

### SMALL SYSTEMS HIT THE BIG TIME

LABORATORY TESTS CD Enhancement Products: Do They Really Work?

ALSO TESTED Yamaha Amplifier, Harman Kardon Dolby S Cassette Deck, and More





# The part you see.

Measured in technical achievement and customer satisfaction. Introduced in 1987, the Bose Acoustimass-5 speaker system simultaneously overcame the placement limitations of large speakers and the performance compromises of conventional small speakers. Finally, it was possible to generate pure, deep bass from a truly compact enclosure.

The Acoustimass system changed the way people think about loudspeakers, and quickly became the speaker system of choice for music lovers around the world. Stereo Review said: "...side by side with speakers costing three to five times as much, the AM-5 [Acoustimass] consistently produced the more exciting and listenable sound..."\*.

How has Bose celebrated this success?

By spending three more years in research, making Acoustimass speakers even better.

\* Julian Hirsch, Stereo Review, 1987

Like the original, once the new Virtually Invisible<sup>®</sup> Acoustimass-5 system is in place, all you see are the two tiny cube speaker arrays. The new cube speakers are smaller, more powerful, and more fashionable. You enjoy spacious, lifelike music reproduction from a system that blends easily into any decor.

Now let's examine the benefits of the new Acoustimass bass module, the easy-to-hide part of the system you normally don't see.



# The part you don't see.

### Patented Bose Acoustimass speaker technology makes the difference.

Improved technology is found in the new Series II bass module.

Three acoustic masses instead of two. Benefit: 36dB/octave acoustic crossover rolloff! Provides complete freedom to hide the bass module anywhere in your room.

New system protection circuit with twice the energy dissipation capability. Benefit: More system rotection at high output volumes. Increased reliability.

New elliptical toroid conduit for the radiating air mass provides for laminar air flow. Benefit: No audible noise caused by turbulence, even at high loudness levels.

(Plexiglass model for illustration purposes only)

he technology of the Virtually Invisible® Acoustimass bass module is unlike that of any conventional speaker system. The sound is launched into the room by an air mass, rather than directly by a vibrating surface.

The new technology introduced in the Series II bass module is detailed in the photograph above.

The benefits of the complete Acoustimass-5 Series II speaker system are:

- Pure, deep bass that seems to come from the tiny cube speaker arrays.
- Full fidelity sound from a Virtually Invisible® speaker system that blends into any decor.
- A variable width sound stage that can be set by rotating the Bose Direct/Reflecting® speaker arrays.
- Consistently high quality that you expect from Bose, achieved through Syncom<sup>®</sup> computer testing.

wham MA 01701-9168 USA (5081879-7330 FAX (506187)

Three acoustic compression chambers instead of two. Benefit: Reduced cone motion providing virtual elimination of audible distortion.

### Hear the difference yourself.

The best way to appreciate the sound of the new Virtually Invisible Acoustimass-5 Series II speaker system is to ask your dealer to demonstrate it side by side with conventional systems costing much more. For the name of a Bose dealer near you, and to receive a brochure, call;

(1-800-444-2673) 8:30AM-9:00PM(ET) In Canada call 1-800-465-BOSE (2673) 9:00AM-5:00PM



# Adcom would like to make this perfectly clear.

R egardless of how sophisticated your stereo and video system is, it may never achieve its full performance if plugged directly into an AC outlet. Raw and unprocessed AC power can severely diminish the clarity of audio signals and reduce the resolution of your video picture.

ADCOM's ACE-515 AC Enhancer significantly improves the performance capabilities of your system by filtering and processing raw AC power, unveiling a pure, noise-free power source.

#### Listen To The Critics

"...the effective suppression of AC 'RF hash' by the ACE-515 improved clarity and lowered noise in all three CD players....the significant improvements in instrumental and vocal harmonic retrieval and hall ambience are superb.... it simply appears to allow musical information to be passed through to the listener with less veil and electronic 'haze.'" -Lewis Lipnick, Stereophile, Vol. 11 No. 4, April 1988.

Recommended accessory in Stereophile, Vol. 12 No. 4, April 1989.

#### Line Protection: It Pays For Itself

The ACE-515 also protects your valuable equipment from harmful high-voltage spikes and surges. And, its sequential turn-on/turn-off control circuit guards your speakers from disturbing, damaging thumps.

#### Again, The Critics Agree

"Electronic equipment (especially digital audio gear) is vulnerable to both annoying and catastrophic power-line problems. Your stereo gear should have line spike and surge protection, with hash filters thrown in too. Line protection—you can pay a little for it now, or you can pay a lot for it later."

-Ken Pohlman, AUDIO, November 1987.

For a modest investment, the ADCOM ACE-515 enhances both audio and video clarity while protecting your equipment from damaging line voltage disturbances. Once again, ADCOM lives up to its reputation of offering superior performance at a reasonable cost. For complete technical data, please visit your Adcom dealer. You'll discover the ACE-515 is more than an accessory. It's a necessity.





Cover

The four-piece Nakamichi minisystem is just one of many new solutions to the problem of fitting high-quality audio equipment into a small room. For more, see "Small Systems, Big Sound" on page 45. Lamp courtesy of Lee's Studio Lighting, New York.

Photograph by Dan Wagner

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# EQUIPMENT

Hirsch-Houck Labs Equipment Test Reports	
CD Magic	
Small Systems, Big Sound.45Today's shelf systems are packed with features and sizedto fit anywhere • by Rebecca Day	
All Around the House       48         Making your audio or audio/video system work in more than one room         may be easier than you think • by Daniel Kumin	
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the Yellowjackets, and more



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### Breathtaking

Mandio

C (B C) Solerado

### Listen To The Next Generation Of Loudspeakers

The new RTA 15TL is both a sonic and aesthetic breakthrough. It is also priced to create a new standard in value. Ask for a demonstration at your authorized Polk dealer. You'll hear the detail, depth and excitement of a live performance.

You'll hear...and see... the next generation of loudspeakers.



Where to buy Polk Speakers? For your nearest dealer, see page 87.

#### by Rebecca Day and William Livingstone

#### **Environmentally Correct**

Pioneer Electronics has begun packing its car electronics products in a combination of recycled paper and paper pulp instead of styrofoam. The company is also shipping its home and car stereo equipment in cartons made of recycled paper. . . . Vector Research is printing all of its packaging and owner's manuals for its products on recycled paper.

#### **Audio Design Contest**

Sony is sponsoring an international Audio Lifestyle design contest, open to students of any age or anyone graduating in 1991. Designs must be AC-powered and incorporate an AM/FM radio and CD player, and they must be original works that have not been previously presented in public. The grand prize is a \$10,000 scholarship and a Sony camcorder; additional prizes and scholarships will be awarded. Entries must be postmarked by July 31, 1991, and be received at Sony regional headquarters by August 15. Entry kits are available from Marie Berardino, CRN, 8 Bond St., Suite 200, Great Neck, NY 11021; telephone (516) 487-5904.

#### **Music Notes**

Pro Set Super Stars Musicards are a 265-card set of trading cards honoring such popular stars as Madonna, Janet Jackson, Vanilla Ice, M.C. Hammer, and Alannah Myles. They are sold in wax packs of ten cards for 50¢ to 69¢ a pack at comic-book stores and other trading-card outlets. Commemorating its one-🛱 hundredth anniversary, the Chicago Symphony Orchestra has released a twelve-CD set that contains forty-nine performances by twenty

conductors. About 70 percent of the music comes from live broadcast tapes never made publicly available before. Price: \$175 plus \$5 for shipping from Chicago Symphony Fulfillment Center, 847 West Jackson Blvd., Chicago, IL 60607.... On July 10, the opening concert of the twentyfifth Mostly Mozart Festival will be televised by PBS in the Live from Lincoln Center series. The soloists will be the flutist James Galway and the pianist André Watts. Gerard Schwarz will conduct. . . . Billboard Books has just published an updated edition of Joel Whitburn's Billboard Book of Top 40 Albums, which lists every album to reach the Top 40 of Billboard magazine's sales charts from 1955 to the present.

#### Home of the Future

The Bright Home, an exhibit home in Indianapolis constructed by PSI Energy and Indiana Power & Light Co., is the first working display of technology using the CEBus home automation standard. Developed by the Electronic Industries Association's Consumer Electronics Group, **CEBus** enables communication throughout the home among a variety of electronic products using existing power lines, telephone wires, coaxial cable, and infrared signals. Panasonic, Sony, and Thomson/RCA contributed CEBus products to the exhibit. The home will be open to the public through September.

#### **Home Shopping Channels**

Audio-Forum of Guilford, Connecticut, has published a new mail-order catalog of musical audio and video cassettes. It includes tapes for jogging, ethnic and children's

music, musical-instrument instruction, opera, and programs on the history of music. For a free copy of the catalog call 1-800-243-1234.... Cadence of Redwood, New York, claims to carry a larger number of jazz/blues labels (more than 700) than any other source in the world. They accept Visa and MasterCard and ship by UPS within 24 hours. Call (315) 287-2852.... Tower Records/Video maintains a complete mailorder service for LP's, audio cassettes, CD's, VHS videocassettes, and laserdiscs. For ordering information call 1-800-684-4844 (U.S. only) or (212) 505-1500 (worldwide).

#### The Jazz Beat

Tito Puente, the king of Latin music (especially Latin jazz), won this year's Grammy Award for the Best Tropical Latin Performance with his composition Lambada Timbales from the Concord Picante album "Goza Mi Timbal." Concord Picante has now released Puente's onehundredth album as a leader, "Out of This World," which is available on CD and cassette. . . . For the eighth year JVC is sponsoring iazz festivals in the United States and Europe. The American JVC jazz festivals take place in New York City, June 21 to 29, and at Newport, Rhode Island, August 16 to 18. JVC's jazz festivals in Europe will be held in Paris, July 5 to 10, The Haque, July 11 to 14, London, July 15 to 20, and Nice, July 12 to 22.

