. Signature Sound, P.O. Box 2814, Liverpool, NY 13089. (315) 622-9066, (315) 622-4137.

M&K VIB SUBWOOFER and SIB satelliets and stands, $1095; Adcom SLC-505, $95. All mint. Call George, (614) 982-5975.

REVIEWER CLEANS OUT HIS CLOSET: Pioneer CLD-900 laserdisc player (digital), $300 plus shipping; JVC BN-5 Biphonic processor, $100; Franklin Mint One Hundred Greatest Recordings Of All Time, $1200; Dennon PRD, $150; Audionics Space & Image Composer, $300; dbx 41X dynamic-range expander, $500. Most prices include UPS shipping. Write to Bill Sommervolke, c/o Stereophile, 208 Delgado St., Santa Fe, NM 87501.


A USED HIGH-END DEALER in Calif.—ARC, Aragon, Cello, C-J, Krell, Levinson, MIT, and Threshold. Buy and sell by UPS/COD. Call (209) 298-7931 or Fax (209) 297-0359, Sennie.

JEFF ROWLAND DESIGN GROUP (entire line on display), Basis, Graham 1.5 tonearm, Dynaudio, Hales Audio, MFA, Klyne, PS Audio, Kebischull, Quicksilver, TDL, Eminent Technology, Sota, Koetsu, Mod Squad, Sumiko, SME, Cardas, Sound Anchors. Sale: Mod Squad Signature and Prism II CD players. The Sound Resource, (216) 751-6363.

DAHLQUIST DQ-20, great soundstage, accurate spectral balance, perfect condition, $1000, (615) 333-9224.

Audio Haven
Fine Audio Components

We offer only two classes of components:

STATE OF THE ART
STATE OF THE WALLET®

We hope you agree that nothing else really matters.

1937 W. 11th Street, Suite G
Upland, California 91786
(714) 982-8110

Audio Images
Audio Research
Classe® Audio
Counterpoint
Naim Audio
PS Audio
Luxman
Hafler
Denon
Energy
Dunitech
Vandersteen
Martin-Logan
Velodyne
Lexicon
Optonica
Esoteric
Theta Digital
Proton Video
Day Sequerra
Magnum Dynalab
California Audio Labs
VPI • PSE • CWD • Straightwire
Sonance • Sumiko, . . . & more!

1937W.11thStreet, Suite G
Upland, California 91786
(714) 982-8110

Texas’ Finest
Audio Store
Anadyne • Avalon • B&W • B&W 800
Bryston • Cardas • Carver • Classe
Day-Sequerra • Dynavector • Energy
Esoteric • Goldring • Hales • Jadis
Janis • Krell • Krell Digital
Martin Logan • Monster M Series
Rega • Roksan • Rotel • Sony ES
Target • Tice

Located In Dallas Texas
214/437-4167

Audio Haven
Fine Audio Components

We offer only two classes of components:

STATE OF THE ART
STATE OF THE WALLET®

We hope you agree that nothing else really matters.

1937 W. 11th Street, Suite G
Upland, California 91786
(714) 982-8110

Audio Images
Audio Research
Classe® Audio
Counterpoint
Naim Audio
PS Audio
Luxman
Hafler
Denon
Energy
Dunitech
Vandersteen
Martin-Logan
Velodyne
Lexicon
Optonica
Esoteric
Theta Digital
Proton Video
Day Sequerra
Magnum Dynalab
California Audio Labs
VPI • PSE • CWD • Straightwire
Sonance • Sumiko, . . . & more!

1937W.11thStreet, Suite G
Upland, California 91786
(714) 982-8110

Texas’ Finest
Audio Store
Anadyne • Avalon • B&W • B&W 800
Bryston • Cardas • Carver • Classe
Day-Sequerra • Dynavector • Energy
Esoteric • Goldring • Hales • Jadis
Janis • Krell • Krell Digital
Martin Logan • Monster M Series
Rega • Roksan • Rotel • Sony ES
Target • Tice

Located In Dallas Texas
214/437-4167

Savant
Audio & Video

Consultancy • Custom Systems • Acoustic Treatment
Installation • Retail

Air Tangent • Allegro • Apogee • Arcici
Athena • Audio Prism • AudioQuest • Bassis
Band • Cardas • Chesky • Chicago Speaker Stand
Clarity Audio • Creek • Delos • Donan
Dynaudio • Electron Kinetics • Eminent Technology
Essence • First Sound • Fosgate
German Acoustics • Harmonia Mundi • Klyne
Last • Lectron • Magician • Merrill • Mod Squad
Mogami • March • Nestorovic • Neutrik
Nimbus • Opus3 • Pro Ac • QED • Rega
Reference Recordings • Room Tune • Rotel
Sequerra • Sheffield Lab • Sims • Sumiko
Superphon • Symphonic Line • Tara Labs
Target • Tice Audio • Vendaeta Research
Wadia • Water Lily • WBT • and More