# LETTERS

#### Distortion

Ken Pohlmann's May "Signals" column ("Hidden Distortion") and reader Phil White's letter in the same issue helped me make sense of the seemingly unreasonable demands of "audiophiles" when we expect our music-reproduction systems, which are limited to the stimulation of only one sense, to produce a fully satisfying experience. The absence of a visual element in home music reproduction unreasonably burdens the listener and is itself a form of distortion. I can far more passionately connect to a live or televised or theatrical musical event (and memories of such) than to all but a very few of my many audio-only recordings. My guess (hope) is that the most significant audiophile development of the Nineties will be high-definition, wide-aspect-ratio television and the expansion of hi-fi audio/video concert recording.

Meanwhile, I will continue to seek from my music system and from every disc I bring home a totality of experience that is beyond their capacity to provide, trying to get my ears to reproduce a vivid visual image.

GREGORY LAVIN Chico, CA

#### **Digital Eight**

In May "Bulletin" it was announced that manufacturers have agreed on a new 16-bit PCM digital stereo audio format for Hi-8 camcorders. You state that the new system will be switchable between 48- and 32-kHz sampling frequencies, thus "eliminating the possibility of a direct digital recording from a CD or DAT." As I recall, the sampling frequencies for the CD and digital audio tape formats are 44.1 and 48 kHz, respectively. Could you clarify?

> TIM GANNETT Davenport, IA

Recordings made through a DAT deck's analog inputs use the 48-kHz sampling rate and thus could be copied directly, but commercially duplicated DAT's use the 44.1-kHz sampling rate.

#### King's X

Ron Givens accurately and openmindedly evaluates "Faith Hope Love" by King's X in his May review, but he "warns" us that this is a *Christian* band with glowingly positive lyrics. He implies that non-Christian listeners tolerate their religious views and simply focus on the powerful secular music. That's ironic since we Christian rock fans have had to "tolerate" decades of rock lyrics elevating drugs and alcohol, demon worship, wanton sex, violent acts, and various asocial or perverted escapades. It's refreshing to hear music supporting higher aspirations. Maybe people can tolerate some values for a change.

> TED ALEKEL Albany, OR

#### **Subwoofer Positioning**

In May "Audio Q&A," Ian Masters states, "It's the nature of subwoofers, and bass drivers generally, to be very sensitive to position." For years I've been reading in STEREO REVIEW that one

YAMAHA

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Our new R/2 Series embody a simple, elegant design that optimizes the location of the drivers and minimizes edge diffraction.

They also utilize Yamaha's exclusive Multilayer Microcell Tweeter. A new design that of the advantages of subwoofers is their indifference to position. Have I misunderstood something?

HERB GOLDMAN Tustin, CA

It depends on what aspect of reproduction you're talking about. Subwoofers can usually be placed almost anywhere in a room without disturbing the stereo image established by the main speakers. On the other hand, the low-frequency response of a speaker depends greatly on where it is placed relative to room boundaries, such as walls and the floor. One advantage of a three-piece speaker system is that you can place the small satellite speakers for good stereo imaging and the woofer module for good bass response—you don't have to compromise one for the sake of the other.

#### **Animal Activists**

As a long-time reader of your magazine, I was furious to see you even mention (in May "Record Makers") the album "Tame Yourself," released to benefit People for the Ethical Treatment of Animals (PETA). Behind the name of a perfectly legitimate-sounding cause hides a self-serving organization based on terrorism and deceit. Witness the fact that PETA serves as spokespersons for the Animal Liberation Front-a recognized terrorist group responsible for millions of dollars of damage to laboratories engaged in biomedical research that benefits animals as well as people. Witness that co-founder Alex Pacheco admitted under oath to faking photographs in the now-famous Silver Springs monkey case. Witness the statement of their philosophy by co-founder Ingrid Newkirk, "a rat is a pig is a dog is a boy." This group is not pro-animal; it is antihuman!

NAME WITHHELD BY REQUEST Santa Barbara, CA

#### Mono CD's

Your response to reader John Blair in December 1990 "Letters," that "Any record company that adheres to any kind of truth-in-labeling policy will identify a monophonic recording as such somewhere on the package," is grossly in error. As an inventor and researcher in the sound-enhancement field, 1 frequently purchase mono CD's. Over 90 percent of the hundreds in my collection are either unlabeled or mislabeled. There is no such thing as truth-in-labeling within the recording industry with respect to marketing mono CD's.

RICHARD G. BROADIE Palm Springs, CA

#### Corrections

We recently learned that Proton has decided not to go ahead with manufacture of its AP-600T preamplifier/tuner, a photo of which appeared on page 61 of the May issue in the article "The Preamplifier/Tuner."

The price of *The Listening Room*, a computer program from Sitting Duck Software designed to aid in speaker placement, is \$34.95, not \$30 as stated in April "Letters."

uses a remarkably light yet rigid microcell diaphragm material. Creating a tweeter that recovers and responds virtually instantly to any audio signal.

Resulting in a line of speakers with exceptionally smooth tonal balance and superior imaging characteristics.

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Dances With Wolves (Epic/Associated) 417-436 Screaming Tree—Uncle Anesthesia (Epic) 417-402 Roger McGuinn-Back From Rio (Arista) 416-149 Various Artists—The "Amadeus" Mozart (CBS) 416·123

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Peter Gabriel-Shaking The Tree. Title cut plus Big Time; Red Rain; etc. (Geffen) 415-968

Harry Connick, Jr.—We Are in Love (Columbia) 406-645

Rolling Stones-Steel Wheels (Rolling Stones Rec.) 387.738

Billy Idol-Charmed Life 386.789 (Chrysalis) (Chrysans) Don Henley—The End Of The Innocence (Geffen) 383+802

Michael Bolton-Soul Michael Bottori-Provider (Columbia) 383+083

Tom Petty—Full Moon Fever (MCA) 382 382.184 Roxette-Look Sharp! (EMI) 381-939 The Cult-Sonic Temple (Sire/Reprise) 381.798 (Sire/Reprise) Bonnie Raitt-Nick Of Time (Capitol) 381-087 Time (Capitor) Beaches—Original Soundtrack (Atlantic) 379+669 Journey—Greatest Hits (Columbia) 375-2 375.279 The Bernstein Songbook -Selections from West Side Story,On The Town, etc. Bernstein cond. (CBS) 371.088

Billy Joel—Greatest Hits Vols. 1 & 2 (Columbia) 336+396/396+390 En Vogue-Born To Sing (Atlantic) 408-112



Pretty Woman-Original Soundtrack (EMI) 405-407 Best Of Blondie 311-811 (Chrysalis) The Aliman Brothers Band-Seven Turns (Epic) 407.692 Bad Company—Holy Water (ATCO) 406 406.694



Bobby McFerrin-Medicine Music (EMI) 412.064 Rush-Presto (Atlantic) 401-695 Grateful Dead-Bullt To Last (Arista) 388.025 Elton John-Sleeping With The Past (MCA) 387-993 Bad English (Epic) 383-463

Fleetwood Mac-Greatest Hits (Warner Bros.) 375.782 Pretenders-The Singles (Sire) 362-541 U2-The Joshua Tree (Island) 354.449 M.C. Hammer-Please Hammer, Don't Hurt 'Em (Capitol) 403-477

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Time's Up	Midnight Oil—Blue Sky	Boss Ba
410.357	Mining (Columbia) 402-636	Count B
Violin	Duran Duran-Decade	(Warner
k Perlman	(Capitol) 401-869	Michael
nhoim	Pat Benatar Bast Shote	You See

# NEW PRODUCTS



#### Epos

The Epos11 loudspeaker has rigid, injection-molded front and rear baffles formed from a polymer said to have excellent self-damping properties. The two-way system consists of a 61/2-inch polypropylene cone woofer and a 1-inch aluminum dome tweeter with minimal crossover circuitry. Frequency response is rated as 60 to 20,000 Hz, sensitivity as 87 dB. Nominal impedance is 8 ohms. Biwiring is possible via two pairs of solid-brass terminals. The medium-density-fiberboard cabinet is finished in black-ash or walnut veneer. Dimensions are 14<sup>3</sup>/<sub>4</sub> x 8 x 9<sup>3</sup>/<sub>4</sub> inches; weight is 17<sup>1</sup>/<sub>2</sub> pounds each. Price: \$850 a pair. Epos, distributed by Music Hall, Dept. SR, 108 Station Rd., Great Neck, NY 11023.

#### Soundstream

Soundstream's MC245 car stereo power amplifier has four 35-watt channels and a single 100-watt subwoofer channel. The 35-watt channels can be used for conventional front/rear speaker systems or for biamplified component speakers with two treble and two midrange channels; they can also be bridged into two 90-watt channels for use with more demanding speakers. The amplifier's output circuits are said to provide capacity far in excess of requirements so that no current limiting is necessary. Smart power supplies protect against overheating by sensing the amp's operating temperature and temporarily reducing the power supply's output. Price: \$599. Soundstream Technologies, Dept. SR, 120 Blue Ravine Rd., Folsom, CA 95630.





#### Yamaha

Yamaha's CDC-615 five-disc CD changer features the company's S-bit technology, with four single-bit digitalto-analog converters, an 18-bit fourtimes-oversampling digital filter, and a third-order noise shaper. The transport system features a floating laser-pickup mechanism, center support bar, and large vibration-damping feet to keep internal and external vibrations to a minimum. The PlayXchange feature enables users to replace as many as four discs in the carousel while a fifth is playing. Other features include repeat of a track, disc, or sequence of tracks, bidirectional disc skip, twenty-track programming, and a remote control. Price: \$299. Yamaha Electronics, Dept. SR, 6722 Orangethorpe Ave., Buena Park, CA 90620.