(800) 628-0627 (609) 799-9664
Princeton Junction, N. J. 08550

Music & Video Systems for the Novice & Connoisseur

Savant
Audio & Video

Consultancy • Custom Systems • Acoustic Treatment
Installation • Retail

Air Tangent • Allegro • Apogee • Arcici
Athena • Audio Prism • AudioQuest • Bassis
Band • Cardas • Chesky • Chicago Speaker Stand
Clarity Audio • Creek • Delos • Donan
Dynaudio • Electron Kinetics • Eminent Technology
Essence • First Sound • Fosgate
German Acoustics • Harmonia Mundi • Klyne
Last • Lectron • Magician • Merrill • Mod Squad
Mogami • March • Nestorovic • Neutrik
Nimbus • Opus3 • Pro Ac • QED • Rega
Reference Recordings • Room Tune • Rotel
Sequerra • Sheffield Lab • Sims • Sumiko
Superphon • Symphonic Line • Tara Labs
Target • Tice Audio • Vendaeta Research
Wadia • Water Lily • WBT • and More

(800) 628-0627 (609) 799-9664
Princeton Junction, N. J. 08550

Audio Haven
Fine Audio Components

We offer only two classes of components:

STATE OF THE ART
STATE OF THE WALLET®

We hope you agree that nothing else really matters.

1937 W. 11th Street, Suite G
Upland, California 91786
(714) 982-8110

Audio Images
Audio Research
Classe® Audio
Counterpoint
Naim Audio
PS Audio
Luxman
Hafler
Denon
Energy
Dunitech
Vandersteen
Martin-Logan
Velodyne
Lexicon
Optonica
Esoteric
Theta Digital
Proton Video
Day Sequerra
Magnum Dynalab
California Audio Labs
VPI • PSE • CWD • Straightwire
Sonance • Sumiko, . . . & more!

1937W.11thStreet, Suite G
Upland, California 91786
(714) 982-8110

Texas’ Finest
Audio Store
Anadyne • Avalon • B&W • B&W 800
Bryston • Cardas • Carver • Classe
Day-Sequerra • Dynavector • Energy
Esoteric • Goldring • Hales • Jadis
Janis • Krell • Krell Digital
Martin Logan • Monster M Series
Rega • Roksan • Rotel • Sony ES
Target • Tice

Located In Dallas Texas
214/437-4167

312

Stereophile, June 1991

DAHLQUIST DQ-10 SPEAKERS with Mylar caps, DQ-1 subwoofer with passive crossover, stands and feet. Original cartons. $600. Bill. (612) 544-3161.

FREE SHIPPING FROM in between audio: Featuring superb Cary Audio with Bradley Silver LTC-30 interconnects, 1m, $199. Gold Aero, AudioQuest, Apature, Aural Symphonics, Straight Wire, TARA Labs, Simply-Physcis, Dynavector, DNM, Esoteric, Chesky, Reference Recordings. (503) 638-5767 for a free catalog.

VTL 225Ws, $3475; Yamaha DSP1, $2475. All mint condition, 1 year old. (408) 268-8209.

LEGALISTIC TRANSFORMATIONS for Adcom and Hafler power amplifiers. "Carrying the concept of upgrading to its natural conclusion...true transformations that achieve transparency and musicality." Call or write for brochure. Northwest Audio Labs, Inc, 1557 NW Monroe, Corvallis, OR 97330. (503) 753-0472.

STEREOPHILE BACK ISSUES: Vol.8 No.5 through Vol.14 No.4. All 66 issues for $60 UPS paid. Phone (914) 469-4470 after 6pm, Eastern time.

MERIDIAN MCD CD PLAYER by Boothroyd-Stuart. Well-maintained, operates and looks like new. Serious inquiries only. (303) 794-7210.

MARTIN-LOGAN CLSIIIs, oak, immaculate condition, $2700. Call (215) 391-1200.

EXPOSURE 9, 7, 4 ELECTRONICS, $6200, sell $4000; Linn LP 12, Ittok, Troika, $2200; Linn 275 amp, $700; Audio-Tech 'table, $110 OBO. (312) 779-8479.

BARCLAY BORDEAUX CD PLAYER, $750; MIT 330, Im, $90; excellent condition. Must sell, best offer. John, (215) 806-7813.