### NEW PRODUCTS



#### Panasonic

The Panasonic SC-CH10 minicomponent system features Dolby Pro Logic circuitry, with variable digital delay, and a digital signal processor offering four additional ambience modes: Disco, Live, Concert Hall, and Dome. Included are a preamplifier with a five-band equalizer, dubbing cassette deck, power amplifier, combination tuner/compact disc player, and three-way front-channel speakers. Rear- and center-channel speakers are optional. The biamplified system has a 30-watt-per-channel amp for the bass frequencies and a 5-wattper-channel amp for the midrange and high frequencies. There are also two rear-channel amplifiers rated at 5 watts

each. The supplied speakers feature Tri-Chamber Bass construction, in which each driver has its own ported subenclosure for enhanced response. The cabinets measure 151/8 x 71/2 x 121/3 inches. The tuner has twenty-six presets and a program-timer function, which enables users to fall asleep listening to one source at one volume level and wake up to another source at another volume. The CD player features Edit Guide and Auto Tape Level functions for recording to cassette. The components are  $8\frac{1}{2}$  inches wide. Price: \$1,050, plus \$100 each for rear- and center-channel speakers. Panasonic, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

#### Museatex

Museatex has customized the circuitry and completely re-engineered the CD mechanism for its Melior CD Deck. The suspension and damping are said to be better than in standard players, resulting in minimal resonance and rattle and fewer data errors. The full-metal chassis is said to provide superior mechanical rigidity, isolation, and RF shielding. All critical circuits are protected by special copper shielding. There are standard fiber-optic and coaxial digital outputs as well as a Museatex Bus output for use with future Museatex digital products. A full-function remote control is supplied. The companion outboard Melior digital-to-analog converter (not shown) uses Bitstream 1-bit conversion technology along with a special anti-jitter input circuit. Prices: CD Deck, \$1,650; converter, \$800. Museatex, Dept. SR, 6605 Thimens, St. Laurent, Quebec H4S 1W2.





#### **Audio Research**

The Audio Research D240 solid-state stereo power amplifier is rated to deliver 120 watts per channel into 8 ohms or 240 watts into 4 ohms. Its fully regulated power supply is built around a heavyduty transformer and 144,000 microfarads of filter capacitance. The amplifier is protected against fault conditions by circuitry outside the signal path. It has both normal and inverted-phase RCA inputs as well as balanced XLR inputs. Output terminals are custom machined, gold-plated binding posts that can accommodate biwiring. Price: \$2,795. Audio Research, Dept. SR, 6801 Shingle Creek Pkwy., Minneapolis, MN 55430.

### NEW PRODUCTS

#### **MB** Quart

MB Quart's 490MCS bookshelf loudspeaker, featuring the company's new Moving Control System technology, is said to combine the best aspects of acoustic-suspension and bass-reflex woofer loading. The MCS system uses two ducts: The larger one is said to make the speaker react like a bass-reflex system and produce "tighter" bass; the smaller duct vents the larger one to eliminate distortion. Besides an 8-inch woofer, the 490MCS has a 1-inch titanium-dome tweeter. Frequency response is given as 37 to 32,000 Hz, sensitivity as



89 dB. Finishes include black, white, walnut, oak, and raw oak; cherry and pine are available for a 15 percent surcharge. Dimensions are 11 x 17¼ x 11¼ inches. Price: \$849 a pair. MB Quart Electronics, Dept. SR, 25 Walpole Park S., Walpole, MA 02081.



#### Hitachi

The VIP-RX6, Hitachi's first combiplayer, can handle 5-inch compact discs or CD-V's and 12-inch laserdiscs. Circuit features include an eight-timesoversampling digital filter and a 1-bit digital-to-analog converter with doublestep noise shaping. Operating features include a digital tilt-servo mechanism that automatically compensates for surface irregularities, a disc stabilizer that secures each disc against vibrations, and a Compu Program Edit function that selects tracks to fit the remaining time on a cassette. The VIP-RX6 also has random play, variable-speed search, direct program search, and still frame. Price: \$630. Hitachi, Dept. SR, 401 W. Artesia Blvd., Compton, CA 90220.



#### **Forté Audio**

Forté Audio's new line of power amplifiers employs insulated-gate bipolar transistors (IGBT's), which are said to combine the high input impedance and wide bandwidth of metal-oxide-semiconductor field-effect transistors (MOS-FET's) with the low output impedance and high-current capability of bipolar transistors. The stereo Model 4 (left in photo), rated at 50 watts per channel, and the 75-watt monoblock Model 7 (right) are both designed for pure Class A operation. They have single-ended, Class A FET/bipolar cascode circuits as their front ends, and they are entirely direct-coupled from input to output to preserve phase integrity. Prices: Model 4, \$1,795; Model 7, \$1,295. Forté Audio, Dept. SR, 7325 Roseville Rd., Sacramento, CA 95842.

#### Fisher

Fisher's EQ-916 seven-band graphic equalizer comes with a remote control that operates most functions. The unit has five preset response curves and five user-programmable ones. An EQ-record button sends the equalized signal to the output jacks of the tape-monitor loop. Other features include a display dimmer, a spectrum analyzer, peak-hold buttons, and a bypass switch. Price: \$200. Fisher, Dept. SR, 21350 Lassen St., Chatsworth, CA 91311-2329.





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It's a Sony

Sony's headphone cord remote control lets you operate the D-303 even if it's in a briefcase. Our MegaBass<sup>™</sup> circuit brings you thunderous low frequencies. There's a convenient Quick Charge rechargeable battery. As a finishing touch, you have a choice of titanium or black finish. There's only one portable CD player with 1-bit technology. And only one conclusion. The D-303 is worlds apart.

# THE WINNER OF

### The 7th Rodrigues Cartoon Caption Contest

ONGRATULATIONS to Kelly S. Mills, of Raleigh, North Carolina. Mr. Mills is the winner of this year's Rodrigues Cartoon Caption Contest, and his winning entry is printed under the cartoon below.

As we did in previous years, in our issue of January 1991 we published a drawing by the cartoonist Charles Rodrigues and invited readers to submit proposed captions for it. The prize for the one the judges considered to be the funniest is \$100 and the original Rodrigues drawing.

The editors of STEREO REVIEW wish to thank Mr. Mills and the thousands of other readers who submitted captions. Entries came from all across North America; from U.S. troops in the Persian Gulf area; from Utuado, Puerto Rico; Kula, Hawaii; and such faraway places as Quezon City, the Philippines; Santiago, Chile; Bucaramanga, Colombia; and three cities in New South Wales, Australia.

We also thank the six previous winners—Thomas Briggle, of Wadsworth, Ohio, Michael Binyon, of Chico, California, Bruce Barstow, of Philadelphia, Pennsylvania, Matthew Mirapaul, of Evanston, Illinois, Marc Welenteychik, of Richmond, Virginia, and Douglas Daughhetee, of Augusta, Georgia—who served as judges.

Many proposed captions suggested that the speakers had to be destroyed because they were not digital-ready. Milli Vanilli was the pop group mentioned most frequently, and the classical composition named in the largest



"When we came in this morning, these were hanging upside down from the ceiling."

number of captions was Tchaikovsky's 1812 Overture.

Mr. Mills is a computer programmer for IBM. A long-time audiophile, he got his first system when he was in the seventh or eighth grade. He has upgraded his equipment several times and is now happy with an all-Philips system. The most recent addition is the FC-60 cassette deck, reviewed here in June 1990. According to Mr. Mills, the best thing an audiophile can do is "to find a dealer you like and trust, one whose taste in sound is similar to your own."

Mr. Mills and his wife have a rapidly growing collection of compact discs that numbers around 140 at present. "It's about 50 percent jazz, 20 percent classical, 20 percent rock, and the rest are musical shows, which my wife especially enjoys," he says. "We play the stereo so much that when it's off, the dog begins to pace nervously about the house."

The runners-up are printed below in no particular order. If your entry is not among them, we wish you better luck next time. We plan to announce next year's contest in January 1992.

-William Livingstone

#### Runners-up

"This is the only way we can get rid of trade-ins with a lifetime warranty."—Sid Wilson, Knoxville, Tennessee

"Our first clue? We found them back in the packing crates every morning." —Wayne Salo, San Francisco, California

"'Budget speakers and the men who hate them' on the next Geraldo."—Erik Bunk, Windber, Pennsylvania

"I don't care if she is a vampire. It's against company policy to lend out the stakes."—Mark Evans, Falls Church, Virginia

"I work for Plaza Stereo. He works for Jesse Helms."—Roy Kratzke, Sparta, New Jersey

"Flag burning is mere politics—this is art."—Jay Bauerle, Galveston, Texas

"We've found that it's an effective example for the other, slower-moving speakers on the floor."—Dennis M. Francis, Akron, Ohio

"This drives the competition across the street crazy."—Lloyd C. Curry, Greensburg, Kentucky

"These are the 'cosmetic flaws' you might have read about in our ad."—David Hart, Oak Park, Illinois

"What did you expect us to do when you said you didn't like them?"—Bryan Furse, Nashville, Tennessee **OWN YOUR FAVORITE MOVIES ON LASERDISC.** ANNOUNCING THE COLUMBIA HOUSE LASERDISC CLUB



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You buy only what you wan-when you want it! If you wart the Di ector's Selection, do nothing-it will be sent automatically. If you'd prefer an alternate selection, or none at all, just mall the response card always provided by the date specified And you'll always have 14 days to decide; if not, you may return the selection at our expense.

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### **CD:** The Next Generation

Some thing very exciting is about to happen to our old friend the compact disc. Specifically, after ten years of research and development, manufacturers are ready to introduce the Compact Disc Interactive (CD-I) format.

A CD-I player will do everything a regular CD player will do-namely, play back standard audio discs-and much, much more. In particular, a CD-I player will play a wide variety of audio and video recordings, both informational and entertaining in nature. A home CD-I player connects to both a stereo reproduction system and a television set. A CD-I disc contains a combination of audio and video data in digital form, as well as programming that makes the information "interactive." In other words, you don't just put a disc in the machine and play it. Using a remote control and an onscreen pointer, you make choices that determine what information the player presents to you. The nature of the choices and the way in which they are presented are determined by the computer programs embedded in the particular disc by its designers. Within the constraints of that programming, you can manipulate the presentation of the recorded information in any way you want. The computer in a CD-I player permits tremendous flexibility.

For example, if you are a student of military strategy, you might enjoy recreating the Persian Gulf War. Using

## SIGNALS

#### by Ken C. Pohlmann

the Time Warner disc "Desert Storm: The First Draft of History," you could analyze sounds, text, and full-color photographs collected during the conflict. With battlefield sounds played back at actual volume, you'll feel just like Stormin' Norman Schwarzkopf.

Maybe you're looking for the college that's right for you. American College Testing is developing a CD-I that catalogs all the four-year colleges in America. You can enter the characteristics you're looking for and get back a listing of appropriate schools along with multimedia information on their curricula, costs, financial aid and whether the dorms are coed.

Or you can just fool around. Games are being developed for both children and adults. Slip American Interactive Media's "Golf" into the player, for example, and you can play an engaging and remarkably realistic eighteen holes right in your living room.

CD-I players will also work with Kodak CD Photo discs-an ambitious new product to be launched next year. You'll be able to get your snapshots digitized and copied to CD, then view as well as zoom, pan, and edit the images on your TV screen through your CD-I player. And if you get tired of interacting, you can simply kick back and listen to audio CD's; the CD-I player will even provide you with a complete on-screen menu for finding tracks, timings, etc. If worse comes to worst and you have to hock your TV set to buy more CD's, you can still use the CD-I player just as you would a regular CD player.

But that's not all. The technology that makes CD-I possible will also enable movies to be released on CD and played back on CD-I players. That's right-by mid-1992 you'll be able to buy a feature film like Batman on CD, slip it into your CD-I player, pop some popcorn, hang from your heels, and enjoy the show. Even if you don't like Kim Basinger (hard to imagine), you'll enjoy the S-VHS quality of the video. Thanks to extremely hightech data-compression techniques, up to 72 minutes of full-motion digital video with a stereo digital soundtrack can be stored on a single disc. Most feature films could thus fit onto two discs, nicely packaged in a double jewel box.

Full-motion video playback capability will be available either as a software upgrade for basic players or as a standard feature on more expensive models. CD-I video will be very competitive with prerecorded videocassettes because CD-I's are cheaper to manufacture. Moreover, portable CD-I players with flip-up color LCD screens will enable convenient viewing while you're on the go.

The price of a CD-I player? Initially about \$1,000—about the same as for a first-generation audio-only player. Prices of the discs? Between \$15 and \$50 for most titles, with a rental market emerging later. Launch date? October 1991. Hardware manufacturers? Philips and Magnavox, followed by Fisher, Fujitsu Ten, Panasonic, Pioneer, Ricoh, Sanyo, Sharp, Sony, Tandy, Technics, Yamaha, and others.

One more thing. Let's get a head start on putting to rest a misconception that is bound to arise. I'm sure a lot of audio purists will wrinkle their noses at CD-I players, maintaining that CD-I is a bastardized version of "pure" CD, with inferior sound. That is absolutely wrong. Although a CD-I disc may employ reduced-bandwidth audio encoding, a CD-I player is 100 percent identical with an audio-only CD player when it is playing back audio-only discs. There is certainly additional circuitry in the chassis, but there is no reason why the audio output section can't be designed to the same specifications as the best audio-only players. In other words, a properly designed CD-I player will deliver all the sound fidelity of current CD players.

CD-I is the second coming of the compact disc, bringing exciting new dimensions to an already revolutionary format. I predict that, in time, most of the CD players sold will be CD-I-models, because no matter how much you love good sound itself, it will grow harder and harder to resist the siren song of interactive audio, not to mention music and art appreciation, music video, cartoons, children's stories, video games, sports programs, self-help books, college catalogs, textbooks, reference books, biographies, computer software, maps, novels, foreign-language instruction, almanacs, Bible studies, digital photograph albums, feature films . . . . 

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#### **Vinyl Distortion**

With all my LP's, both old and new, I can hear distortion in the form of a "ragged" sound quality when I'm playing the last song on a side, particularly during loud passages. Does this have anything to do with the distance between grooves toward the end of a disc?

> ANTHONY C. ACUNZO Branford, CT

If vinyl ever really dies, this effect will be one of its least-mourned aspects. A It's called "inner groove cramp," among other things, and it does have something to do with density-not the density of the grooves across the surface (called "pitch"), but rather the packing of data within the groove. Unlike a CD, an LP rotates at a constant rate, so the linear speed of the groove at the outer edge is much faster than it is near the label-more than twice as fast, in fact. Nevertheless, the same amount of information must be contained in one rotation in either place, which means it has to be crammed closer together in the inner portion of the disc. The twists and turns of the groove there are thus much closer together and the "corners" much sharper; the effect is worse if the levels are high, as they often are in classical music that ends with a crescendo. The best phono cartridges can negotiate ("trace") these curves with relatively little difficulty, but less ambitious ones often can't hack it and mistrack near the end of a side. This not only sounds terrible, but it can damage a record permanently.

#### **Taping Direct**

When I dub a compact disc to tape using my integrated amplifier, does the setting of the tone controls affect the recording, or is the signal flat? Would there be a noticeable difference if I hooked

### AUDIO Q&A by Ian G. Masters

the CD player directly to my tape recorder's inputs?

ANDREW KESSLER Rochester, NY

Assuming your tape deck is connected to the normal tape-monitor jacks, H the amplifier's tone controls would have no effect. The "tape out" jacks are placed in the circuit after the inputselector controls but before everything else, so that neither tone controls nor amplifier level controls affect the recording. The only difference there might be between this sort of "straight through" connection and a direct patch would occur if there were poor contact along the way-in the input switch, say, or in any of the cables, jacks, or plugs connecting the components. A direct connection reduces this risk to some extent; electrically there's no difference.

#### CD's via Tape Deck

My system includes an equalizer that has only one pair of inputs. To be able to feed both my cassette deck and CD player through the equalizer, I have connected the CD player to the tape deck's inputs. To listen to CD's, I have to press the record button and set the appropriate input level on the cassette machine. Is this setup likely to damage anything?

TIM ROBERTSON Battle Creek, MI

Your arrangement will probably not cause damage, but such a convoluted A signal path may result in some degradation of the sound. In most systems (but certainly not all of them), there are ways to avoid what you have been doing. Some amplifiers and receivers provide preamp outputs and main-amp inputs, and the equalizer should be inserted into the system at that point; all sources would then be equalized. Duplicate tapemonitor loops are also common, enabling you to use one for the tape deck and the other for the equalizer. Most such circuits allow the signal from one to be fed to the other; the purpose is mainly to allow tape duplication, but it is equally effective in letting you equalize both the "regular" inputs (such as a CD player) and the tape recorder. And many equalizers contain their own tape-monitor circuits to replace the ones on the amplifier occupied by the equalizer itself.

If none of these options is available to you, you would be better off to rig or buy a simple external switch that would allow you to select either the CD or tapedeck output to be fed to the equalizer. This would not preclude your repatching to feed the CD player for those rare occasions when you want to tape a CD.

#### **Dull Jacks**

Over the course of a few years, the jacks and screws on the back of my equipment have turned from a shiny silver finish to a dull, rough one. Is this likely to have any effect on sound quality? WALTER J. WILSON Philadelphia, PA

Eventually it might. Most such parts are made of aluminum, and that metal A naturally dulls with age as the surface oxidizes. A small amount of this coating is unlikely to cause problems, but a large buildup could disrupt the contact between the jacks and the cables plugged into them, which is why some higher-price components use connectors plated with gold, which doesn't oxidize. It's easy to prevent or cure a contact problem if it occurs, however: Simply unplug and replug each jack a few times every so often to scrape off the coating. A quick rub with fine sandpaper or steel wool will do an even more thorough job.

#### Center-Channel Amplifiers

An analysis of the main stereo channels but only 30 watts each to the two surround channels and the center channel. I have already upgraded by replacing the receiver's main stereo amps with more powerful ones fed from its preamplifier outputs. Would it be possible to use one or both of the now-idle 125-watt amplifiers to power the center channel?

JAY H. WALD Whippany, NJ

A Yes, as long as the receiver has the appropriate connections. Some receivers offer preamp outputs for various channels to make adding external power amplifiers simpler, but that doesn't necessarily mean that there are corresponding main-amp-in connections. Sometimes the signal from the preamp section feeds to the appropriate built-in amplifier even if it is not being used. If your receiver does have mainamp-in jacks, however, connecting the preamp-out signal for the center channel to one or both of these inputs would do the trick.

If you have a question about hi-fi, send it to Q&A, STEREO REVIEW, 1633 Broadway, New York, NY 10019. Sorry, only questions chosen for publication can be answered.

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### Reading the Mail

AlL from our readers provides a constant and valuable feedback on the "real world" questions that come up in the quest for better sound. Many (perhaps most) letters request specific advice on the makes and models of components to use, which is something that we cannot give. Even if a list of choices is provided, it is rarely possible to advise readers on which models to choose unless some of them are clearly unsuitable for the intended purpose.

My favorite reader questions concern approaches to equipment design that may or may not offer concrete advantages to the user but are vigorously promoted by certain manufacturers or simply accepted as "the way it is done." For example, one reader asked, what about the use of vacuum tubes instead of solid-state devices? Tubes are supposed to give improved sound, sound that is sometimes described as "smoother," more "musical" or "transparent."

I don't wish to get involved in that question other than to point out that it is highly controversial. On the objective side, it is unarguable that tube circuit distortions are typically orders of magnitude greater than those of equivalent solid-state circuits. Instead of the distortion ratings of 0.01 percent or less typical of transistorized components in all price ranges, tubed components of similar function are likely

## TECHNICAL TALK

#### by Julian Hirsch

to have distortion ratings of 0.5 percent or higher. They also cost more from perhaps a couple of hundred dollars more for a hybrid component (mostly solid-state, with limited use of tubes) to many times more for a fully tubed model.

If you are convinced that a costlier tubed component sounds "better" in some way, and you can afford to pay the price, by all means buy it and enjoy it. The higher distortion is of no importance, consisting largely of second and third harmonics, which are the least objectionable distortion components. On the other hand, I doubt that *any* piece of hi-fi equipment sold today has audible levels of harmonic or intermodulation distortion when operated within its ratings.