MUSIC REFERENCE RM-9 amp, KT88, rosewood base, $1975; MF A Luminescence preempt, superb sound, $2250. (303) 925-5174.

APOGEE STAGES—less than 100 hours use. Absolutely as new, with factory packing, etc., $1850 OBO. Also, Adcom GFP-565, 8 months old, perfect, $595. No tax on above items. Call Tim in Texas, (806) 756-4425.


NAIM SPEAKER CABLE. New, highly rated, and great value at $175 OBO for 26' pair. Call Tim, (806) 756-4425.

TWO HAFLER XL280 AMPS, $345 each. Excellent condition, rarely used, with original packing. (407) 841-2492, leave message.


AUDIO UNLIMITED IN COLORADO offers competitive values on Acoustic Energy, Airtight, Anodyne Digital, Aural Symphonics, CODA, Dynavector, Ensemble, Graham, Lazarus, Magnum Dynalab, Maplenoll, McCormack, Mod Squad, Musical Concepts, Musical Design, Muse, SimplyPhysics, Tice, room treatments by ASC and Room Tunes, and more... Call John Barnes, (303) 922-8151, (303) 698-0138, or Fax (303) 922-0522.
HIGH END AUDIO IN CENTRAL PA

"Central PA's high end audio shop for the discriminating listener."

VANDERSTEEN MERRILL MARTIN-LOGAN ET COUNTERPOINT Well Tempered Lab

Threshold MIT spica PSAudio audio research IRS Series

21 N. Market St., Selinsgrove, PA • 717-374-0150

OMNI SOUND

Jeff Rowland Design Group Analog Design Group
Eminent Technology Audible Illusions
ASC Tube Traps Monster Cable
Well Tempered Wilson Audio
Kimber Kable Forte Audio
Audioquest
Clearaudio
PS Audio
Threshold
Duntech
Spectrum
Camber
Athena
Soutner
Onkyo
Proton
B & K
Grado
Spica
SOTA
Thiel
MIT
VPI
Sony ES

For the sound mind.

OMNI SOUND

19020 Preston Road Dallas, Texas 75252 (214) 964-6664

Western New York's Exclusive MARK LEVINSON DEALER

- APOGEE
- ARAGON
- AUDIO RESEARCH
- AUDIOQUEST
- DENON
- GRADO
- LINN
- MAGNEPAN
- MIRAGE
- NAD
- NAKAMICHI
- PROCEED
- PROTON VIDEO
- THETA
- THIEL
- VELODYNE

Trades Welcome
MC • VISA • AMEX • DIS

Quality is subjective to those who are still searching. But to those who know, it is well defined.

George Merrill

Introducing the Spectral-DMA 80

...the frontiers of audio are once again on the move.

UNDERGROUND SOUND

(901) 272-1275
2125 Central Ave., Memphis, TN 38104

Stereophile, June 1991
SERIOUS
AUDIOPHILES
DESERVE
SERIOUS
SERVICE.

And that's what you will get at Reference Audio/Video. We offer the best in high-end audio and the best in friendly service by our knowledgeable staff. From the latest CD players to the finest high-power amplifiers, you'll like our surprisingly affordable prices and fast shipping.

AUDIO/VIDEO

Call us at (213) 517-1700

18214 Dalton Ave., Dept. C, Gardena, CA 90248
Hours: M-F 9 to 6, Sat. 9 to 1 Pacific Time

Stereophile, June 1991

PS AUDIO DIGITAL LINK DSP, $495. (203) 655-8013, Vincent.

CONRAD-JOHNSON, 2 months new, Evolution 2000 power amplifier, $3400; and PV11 vacuum-tube preamplifier, $1100, with original packing cartons and owner manuals. Call anytime, (215) 351-1201.

B&K SONATA 442 AMP, 200Wpc, Adcom ACE-515 enhancer, Belles (Soundwave Fidelity) Symp 4 amp and Symp 1A preamp. PA, (215) 567-4626.

PS AUDIO 200C with X-mod amp, $1200 OBO. Dom, (415) 864-5566.

AUDIOPHILE QUALITY PARTS: Volume controls, stepped attenuators, Resista resistors, Wonder caps/solder/wire, Wima polypropylene, Ram tubes, Hitachi MOSFETs, WBT and Monster connectors, MIT wire, TEC-200 film, Cramolin spray, transformers, knobs, semiconductors, and more. $2 for catalog (refunded with first order) to: Welborne Labs, 6836 So. University Blvd. #70, Littleton, CO 80122.

ADCOM GTP-500 MARK II preamplifier/tuner with remote control. Mint condition, asking $325. (908) 389-2946 after 6pm EST, (908) 389-5738 daytime.