Other characteristics of tubes include higher noise levels, microphonics, and heat generation, which can reduce the life of other parts of the unit. Usually the frequency response of a tubed product, compared with that of a similar solid-state design, is not quite as flat at the upper and lower extremes of the audio range, which may be one of the reasons for the supposed smoother or softer sound quality often claimed for tube equipment. Tubes also have a relatively short operating life, are quite expensive, and are likely to become more expensive as time goes by.

Frankly, I would not select an alltube or hybrid component over a competitive solid-state component for my own use without a clear demonstration of its "superior" sound. I have yet to hear such a demonstration.

A somewhat less controversial question was posed by another reader. Having bought a three-piece speaker system of good quality, he wondered why its bass module has two woofers, with separate inputs for each channel. After all, since we typically employ higher-frequency transient information to localize sound sources, why not use a mono bass radiator?

To a great degree, the configuration is a matter of convenience in installation. In many three-piece speaker systems, the left and right amplifier outputs connect to the bass module, which contains the crossover network. From there, the middle and upper frequencies are channeled to the left and right satellite speakers. Sometimes, however, each satellite has its own internal crossover network, as does the bass module. That enables the signal to be routed independently to the various speakers.

Nevertheless, in every such system that I have seen, the bass section receives a stereo input, even though its acoustic output effectively appears in mono form from one or two drivers or their corresponding ports. Usually there are two separate drivers, often in separate enclosed volumes. Sometimes a single driver is used, with a dual voice coil; in effect, this sums the two channels to form a mono bass signal. All these designs, whether they use separate drivers or a single driver with a dual voice coil, share the property of providing similar electrical loads to the two channels of the amplifier. I suspect that this is the actual reason for maintaining electrical separation between channels.

But let's get back to the question of whether there are directional properties in the bass region—say, under 150 Hz. Most directional clues are received from differences in the arrival time of the signal at the listener's ears. This effect is most significant below 1,000 Hz (and this range can be narrowed considerably while retaining a considerable amount of directional perception).

Stereo recordings, however, typically depend on interaural amplitude differences, rather than arrival-time differences, to establish localization. Directional cueing based on intensity is effective primarily at higher frequencies, above the range normally handled by a subwoofer. That is one reason the subwoofers sold as supplements to a conventional stereo system can be (and usually are) used singly and, in fact, can be placed almost anywhere in a room without diluting their contribution to the overall sound.

Obviously, two subwoofers can generate more low-bass output than one, and under some circumstances that might justify using two. While some people also maintain that stereo qualities are more accurately preserved by using subwoofers in pairs, I am highly skeptical about that and have seen (and heard) no credible evidence that it is true.



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### Yamaha DSP-A1000 Integrated A/V Amplifier

Julian Hirsch, Hirsch-Houck Laboratories

THE DSP-A1000, which Yamaha calls a Digital Sound Field Processing Amplifier, requires only the addition of signal sources and loudspeakers to serve as the core of a versatile audio/video (A/V) system. It combines refined digital signal-processing circuits, a preamplifier providing switching and control facilities for both audio and video sources, Dolby Pro Logic surround-sound decoding, and no fewer than *seven* channels of audio amplification.

The DSP-A1000's Dolby Pro Logic system uses digital circuitry, with an automatic input-level balance control that maintains optimal surroundsound settings without user attention. It also has an "Enhanced" Dolby Pro Logic mode said to create a sound field typical of a standard (35-millimeter) movie theater. When this mode is used with the amplifier's Movie Theater DSP program, according to Yamaha, it re-creates the broader sound field typical of a 70-millimeter theater. Another special feature is a "directional enhancement" circuit that can be used with the Concert Video and TV Theater DSP modes to give the listener a sense of being in the midst of the audible action without making it sound detached from the screen.

Despite its considerable versatility, the DSP-A1000 is surprisingly simple to install, set up, and use. In normal operation, the front panel has only two visible knobs (volume and the input selector), a power pushbutton, a tapemonitor button (labeled TAPE 2), and a small LCD window. The input sources are identified as auxiliary, VCR 1, VCR 2, TV, LD (laser videodisc), DAT/Tape 1, tuner, CD, and phono. Opening the hinged door that extends across the bottom of the panel reveals three small knobs (bass, treble, balance) and a REC OUT rotary switch that enables the user to record audio or video programs from any source independently of the one being heard or seen.

Several narrow bar switches, labeled SET MENU, INPUT TRIM, EFFECT, and PROGRAM, provide a wide range of control over the DSP-A1000's digital signal-processing parameters. Their settings, and those of other operating controls, are shown in the front-panel display window or on the screen of a video monitor connected to the amplifier's video output. Also behind the hinged door are a headphone jack, a BASS EXTENSION button, and auxiliary composite-video, audio, and S-video inputs for connection of a camcorder or other temporary program source.

The seven power amplifiers in the DSP-A1000 include the main (left and right) front channels, rated at 80 watts each into 8 ohms from 20 to 20,000 Hz with no more than 0.015 percent total harmonic distortion plus noise (THD + N), a center front channel with a similar rating, a pair of front channels

rated at 25 watts from 20 to 20,000 Hz into 8 ohms at 0.05 percent THD + N, and a similar pair of rear effect channels. The amplifiers are also rated to drive 6-ohm loads, with power limits of 100 and 30 watts per channel for the main and center and the effects channels, respectively. The rear apron has phono jacks for the inputs (and outputs, where applicable) of all sources, plus the videomonitor output. All video circuits are also provided with S-video jacks. Insulated binding posts for all speaker outputs accept dual banana plugs or stripped wire leads. The center-chan-

### FEATURES

- Twelve preprogrammed primary digital sound-field memories, eleven with two modes; a total of twenty-three basic selectable acoustic environments
- Additional user-adjustable parameters, including initial delay, room size, liveness, low-pass filter cutoff
- Dolby Pro Logic decoder with normal and three-channel modes and optional Directional Enhancement feature
- Selectable normal/wide/phantom center-channel modes
- Bass and treble tone controls and balance control for main front channels
- Center-channel graphic equalizer with center frequencies of 100, 300, 1,000, 3,000, and 10,000 Hz and ± 6-dB range
- Adjustment readouts in front-panel window; can view on video monitor with adjustable color for screen background

(All figures for main channels only)

**1,000-Hz ontput power at clipping:** 134 watts into 8 ohms

Clipping headroom (relative to rated output): 2.2 dB

Dynamic power output: 156 watts into 8 ohms, 242 watts into 4 ohms

Dynamic headroom (8 ohms): 2.9 dB

Maximum distortion (20 to 20,000 Hz into 8 ohms): 0.025% at 20,000 Hz and 80 watts output

Frequency response: +0, -0.5 dBfrom 20 to 20,000 Hz

Sensitivity (for a 1-watt output into 8 ohms): CD, 20.5 mV; phono, 0.22 mV

- Effects-mute button for listening comparison
- Inputs for phono, CD, tuner, DAT/ tape 1, tape 2, LD (laserdisc), TV, VCR 1, VCR 2, auxiliary video and audio (front panel only)
- Separate selection of sources for tape recording and listening or viewing
- Tape 2 monitor button on front panel
- Seven power-amplifier channels
- Line-level outputs for effects and center channels and for external subwoofer amplifier (below 200 Hz)
- Separate main-channel preamplifier outputs and power-amplifier inputs with removable jumpers
- All video inputs/outputs with both phono jacks (composite-video) and S-video connectors
- Supplied remote control for all programming functions; preprogrammed for compatible Yamaha components; can learn commands for other components

### LABORATORY MEASUREMENTS

A-weighted noise (referred to a 1-watt output): CD, -81 dB; phono, -77.5 dB

Phono-input overload (1,000-Hzequivalent levels): 113 to 148 mV from 20 to 20,000 Hz

Phono-input impedance: 48,000 ohms in parallel with 230 pF

**Tone-control range:** 100 and 10,000 Hz, ±8 dB

Bass Extension response: +5.5 dB at 70 Hz, -20 dB at 20 Hz

**RIAA phono-EQ error:** +0.3, -0.8 dB from 20 to 20,000 Hz nel speaker outputs can be switched to drive either a single speaker or a pair. Preamplifier outputs for the main and center channels can be separated from their respective power amplifiers by removing jumper plugs. There is a line-level mono (full-range) output and an adjustable line-level subwoofer output (below 200 Hz) as well as front and rear effects-channel line outputs for driving external amplifiers. Two of the three AC outlets are switched.

The DSP-A1000 comes with a Yamaha RCX remote control that can operate virtually all of its many functions. In fact, the RCX controller should be used from the listening position to adjust the DSP and other parameters for the desired effect, with the display of menus and control options on the TV screen as a guide (the same information is also shown in the DSP-A1000's front-panel window, but it is readable only at fairly short distances). Both the volume and inputselector controls are motor driven when operated remotely, with red LED index marks to show their settings at a distance.

The RCX remote control is also preprogrammed to operate compatible Yamaha tuners, tape decks, VCR's, videodisc players, CD players, and DAT decks. The control buttons are grouped and colored according to their functions to minimize confusion. In addition, the RCX can learn the basic infrared command codes for most other audio and video components that might be used in a system with the DSP-A1000. (We found that it learned the play and pause/stop commands for a couple of CD players but would not operate their search and track-skipping functions.)

The Yamaha DSP-A1000 is, not surprisingly, a large and fairly heavy amplifier. It measures 17<sup>1</sup>/<sub>8</sub> inches wide, 18<sup>1</sup>/<sub>2</sub> inches deep, and 6<sup>3</sup>/<sub>4</sub> inches high, and it weighs 44 pounds. Price: \$1,499. Yamaha Electronics Corp. USA, Dept. SR, 6722 Orangethorpe Ave., Buena Park, CA 90620.

#### Lab Tests

Since direct access to the DSP-A1000's effects channels, without going through its internal digital circuits, would require making alterations to the circuit boards, we limited our amplifier measurements to standard tests of the main left and right channels.



Whitney Houston: I'm Your Baby Tonight (Arista) 10663 Traveling Wilburys, Vol. 3 (Warner Bros.) 24817

Trixter (Mechanic/MCA) 61594 Daryl Hall & John

Oates: Change Of Season (Arista) 00543 David Lee Roth: A Little Ain't Enough (Warner Bros.) 10551

Black Box: Dreamland (RCA) 84063

Prince: Graffiti Bridge (Paisley Park) 3410

Def Leopard: Pyromania (Mercury) 70402

George Benson/Count Basie Orchestra: Big Boss Band (Warner Bros.) 13519

Quincy Jones: Back On The Blo (Warner Bros.) 64116 Deee-Lite: World Clique

(Elektra) 52050 Neil Young: Ragged Glory (Reprise) 3462

Kentucky Headhunters: Pickin' On Nashville

(Mercury) 24740 Anita Baker: Compositions (Elektra) 00921

Don Henley: The End Of The Innocence (Geffen) 01064 Chick Corea Akoustic

Band: Allve (GRP) 10721 Bob Marley: Legend (Island) 53521

Gershwin, Overtures/ McGlinn (Angel) 70391

The Bonnie Raitt Collection (Warner Bros.) 00569

Suzanne Cianl: Pianissimo (Private Music) 11047 \*

Technotronic: Pump Up The Jam-The Album (SBK) 34781

Hank Williams, Jr.: America (The Way I See It) (Warner Bros.) 20612

Van Halen (Warner Bros.) 14620

The Cars: Greatest Hits (Elektra) 53702

Metallica: ... And Justice For All (Elektra) 00478 Jeff Lynne: Armchair Theatre (Reprise) 00803 Dirty Dancing/ Original Soundtrack (RCA) 82522

Pat Benatar: Best Shots (Chrysalls) 44319 ZZ Top: Afterburner (Warner Bros.) 6404 64042

Skid Row (Atlantic) 01038

22 Top: Recycler (Warner Bros.) 73969 **Rick Astley: Free** (RCA) 53656 Bell Blv DeVoe: Polson (MCA) 00547

Jane's Addiction: **Ritual de lo Habitual** (Warner Bros.) 10020 Aerosmith: Pump (Geffen) 63678 Reba McEntire: Rumor Has It (MCA) 44609

Tonyl Tonil Tonel: The Revival (Polydor) 00565 Best Of Robert Palmer: ddictions pland) 10019

Damn Yankees (Warner Bros.) 14852 Keith Sweat: I'll Give All Love To You Utra 51603 To You

Too Short: Short Dog's In The Hou

54304 Greatest Gongel Hits (Malaco) 44355

Edie Britell: Ghost Of A Dog Geffen) 73923

Eric Clapton: Journeyman (Warner Bros.) 53940

Carly Simon: Have You Seen Me Lately? (Arista) 20912 The Glenn Miller

Orchestra: In The Digital Mood (GRP) 43293

James Taylor: Greatest Hits (Reprise) 23790 Raffl : Evergreen \_\_\_\_\_ Everblue (MCA) 10492

Lionel Richie: The Composer (Motown) 24700

Richard Marx: Repeat Offender (EMI) 01118

Solti: Tchalkovsky, 1812 Overture (London) 25179 \*

Clint Black: Killin' Time (RCA) 01112

En Vogue: Born To Sing (Atlantic) 14187 Paula Abdul: Shut Up And Dance (The Dance Mixes) (Virgin) 80326

Sinead O'Connor: Do Not Want What

Haven't Got (Chrysalis) 33512 Talking Heads: Stop Making Sense (Sire) 24560

The Police: Every Breath You Take—The Singles (A&M) 73924

Lisa Stansfield: Affection (Arista) 34198 The Robert Cray Band: Midnight Stroli (Mercury) 73659

America: History (Greatest Hits) (Warner Bros.) 23757

Peter Gabriel: Shaking The Tree-16 Golden Greats (Geffen) 11089 M.C. Hammer Please Hammer, Don't Hurt Em (Capitol) 34791 Kathy Mattea: A Collection Of Hits (Mercury) 10791 Yanni: Reflections Of Passion (Private Music) 24223 Nelson: After The Rain (DGC) 74079 Mötley Crüe: Dr. Feelgood (Elektra) 33928 Electwood Mac Behind The Mask (Warner Bros.) 43766 Pretty Woman/ Soundtrack (EMI) 34631 AC/DC: Back In Black (Atlantic) 13772 corpions: Crary World Mercury) 14795 Paul Simon: Gracelan (Warner Bros.) 72315

U2: Rattle And Hum (Island) 00596 Grateful Dead: Built To Last (Arista) 72230 Patsy Cline: 12 Greatast Hits (MCA) 53849 Gipsy Kings: Allegria (Elektra) 11178 Vince Gill:

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Big Daddy Kane: A Taste Of Chocolate (Cold Chillin") 01095

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King's X; Faith, Hope

Spyro Gyra: Fast Forward (GRP) 00829

Garth Brooks: No Fences (Capitol) 73266 AC/DC-The Razors Edge (Atlantic) 33379 Roger McGulnn: Back From Rio (Arista) 81997

Poison: Flesh & Blood (Capitoj) 50207 Debbie Gibson: Anything is Possible (Atlantic) 24815 Extreme: Pornograffitti (A&M) 43557 Faith No More: The Real Thing (Reprise) \$3715 Catching Up With Depecte Mode (Sire) 00560 Kenny G: Live (Arista) 64505

Randy Travis: Heroes And Friends (Warner Bros.) 74597 Heart: Brigade (Capitol) 64305 Bon Jovi: New Jersey (Mercury) 00516 Blg Band Bash npose) 10458 Twin Peaks/TV Soundtrack (Warner Bros.) 53540 Anne Murray: Greatest Hits (Capitol) 63530 Jeffrey Osborne: Only Human (Arista) 00545

Vanilia ice: To The Extreme (SBK) 24689 Chicago : Twenty 1 (Reprise) 10533 Billy Idol: Charmed Life (Chrysalis) 62264 Peter Gabriel: So Geffen) 14764 Johnny Gill (Motown) 00738 Tom Petty: Full Moon Fever (MCA) 33911 Megadeth: Rust In Peace (Capitol) 1\* 9053 Monie Love: Down To Earth (Reprise) 44752 Earth (Reprise) Tesla The Great Radio Controversy (Goffen) 00839 Alabama: Pass It O own (RCA) 00531 Tears For Fears: The Seeds Of Love (Fontana) 33653 Paul Simon: Graceland (Warner Bros.) 72315 The B-52's: Cosmic Thing (Reprise) 14742

Guns N' Roses: Appetite For Destruc-tion (Geffen) 70348 Take 6: So Much 2 Say (Reprise) 53580 Alannah Myles (Atlantic) 30045 The Cure: Klss Me, Kiss Me, Kiss Me (Elektra) 42404

Bulletboys: Freakshow (Warner Bros.) 34757 Carreras, Domingo, Pavarotti: 3 Tenors (London) 35078 Depeche Mode: Violator (Sire) 73408 Scorpions: Crazy World (Mercury) 14795 U2: Rattle And Hum (Island) 00596 Traveling Wilburys, Vol. 1 (Warner Bros.) 00711 Bobby Brown: Dancel ... Ya Know It (MCA) 73660

Charlie Parker: Verve) 01044

Dwight Yoakam: If There Was A Way (Reprise) 64310 Bruce Hornsby & The Range: A Night On The Town (RCA) 63689 Boogle Down Productions: Live Hardcore Worldwide (Jive) 44584 Lita Ford: Stiletto (RCA) 638 Jasmine Guy (Warner Bros.) 54384 Lita Ford: Lita (RCA) 24793

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With both channels driving 8-ohm loads at 1,000 Hz, the main amplifiers clipped at 134 watts output, corresponding to a clipping-headroom rating of 2.2 dB. The dynamic output into 8 ohms was 156 watts, corresponding to a dynamic headroom of 3 dB, and increased to 242 watts into 4 ohms. With a 2-ohm load, the amplifier's protective system shut it down on the 20-millisecond tone bursts of this test. Harmonic distortion at 80 watts (8 ohms) was 0.015 percent over most of the audio range, with a maximum reading of 0.025 percent at 20,000 Hz.

Frequency response of the main channels was +0, -0.5 dB from 20 to 20,000 Hz. The Bass Extension circuit increased the output below 200 Hz to a maximum of +5.5 dB at 70 Hz, with a steep (15-dB-per-octave) cutoff below that frequency. The bass tone control operated below 400 Hz, producing a maximum boost or cut of 10 or 11 dB at 20 Hz. The treble-control curves were hinged at 3,000 Hz, with a maximum range of  $\pm 11$  or 12 dB at 20,000 Hz.

The RIAA phono-equalization error was a maximum of +0.3 dB at 32 Hz and -0.8 dB at 20,000 Hz. Phono-input impedance was 48,000 ohms in parallel with a 230-picofarad (pF) capacitance. The phono input overloaded at 1,000-Hz-equivalent levels of 113 to 148 millivolts (mV) between 20 and 20,000 Hz.

Sensitivity, for a 1-watt output into 8 ohms, was 20.5 mV through the CD input and 0.22 mV through the phono input. The respective A-weighted noise levels were -81 and -77.5 dB, referred to a 1-watt output.

#### Comments

Considering only its basic amplifier functions, the DSP-A1000 is an exceptionally full-featured, versatile component that performs very well in respect to output power, distortion, and noise. Its most important functions, however, involve its DSP capability. Its digital memories contain the data needed to re-create the sound-field characteristics of twelve basic acoustic environments. Since eleven of these selections provide a pair of options, the user has a choice of twentythree preprogrammed acoustic environments at the touch of a button. One of the options, for example, puts the listener either in a fairly live concert hall or on the stage, surrounded by the

orchestra. Similar options are offered for the Concert Video, TV Theater, and Movie Theater Environments. The instruction manual, which is thorough and easy to follow, includes descriptions of the various simulated sound fields, including such information as the size and acoustic treatment of the particular concert hall, disco, etc., that each one is based on.