B&W 801 MATRIX SERIES 2, walnut finish, 1 year old, built-in tripoties and equalizer, $4000 OBO. (203) 673-7703.

SOUND HOUNDS—WE BUY, sell, trade, and consign pre-owned audio equipment. Call (303) 722-3200.

AUDIO CHAMBER—PAY CASH for Cello, Levinson, ALC, Krell, Spectral, Rowland, etc. CA, (415) 549-2178.

MFA • COUNTERPOI
REVOX • ACOUTSTAT
MOD SQUAD • JSE •
DAHQUIST • BOSE
NHT • HARMAN KAR
HAFLER • PRECISE
PS AUDIO • ONKYO
CELESTION • PHIL
LEXICON • PROTON
VELODYNE • SNELL
MELOS • STAX • CWD
TICE • AUDIBLE IL
OMH • OCM • ARICI
PROAC • CAL AUDIO
SONANCE • PIONEER
BEYER • JAMO • VPI
THORENS • KIMBER
FOSGATE • MAGNUM
SME • TARGET • JBL
AUDIOQUEST • CAR
BEYER • TARA • AKG
NILES • PARASOUND

TANDBERG 3001A TUNER with rosewood panels, $625; B&K ST-202 with Sound Unlimited Mod, MAS power cord and more, $550; AudioPrism Ultima interconnect, 1m, $80; 1/2m, $65. (215) 726-9062.

SANS PAREIL 1.0 OTL-type monoblock, 160Wpc, $2950/pair. Factory direct 30-day money-back guarantee, 5-year warranty parts and labor, 1 year tubes. Fourier Components, 18700A Adams Ct., Morgan Hill, CA 95037, (408) 779-1813, Fax (408) 779-6707.

REVOX B226S COMPACT DISC PLAYER, immaculate, new in box, under warranty, $1250 OBO. (404) 979-
8243 or events, leave message.


NAIM AUDIO GEAR: NAP250, NAC72, Hi-Cap. 1 year old, warranted, mint, $4200. Call Russ, (215) 965-3221 events EST.

AUDIOQUEST & STRAIGHT WIRE high-performance speaker, interconnect, and video cable products. Replace your current cables with superior-quality cables and rediscover your music system. AudioQuest Midnight speaker cable, 10' pair, $159.95; AudioQuest Ruby interconnects, 3' pair, $59.95, and AudioQuest Lapis interconnects, 1m pair, $329.95. Call for pricing on other professionally terminated cables. Cable Concepts, (614) 761-8933.

FOR SALE: NEC AV-350E A/V amplifier and surround-sound processor, $350; NAD 590 CD/Laser disc player, $400; Denon DP-45F turntable with Grado cartridge, $175; Phase Linear 1000 Series II N.R. system, $200; dbx model 228 N.R. with dynamic expander, $175; dbx 400XG program-route selector, $150; Shotgun interconnect cables, 1m pair, $300; 10m pair, $800; Sony 705ES CD player, $500. Call Ram, (518) 664-6000 days, (518) 371-1844 events & weekends.

TARA LABS TEMPORAL CONTINUUM 6' speaker cable, $300; 1m interconnect, $300; 1m Pandora interconnect, $250; AudioQuest Lapis 1m, $250; 1/2m, $150; Adcom GFP-555 preamp, $400. Wayne, (808) 778-6328.

KRELL SBP-32X DIGITAL PROCESSOR—2 months old, perfect condition, asking $3000 or best offer. Call Ron, (212) 818-1281.

McINTOSH 7270 AMP, $1700; C-34 preamp, $1700; Thiel CS3.5, black, 1 year old, $1800; original boxes. Ray, (313) 886-1700 weekdays, 9am-6pm.

ADCOM GPA-555 modified by Northwest Audio Labs, $650; PS Audio 4.6 with M-250 power supply, $425. (405) 360-3461.

FOUR PAIRS TARA LABS TEMPORAL CONTINUUM interconnects, 1m, $300/pair or $575/2 pair. (206) 322-6846.

MARTIN-LOGAN CLS SPEAKERS, mint condition, $1450; Harman/Kardon Citation 22, $550; Citation 21, $350. (718) 698-2137 after 5:30pm EST.

**CABLES**

Only The Cable Company lets you try any cable at home. 43 brands, 219 cable products & good advice.

→ **TUBES ←**

**MESA, NATIONAL GOLD, VTL, RAM LABS:** State of the art computer testing & matching.

**COMPONENTS/ACCESSORIES**

Vast selection. Call or write.

**The Cable Company**

1-800-FAT WYRE

or (215) 297-8824, or fax (215) 297-8661
MON-FRI 10-6, SAT 12-4 VISA-MC
p.o. box 579, point pleasant, pa 18950

---

**Achieving sonic realism.**

Audio by Design was created by music lovers and musicians with the simple goal of offering the highest level of musical accuracy possible.

We offer complete systems from less than $800 to state-of-the-art audiophile and room-to-room remote systems.

Specialists in design and installation of all your audio/video needs.

**AUDIO By Design**

1000 Bristol Street North
Newport Beach, CA 92660

714/851-0112

---

**CABLES**

Only The Cable Company lets you try any cable at home. 43 brands, 219 cable products & good advice.

→ **TUBES ←**

**MESA, NATIONAL GOLD, VTL, RAM LABS:** State of the art computer testing & matching.

**COMPONENTS/ACCESSORIES**

Vast selection. Call or write.

**The Cable Company**

1-800-FAT WYRE

or (215) 297-8824, or fax (215) 297-8661
MON-FRI 10-6, SAT 12-4 VISA-MC
p.o. box 579, point pleasant, pa 18950

---

**Achieving sonic realism.**

Audio by Design was created by music lovers and musicians with the simple goal of offering the highest level of musical accuracy possible.

We offer complete systems from less than $800 to state-of-the-art audiophile and room-to-room remote systems.

Specialists in design and installation of all your audio/video needs.

**AUDIO By Design**

1000 Bristol Street North
Newport Beach, CA 92660

714/851-0112

---

**CABLES**

Only The Cable Company lets you try any cable at home. 43 brands, 219 cable products & good advice.

→ **TUBES ←**

**MESA, NATIONAL GOLD, VTL, RAM LABS:** State of the art computer testing & matching.

**COMPONENTS/ACCESSORIES**

Vast selection. Call or write.

**The Cable Company**

1-800-FAT WYRE

or (215) 297-8824, or fax (215) 297-8661
MON-FRI 10-6, SAT 12-4 VISA-MC
p.o. box 579, point pleasant, pa 18950
PHILIPS

In Stock Now!!
THE AV1001

*Philips Bitstream Pulse Density Modulation D/A converter
*Dolby Pro Logic Surround Sound
*Full Function System Remote
*Digital Signal Processor
*Adjustable Concert Hall Effects
*Matching AV1002 Power Amp

Call for Sale Price!

(215)966-4500
PO Box 245
Macungie, PA 18062

MAGNECORDER PT6-AH, PT63-J, $800; Brush Soundmirrors; $1500; 2 Webster Chicago wire recorders, $500 ea.; Ampex tape recorders, 600, 601, 602, and pair of 610s; Uber 4000 tape recorder; Ampex 350 6-piece original tube electronic (pre-owned by CBS); Scott 610D FM tuner; 1 W.F. speaker; 1 pair vintage RCA speakers (rare 20" oblong shape); 2 pairs 18" University speakers; 2 pairs vintage DuKane tube monoblock amplifiers, 110Wpc—originally from UA theater in NYC; and more. Serious inquiries only. (718) 596-7991.

MIRAGE M-3 SPEAKERS—NEW, sealed in original boxes, $1695. (716) 442-0909 EST.

TAS, ISSUES 1-70. Any reasonable offer. P. Forte, P.O.Box 85, Hammonton, NJ 08037.


CLASSIC FISHER 450-T RECEIVER, near mint, $100. (714) 679-0173.

PREAMPS, RACK-MOUNT: Scott “Alpha 1” (Belgium), $75; Electro Technology II tube type, $50; Soundcraftsmen PE-2217 preamp/equalizer, $100. (714) 679-0173.

C-J PREMIER 7 PREAMP for sale. Immaculately clean. Ultimate dual-mono preamp with factory warranty. Must sell due to difficult financial reasons, $5000 firm. Ask for Tony, (312) 283-1895, or if no answer, leave message at (312) 736-3157 (Chicago area).

ATTENTION APOGEE AND MAGNEPLANAR OWNERS! Great deal on 52' of Swiss-made Artich Prisma speaker cable. Virtually identical to original Symo cable. Will sacrifice for $7 per foot, OBO. Brand new. Call Tim, (806) 756-4425.

ACOUSTIC ENERGY AE-1 MONITOR SPEAKERS, original packing, $1400; 8' AudioQuest Green, $285; Im Lapis Hyperlitz, $285; 10” MIT Music Hose, $325. (813) 586-0966.

ONE ARAGON 2004, mint in box, $750 OBO; 2 pair Im Maestro interconnect, $200 each OBO; 1 pair 0.5m Maestro interconnect, $150 OBO; 2 pair 15” Maestro speaker cable, $500/pair OBO; 1 pair 12” MIT Music Hose speaker cable, $500 OBO. Call Russell, (930) 353-4900.