Most of the preprogrammed environments can be modified by the user to suit his taste. Typical variable parameters are the initial delay time, the size and liveness of the room, and the upper frequency limit of the effects channels. The basic Dolby Pro Logic surround mode's standard 20-millisecond (ms) delay is adjustable to as much as 30 ms in steps of 1 ms. The optional Enhanced Pro Logic mode increases apparent sound-field width and adds room-size and room-liveness adjustments.

We used the Yamaha DSP-A1000 for a limited time in a home theater installation that utilized all seven channels of audio, with a videodisc player as the program source. Over a more extended period, we used it in a six-channel system with audio program sources only.

The subjective results were, to put it succinctly, superb. Every sound-field enhancement system that has been introduced, from the earliest, relatively simple rear-channel delay systems to the DSP-A1000, has required care in speaker placement and setup adjustments to obtain the best results. With the DSP-A1000, however, we obtained a reasonably believable simulation of the nominal acoustic environments without undue difficulty.

That does not necessarily mean that you can use it to re-create *any* programmed concert hall in your living room. The audio art has a considerable way to go before that will be possible. But you *can* add a considerable degree of realism to most recorded program material with the DSP-A1000. The sophistication of its DSP circuits reflects the current state of the art in consumer products, and it is very good indeed.

With video material, and especially if the speakers are well chosen and located, the DSP-A1000 can provide the sort of surround involvement you'd expect from a good movie-theater installation. And its all-in-one design makes that result possible without the complication of connecting and installing several components and adjusting them to make their levels compatible. The Yamaha DSP-A1000 does it all in one manageable unit at a price comparable to that of the first generation of digital signal processors. A very impressive piece of equipment.



".... and it's also bulletproof."



### Harman Kardon TD4600 Cassette Deck

Craig Stark, Hirsch-Houck Laboratories

HE Harman Kardon TD4600 is one of the first cassette decks to incorporate the highly sophisticated new Dolby S noise-reduction system in addition to the more familiar Dolby B and Dolby C systems and Dolby HX Pro headroom extension. Other features include memory rewind and replay, intro scan, and remote control.

Since the Dolby S circuitry has not vet been reduced to a single VLSI (very large-scale integrated-circuit) chip, its inclusion imposes a significant premium in manufacturing cost. The Dolby electronics in the TD4600 occupies its own 91/2 x 71/4-inch circuit board, which holds no fewer than six large IC chips and a myriad of resistors and capacitors. Harman Kardon has compensated by economizing elsewhere in the \$699 TD4800, using a combination record/play head instead of the separate recording and playback heads typical of most other decks in this price class and a single-capstan tape transport rather than a dual-capstan one. (These high-end features are included in the company's other Dolby S deck, the TD4800, but together with duplicate Dolby circuitry for off-the-tape monitoring during recording, they drive up the price to about \$500 above that of the TD4600.)

The TD4600's cassette well contains sensors that detect the tape type in use and automatically set the bias and equalization for average ferric, chrome (or chrome-equivalent), or metal tapes. The well cover is easily removable for routine head cleaning. A four-digit fluorescent tape counter indicates elapsed time only (not time remaining) in fast-wind as well as record and play modes.

Recording levels are indicated on a twelve-segment-per-channel fluorescent display that is calibrated from -35 to +8 dB. Sensibly, the 0-dB marking coincides with the double-D logo signifying Dolby level. The display is supplemented with a METER WEIGHTING switch designed to simplify setting recording levels by providing a "target" of +3 dB for the loudest passages, compensated according to the tape type and the high-frequency content of the music.

Recorders equipped with Dolby S must, as a license condition, provide user-adjustable bias and tape-sensitivity controls to accommodate the normal variations of tape formulations within the same type. Such calibrations are relatively straightforward on a three-head deck, since you can monitor the output off the tape as you make the adjustments. On a two-head machine, such as the TD4600, the procedure is more complicated. Repeated record-and-replay trials, using two pushbutton tone generators and the level display, are needed to set the bias and the left- and right-channel tapesensitivity controls for optimum performance. Fortunately, the center-detented positions of these controls proved adequate for the center-line TDK AD (ferric), SA (chrome-equivalent), and MA (metal) cassettes we normally use for testing.

A conveniently large knob with separate clutched sections for the left and right channels is used to set recording levels. A smaller knob simultaneously controls the output level at the frontpanel headphone jacks and at the rear terminals. A switchable multiplex filter is included for use (if needed) when recording stereo FM broadcasts. No provision is made, however, for timercontrolled operation.

The Harman Kardon TD4600 measures 173% inches wide, 5 inches high, and 125% inches deep, and it weighs 14½ pounds. Price: \$699. Harman Kardon, Dept. SR, 8830 Balboa Blvd., Northridge, CA 91325.

#### Lab Tests

The TD4600's calibrated playback response, measured with our BASF

# The first CD Carousel with Denon sound quality.



The sound quality and performance features that have made Denon Single-play CD players widely regarded as the best sounding have now been incorporated in Denon's first Carousel CD player.

The 5-disc DCM-350 features the same 8X oversampling, 20-bit digital filter and dual Super Linear Converters found in Denon's top-rated models. Denon's dedication to performance means that each Super Linear Converter is hand-tuned for lowest noise and best linearity. This advanced digital signal processing and conversion system fully resolves musical detail and accurately reproduces all the liveliness and air of the original recording.

In multi-disc players, the transport is an important key to performance. The superior transport technology which has made Denon famous in both CD and turntable categories is found in the DCM-350. Its integrated laser transport and disc carousel not only provides outstanding acoustic and mechanical isolation, it also allows uninterrupted play while two of the five discs are changed.

If the essence of a CD changer is convenience, the DCM-350 covers this base in spades. It offers a 32 track memory plus programmable, disc sequential and full random play modes; all terrific features in a multi-disc machine. Plus, there is a full-function remote control with direct track selection from the remote's keypad. Recognizing that the DCM-350 will find its way into many of the most sophisticated systems, Denon has even provided a coaxial digital output.

Carousel CD changers have been out for a while now. But the DCM-350 is the first to carry the Denon name. Which again proves Denon's belief that being best is more important than being first.

DENON The first name in digital audio.



Denon America Inc., 222 New Road, Parsippany, NJ 07054 (201) 575-7810

#### FEATURES

- Dolby S, Dolby C, and Dolby B noise reduction
- Dolby HX Pro headroom extension
- User-adjustable bias and sensitivity
- Four-digit fluorescent elapsed-time tane counter

Fast-forward time (C-60): 86 seconds

Rewind time (C-60): 83 seconds

Speed error: +0.3%

Dolby tracking error: Dolby B,  $+1.2, -0.9 \, dB;$  Dolby C,  $\pm 0.7 \, dB;$ Dolby S,  $\pm 0.6$  dB

Wow-and-flutter: 0.035% wrms, 0.075% peak-weighted

Line input for indicated 0 dB: 54 mV

Line output at indicated 0 dB: 1.31 volts

Meter indication at IEC-standard 0 dB: +1 dB

#### • Tape: TDK AD (Type I, ferric)

IEC 0-dB distortion: 0.82%

Meter indication at 3% THD + noise: +5 dB

Signal-to-noise ratios (in decibels):				
	Unwtd.	A-wtd.	CCIR/ARM	
NR off	54.3	59.3	<b>56</b> .1	
Dolby B	60.4	68.5	66.6	
Dolby C	62.7	74.7	76.0	
Dolby S	63.0	75.4	77.2	

- Twelve-segment-per-channel peaklevel indicators
- Memory rewind and replay
- Intro-scan
- Switchable FM-mulitplex filter
- Infrared remote control

### LABOBATORY MEASUREMENTS

• Tape: TDK SA (Type II, chromeequivalent)

IEC O-dB distortion: 1.7%

Meter indication at 3% THD + noise: +3 dB

Signal	-to-noise	ratios	(in	decibels):
			-	

	Unwtd.	A-wtd.	CCIR/ARM
NR off	55.4	61.9	59.5
Dolby B	58.2	69.8	69.7
Dolby C	61.2	76.7	78.2
Dolby S	63.9	77.2	79.1

#### • Tape: TDK MA (Type IV, metal)

IEC 0-dB distortion: 1.4%

Meter indication at 3% THD + noise: +3 dB

	Unwtd.	A-wid.	CCIR/ARM
NR off	57.1	61.9	59.0
Dolby B	60.7	70.5	69.4
Dolby C	63.6	78.2	78.4
Dolby S	65.9	78.4	79.3



IEC-standard 120-microsecond (ferric) and 70-microsecond (chrome) test tapes, was excellent from the bass through the low treble, with a slight rolloff at the very highest frequencies (probably because of the gap losses characteristic of most combination record/play heads).

Record-playback response at the customary -20-dB input level held within 2 dB up through 16,000 Hz with the ferric and chrome-type tapes and to 18,000 Hz with the metal tape. At 0dB recording level, the Dolby HX Pro circuitry helped maintain the high-frequency response of all three formulations. Because Dolby S, like Dolby C, reduces the recording equalization's treble boost when the signal contains high-level high frequencies, it also extends the effective treble capacity of the tape, as is shown in the additional trace for TDK MA in the accompanying graph.

Midrange total harmonic distortion (THD) reached 3 percent at an indicated level of +5 dB for the ferric and metal tapes and at +3 dB for the chrome-type formulation. Referred to these levels, the figures for signal-tonoise ratio (S/N) given in the box at left are very good, though not outstanding. You may find it surprising that the S/N's with Dolby S are not much better than those with Dolby C noise reduction. The reason is that most of the additional noise reduction Dolby S provides is at low frequencies, which the standard weighting curves tend to de-emphasize. The audible benefits of Dolby S are greater than a simple comparison with the Dolby C numbers might suggest.

Measured with our usual flutter test tapes, the TD4600 registered 0.035 percent weighted rms (wrms) and 0.075 peak-weighted. On an overall record-playback basis, wow-and-flutter rose to 0.042 percent wrms and 0.110 percent peak-weighted. Although these figures are within specification for the TD4600, they are somewhat above average for a deck in this price class. Along with the relatively slow fast-winding times, they undoubtedly reflect the limitations of the single-capstan transport mechanism used to keep the TD4600's price within bounds.