NESTOROVIC SPEAKER SYSTEM 12A Type III, $3500; ARC Classic 60, re-tubed, $2300; Krell KSA-200, $3500. (407) 777-8403 (machine after 4th ring).

B&W 801 SPEAKERS, 6 months old, perfect condition, black, under warranty, paid $5900, make offer. (918) 298-5555.

VTI 225s, LATEST PRODUCTION, brand new in box. Lifetime warranty. (201) 930-9700, ext. 320, 10am-6pm EST.

MAC 2125, VGC, $700; MAC 2135, VGC, $895; NAD 6300 cassette, VGC, $595; Nakamichi Dragon, $1050; SAE 3C, $350; SAE 2500, total audiophile rebuild, $500; GAS Sonampzilla, $295; dbx 1410 equalizer, $495; J.S. Engineering model 2, cohesive, easy to drive, new $2500, now $1200; Denon POA-6600 mono-blocks, 250Wpc; dynamic, clear, $850. (313) 949-4567.
Galen

honesty.

monplace,

think

personally)

Quicksilver

new,

WATT

Quad

Sonographe

Aragon

Threshold

VPI

Van den Hul

Serving N. Georgia & S. E. Tennessee
Chattanooga Valley Audio
By Appointment (404) 861-0282
INCREDIBLE AMPLIFIER, KSS100/100, designed and created by Kirk S. Simmons. All direct-coupled triode vacuum-tube power amplifier. I'm not going to hand you the same old stuff. This is what's new in amplifier technology. Sophisticated, innovative circuitry (patent pending) allows harmonic structure reproduction with 0 phase shift to DC. Only $2995 for 100W dual mono, and $6995 for 230W mono set. For further details, call (714) 492-5209 between 9am and 9pm PST, or write to: Kirk Simmons, 2973 Calle Gaucho, San Clemente, CA 92672.

TANDBERG STEREO EQUIPMENT: Buying and selling tuners, receivers, cassette decks, amplifiers, and CD players. Top quality. Call Larry, (914) 277-3785 days, (914) 238-3650 evenings.

AUDITION OUTSTANDING SOLID CORE TECHNOLOGY interconnects, risk-free, for up to 45 days. Model SCT-03, $95/pair; SCT-04, $129/pair. Shipping, #. Call or write for more information. Stewart Grand, Solid Core Technology, 3606 Westview Avenue, West Palm Beach, FL 33407, (407) 842-7316.

WADIA 1000 D/A, $1950; Merlin 4Bs, $1750; Purist Audio Maximus interconnect and speaker cable. Ron, (205) 823-6475 evenings/weekends.

THE STANDARD IN AUDIO: FidelityCraft is now proud to offer the NRG line of class-A and A/B amplifiers. We also offer the complete line of Unity Audio speakers with superior class-A balanced design. Satisfaction guaranteed with personal service and technical advice. For free, no-obligation information, call or write: FidelityCraft, 643 Windemere Drive, Brighton, MI 48116. (313) 227-9740. Visa/MC.

LINN ITTOK LVII TONEARM, 2 years old, minimal use, mint condition, $450. Call Bill, (201) 289-6055.

LINN LP-12 VALHALLA 'TABLE', latest mods, $800. Adcom GCD-575 CD player, $300. NAD 7100X 50W receiver, new, $450 ($750 list). Philips 6695 hi-fi stereo VCR with surround, brand new, $400 ($650 list). Naim speaker cable, 2 x 6 m, $50. D&K Mastersound interconnects, 1 pair, $25. (505) 989-8990.

WADIA 2000, less than 1 year old, mint condition, sacrifice, $4800. Call Fred, (201) 930-1320, evenings.

INFINITY RS2B, excellent condition, $1700. (314) 445-6042.

REDISCOVER FM STEREO—Informative booklet on how to improve your FM reception. Free for the asking from the "FM Specialists" at Magnus Dynalab, 6509 Transit Rd. #H1, Bowmansville, NY 14026, or call (800) 448-8490.

MAGNUS DYNALAB UPDATE PROGRAM. Factory upgrading to "Eutee" specification available for FT-101 models. See your authorized dealer or call/write for information. Magnus Dynalab, 6509 Transit Rd., Bowmansville, NY 14026, (800) 448-8490.

MIT, MAS, OCOS, Cards, custom terminations, Camacs, XLR balanced, high-flexibility tonearm sets; Speakers elements, custom Shallcross volume controls; MIT MultiCaps & Wonder Capsholder/wire; all types audio connectors, tonearm and chassis wires; accessories/mod parts, $1 catalog ($3 overseas); Michael Percy, Box 526, Inverness, CA 94937, (415) 669-7181.

MOD SQUAD DELUXE LINE DRIVE AGT, $700. Call (307) 358-5908 (be persistent).

add's, REVOX, ADCOM, B&W, CARVER, Nakamichi, Bang & Olufsken, KEF, Denon, Harman/Kardon, Celestion. Many new loudspeakers, CD's, electronics and surround-sound systems. All products covered by manufacturers' USA warranties! Courteous, knowledgeable consultation. Amerisound Sales Inc., 24 brs., East: (904) 262-4000; West: (818) 243-1168.

LPs/CDS/Tapes

MOBILE FIDELITY SOUND LAB BEATLES collection, opened and played twice, $750. (916) 343-4515 days.

AUDIOPHILE RECORD AND CD inventory closeout! Sonic Arts Corp. announces a once-only offer of limited-edition direct-to-disc and direct-to-digital recordings. JGH called our Mozart and Rachmaninoff recordings 'A landmark in musical fidelity.' Classics, jazz, much more! Send #1 for catalogue to: Sonic Arts Corp., 665 Harrison St., San Francisco, CA 94107, or call (415) 781-DISK.

AUDIO... BY GEORGE has a complete stock of Reference Recordings, Sheffield Recordings, and Chesky Records. And we are expanding our stock of Opus One records. To receive a current list, without charge, call (716) 377-0432.

CLASSICAL RECORD SALE. Our latest classical catalog is available. Many audiophile collectibles and import LPs. Large selection of mono, stereo, and digital. Write or call for catalog, First Chair Records, PO. Box 629, Walkersville, MD 21793, (301) 845-8997.
Audiophile Record Warehouse! Out-of-print direct-to-disc, half-speed, Quiex II, and import pressings. Great selection of in-print records and CDs. ATR, Chesky, East-Wind, Mobile Fidelity, Opus 3, Wilson, and many more. Call for free catalog. Elusive Disc, 5346 N. Guilford Ave., Indianapolis, IN 46220, (317) 255-3446.


Fifty dollars paid for mint copies: RCA LSC2225 (Witches’ Brew), Mercury SR90212 (Paray/Chabrier). Others wanted. Autographs and 2-track open-reel tapes wanted. Randall Goldman, Box 1, Kenilworth, III. 60043.


Wanted


Great opportunity for the right experienced salesperson; someone capable of growing with a stable 15-year-old organization. We have a small high-end boutique atmosphere, emphasizing teamwork and specialized custom home entertainment installation. If you know the basics and are willing to learn ways to achieve your potential, call (312) 549-8023 and ask to speak to Phil or Kevin, or send resume and references to: Paul Heath Audio, 2036 N. Clark St., Chicago, IL 60614.

AIWA F990 CASSETTE DECK: $100 finder’s fee for first non-owner’s advisory resulting in purchase. Whit Whittemore, 2216-D SE 4th, Boynton Beach, FL 33435, (407) 737-6461.

WANTED: Part for Acoustic Electronics AIR 2.2 power amplifier (transformer on supply board for output transistors). Will pay reasonable price. Please call Dan at (908) 236-2362.

WANTED TO BUY: Akai GX-M10 cassette deck, new or used. Steve, (915) 852-9088.

ARC LSI, Theta Pro Basic, Sony CDP-X77. Douglas, (415) 462-7808.

Cash paid for all types used audio equipment. We buy and sell by phone, top dollar paid. Authorized dealers for B&K, Avidon, AR, Celestion, Parasound, Counterpoint, etc. The Stereo Trading Outlet, 320 Old York Rd., Jenkintown, PA 19046. (215) 886-1650.

Top retail $& for McIntosh tube and SS, Marantz tube. ‘50s and ‘60s JBL, EV Patricians, Mark Levinson. (313) 229-5191 evenings EST.

The best record rack in America

Free mailorder brochure
(please mention Stereophile)

Per Madsen Design (415) 928-4509
P.O. Box 330101, San Francisco, CA 94133

Congratulations

AudioCenter

4134 N. Federal Highway
Ft. Lauderdale, FL 33308
(305) 566-0233

Premier Dealer
United States

New Arrivals:
Avalon Eclipse
Martin-Logan Quest
ProAc Response 3
Vandersteen 3
Theta DS Prime and TRANSPORT

JEFF ROWLAND DESIGN GROUP

Stereophile, June 1991
THE STEREOPHILE ADVERTISING STANDARDS

Advertising published in Stereophile is accepted on the premise that the merchandise and services as offered are accurately described, and are available to customers at the advertised price. Advertising that does not conform to these standards, or that is deceptive or misleading, is never knowingly accepted. If any Stereophile reader encounters noncompliance with these standards, please write: Nelson & Associates, 62 Wendover Rd., Yonkers, NY 10705.

ADVERTISER INDEX
Two big announcements: As mentioned last month, Stereophile is now available in Chinese, starting with this issue. Due to excellent arrangements for rapid translation and production, the Chinese June Stereophile should be out in—June! Our Taiwanese collaborator in this venture, Edward Chen, has gained valuable experience translating, producing, and distributing the Chinese edition of TAS over the past two years; we’re happy to welcome him as a member of Stereophile’s international team.

Unlike the Chinese TAS, the Chinese Stereophile will be its own magazine. Most noticeable is an approximate 30% increase in physical size: in Chinese, Stereophile will measure 26cm by 19cm, to match local hi-fi magazines. And, although the Chinese contents will faithfully reflect the original English, a 16-page section originating in Taiwan and Hong Kong, authored by local audiophiles and authorities, will be inserted.

The Second Big Announcement concerns another addition to the Stereophile family, this one domestic: from April 25, the Schwann record guides are published by Stereophile, Inc. Editorial offices are currently in Boston, where the publications were founded, and will stay there. The Chatsworth, CA business offices have moved to Santa Fe.

I couldn’t believe that the Schwann name and publications were up for sale when a broker called me in early March. After all, Schwann isn’t just a publication—it’s a discographic institution! As did many of you, I grew up with Schwann, consulting it whenever I needed to know the entirety of what was available of a particular work or by a specific artist.

If you’re a Schwann reader, I’d like to hear from you; if not a Schwann reader, become one! Just send $20 and your name and address to P.O. Box 5529, Santa Fe, NM 87502 to receive four quarterly issues of either Opus (classical listings) or Spectrum (everything else): $40 for both, natch. Our goal is simple: to recapture Schwann’s right to the slogan “The world’s guide to recorded music.” Achieving perfection is certainly not simple—after all, no one succeeds—but setting that goal is simplicity itself, and an excellent start.

I’ve abbreviated my plug for our latest in-
Let the music move you in a whole new way. . . . Lose yourself in the sound of the new Quantum Series audio cables from TARA Labs, the makers of the famous Space & Time cables.

The powerful, dynamic sound of Quantum Series cables will transform your audio system. You’ll hear a deep bass “punch” and a crystalline treble clarity that’s like hearing music for the first time. Our cable configuration and natural fibers virtually eliminate electrostatic noise, for pristine high frequency detail and ambience.

And if that’s not enough to give you goosebumps, Quantum Series cables start at a mere $2.95/foot. Ask your authorized dealer about Quantum Series cables. . .

But don’t say we didn’t warn you.

Call TARA Labs for your nearest authorized Quantum dealer
2567 Siskiyou Blvd., Ashland, OR 97520
503/488-6465

© Copyright 1990 TARA Labs, Inc.
TM—Quantum Series is a trademark of TARA Labs, Inc.
"It's amazing" most people say, "how much better my system sounds with AudioQuest cables. I can't believe what I've been missing!"

AudioQuest makes a full line of performance engineered cables; speaker, audio-interconnect, video, S-video, fiber-optic and installation cables.

AudioQuest has spent 12 years continually improving and fine tuning its cable designs to reduce all types of cable-induced distortion — and to do it cost-effectively. Many different constructions and four grades of copper and silver are used depending on the budget.

AudioQuest F-18 speaker cable is one of three very flat cables which use multiple-solid conductors. The sound is sweet and clean because strand interaction is eliminated, while skin-effect and resistance are minimized.

AudioQuest Indigo Hyperlitz speaker cable uses geometry similar to our most expensive cables, yet is very affordable. The clarity, dynamics and sense of acoustic space are incredible, due to the constant proximity of the spiraled, magnetically isolated conductors.

AudioQuest Lapis Hyperlitz interconnect cable uses a patented construction which eliminates strand interaction and minimizes distortion caused by insulation. Teflon insulation, FPC-6™ copper (99.99997% pure), and resistance-welded, direct-gold plated, FPC™ plugs make this cable sound incredible. The aural invisibility of this cable is something you will have to experience for yourself.

AudioQuest's absolute commitment to value doesn't mean that all AudioQuest products are inexpensive. It does mean that the expensive products are a very good value when used with better systems.

No matter what type of equipment you have, maximize your system's performance with AudioQuest cables! Contact your local AudioQuest dealer and listen for yourself. You can hear the difference!