Input sensitivity was normal, and the available output was higher than most of today's decks can achieve,

which is welcome news to everyone who has a CD player in his system. Dolby tracking error was remarkably low, measuring only  $\pm 1.2$ , -0.9 dB for Dolby B,  $\pm 0.7$  dB for Dolby C, and  $\pm 0.6$  dB for Dolby S.

#### Comments

Overall, the TD4600 was quite easy to use. The only significant exception was the rather complex procedure required for optimizing bias and sensitivity, but that is inevitable in a twohead deck. The rounded switch buttons were a pleasure, and the solenoid action of the transport had a positive feel. The deck did make somewhat more noise than most when switching modes or fast winding, and the dark color of the plastic covering the unilluminated cassette well makes it impossible to see the tape inside, but these are minor points.

We found the TD4600 pleasant to listen to, with wide frequency response and low noise on both prerecorded and homemade tapes. The stepwise decreases in hiss as we switched from no noise reduction to Dolby B to Dolby C were, as usual, obvious, and going on to Dolby S eliminated some of the low-frequency "garbage" that often passes unnoticed until it is magically stripped away. With normal listening materials and levels, however, the improvement when we shifted between tapes recorded with Dolby C and Dolby S, though worthwhile, was not startling. The tapes using both systems had good frequency response and adequate, if slightly narrowed, stereo imaging. Neither, however, had quite the ringing purity of tone (in solo-piano notes, for example) of the original compact disc.

On the other hand, Dolby Labs says that S-type noise reduction is more robust than C-type-less finicky about deck alignment (always something of a sore point with Dolby C) and therefore more transportable and better suited to mass duplication of prerecorded cassettes. And its performance is unequivocally superior to that of Dolby B. Without question, if the analog cassette has a long-term future in the high-fidelity world, Dolby S is a key to its continuing success, and if you want to hear it for yourself you should surely give the Harman Kardon TD4600 a listen.



### Energy Model 4.1e Loudspeaker System

Julian Hirsch, Hirsch-Houck Laboratories

HE Energy "e" series loudspeakers, designed and built in Canada, employ technologically advanced materials and construction techniques. Typical of these speakers is the Model 4.1e, a moderate-

size, two-way system with an 8-inch woofer and a 1-inch soft-dome tweeter in a ported cabinet.

The internally braced enclosure is available finished in walnut or blackash vinyl veneer. The front baffle, in what Energy calls a Spherex design, is molded of a highly rigid, nonresonant composite material in a shape that is said to improve dispersion and minimize diffraction, which can affect stereo imaging.

The tweeter is at the top, and the woofer is approximately in the center of the panel, above the bass port. The woofer uses Energy's Quadcentric design, with a ribbed plastic cone and a rubber rim surround to help terminate

signals propagating within the diaphragm and thereby improve midrange detail and dispersion.

On the rear of the cabinet are separate multiway binding-post terminals for the tweeter and woofer, normally connected by jumper straps. With the straps removed, the system can be biwired (with separate cables connecting the two drivers to the same amplifier) or biamplified (with separate amplifiers for each driver). Since the speaker's crossover network is always in the circuit, no external electronic crossover is needed.

The cabinet measures 24 inches high, 12 inches deep (including the grille), and 9% inches wide. It is finished on all surfaces, including the back. The black cloth grille unsnaps easily, and the silver-gray finish of the Spherex baffle makes it aesthetically feasible to use the speaker without its grille.

The installation instructions for the Energy Model 4.1e recommend that the speakers be placed on stands that bring the tweeters to ear level, with the cabinets at least 15 inches from the wall behind them, equidistant from the side walls, and 6 to 10 feet apart.

Energy recommends using the Model 4.1e with an amplifier rated between 40 and 150 watts per channel. The speaker's nominal impedance is 6 ohms. Price: \$750 a pair (\$850 a pair in Canada). Energy Loudspeakers, Dept. SR, 3641 McNicoll Ave., Scarborough, Ontario M1X 1G5.

#### Lab Tests

Our test speakers were furnished with a pair of API SST-13 stands (API is Energy's parent company), which are suggested by Energy for use with the Model 4.1e. The stands, made of heavy steel and spiked, put the speakers about 13 inches from the floor. We placed the stands about 30 inches from the wall behind them and 8 feet apart.

Combining the averaged room response of the two speakers with the close-miked woofer response produced a composite frequency response within  $\pm 2.5$  dB from 1,000 to 20,000 Hz. The combined port and woofer-cone response was within  $\pm 3$ dB from 30 to 1,000 Hz, and when we joined this curve with the room-response curve, the result was a composite frequency response of  $\pm 5.5$  dB from 20 to 20,000 Hz. A moderate dip of about 3 dB at about 2,000 Hz was virtually the only clue to the crossover between drivers at 2,100 Hz.

Our quasi-anechoic FFT frequencyresponse measurements confirmed the essential features of the roomresponse measurement and showed that the tweeter's horizontal dispersion was very good up to 10,000 Hz, with typical differences of 3 dB or so between measurements made on-axis and 45 degrees off-axis. At higher frequencies the two curves diverged rapidly, which is typical of 1-inch dome tweeters.

The system's group delay varied less than  $\pm 0.1$  millisecond over most of the tweeter's operating range. There was a distinct jog of about 0.2 millisecond at 2,000 Hz, and the delay change down to about 350 Hz was less than 0.7 millisecond, very good performance for a woofer.

The Energy 4. le's sensitivity was 89 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts of pink noise. We measured the woofer distortion with an input of 3.2 volts, corresponding to a 90-dB SPL reference output. The total harmonic distortion plus noise in the woofer cone's output was about 0.8 percent from 600 to 100 Hz, climbing gently to 2 percent at 60 Hz (the effective acoustic crossover to the port output). The port distortion reached 3.2 percent at 40 Hz and was only 7 percent in the 25 to 30 Hz range. In the pulse power-handling test, the woofer cone bottomed with

an input of 230 watts at 100 Hz into its 4.4-ohm impedance at that frequency.

The system's minimum impedance was 4 ohms at 140 Hz. The upper-bass resonance was at 60 Hz, with a 15-ohm impedance peak, and the maximum impedance was 19 ohms at 1,800 Hz. The lower resonance appeared to be just below 20 Hz. The impedance phase angle remained within  $\pm$  35 degrees, with several sharp jogs visible between 20 and 120 Hz. We would not expect any good amplifier to have trouble driving the Model 4.1e.

#### Comments

The Energy 4.1e had a smooth, slightly warm sound character. It projected a distinct stereo image, with accurate lateral positioning and a good sense of height, although there was little apparent depth dimension. Its bass performance was perhaps its clearest difference from most speakers of its size and basic type: It can deliver a useful amount of low-distortion output in the 35- to 40-Hz range.

Although there are a number of speakers with finished front panels that can be used without their grilles, most of them present a somewhat raw appearance in that condition. The unique front panel of the Energy 4. Ie actually looks as though it were meant to be seen, and the speaker looks good either way. It also sounds good, with a pleasing balance and stereo presentation that make it a strong contender among speakers of its size and price.



"Roy, the cat jumped in the car and clawed your speaker grilles to shreds."


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# TEST REPORTS



# **MAS DCC-1 Digital Control Center**

## Julian Hirsch, Hirsch-Houck Laboratories

HE High Technology Group components from Music and Sound Imports (MAS) are designed to provide state-of-the-art performance in audio and video home applications. The MAS DCC-1 Digital Control Center, designed and built in the U.S., combines the switching and control functions of a highquality A/V preamplifier with built-in digital-to-analog converters, enabling it to handle either digital or analog signal sources.

The DCC-1 provides front-panel selection of seven high-level analog audio inputs and three digital inputs. It also has composite and S-video input and output connectors for two video sources as well as composite and Svideo monitor outputs. There is no phono input. The six analog outputs are identified as TAPE OUT 1 and 2, VCR OUT 1 and 2, and MAIN OUT 1 and 2 (volume-controlled signals from the preamplifier section of the DCC-1 to drive power amplifiers).

The DCC-1 contains two 18-bit, eight-times-oversampling D/A converters, which are designed for easy upgrading with future converter circuits. It has three digital audio inputs: one coaxial, one optical, and the third switchable for either a coaxial or optical source. Two digital outputs supply signals to a DAT deck or other digital recorder or processor.

Separate but identical ten-position knobs handle source selection for listening and recording. When a digital source is used, a vertical column of five red indicator lights at the left of the panel shows the sampling rate of the source (32, 44.1, or 48 kHz), a LOCKED indication when the signal is error-free, and EMPHASIS if the program was recorded with pre-emphasis. The only other front-panel controls are two knobs, for balance and level (volume) adjustment, and three toggle switches, which insert an external processor (such as an equalizer) into the signal path, bypass or insert a

line amplifier for higher gain, and mute the output signal. A remote control for volume, balance, and muting is available as an option.

The DCC-1's rear apron is well filled with forty gold-plated phono-jack input and output connectors, five Svideo input and output sockets (one is for the monitor output), and two optical digital input connectors. There is a power connector for the external power supply, which provides filtered DC power to the circuits. Since the DCC-1 is designed to operate continuously, it has no power switch; the power supply must be unplugged from the AC outlet to shut it off. A large, highly visible window in the center of the front panel displays the model name in red letters when the unit is powered.

The black-finished MAS DCC-1 measures 16 inches wide, 8 inches deep, and 2 inches high, and it weighs 11 pounds. Its power supply is about 2 x 21/2 x 3 inches, with 6-foot AC-input and DC-output cables. Price: \$1,195; remote control, \$150. Music and Sound Imports, Dept. SR, 450B Pike Rd., Huntingdon Valley, PA 19006.

### Lab Tests

We measured the analog portions of the DCC-1 in the conventional manner, from the AUX 1 inputs to the MAIN 1 outputs. Input sensitivity (at the maxi-

# TEST REPORTS

mum level setting) was 0.5 volt for a reference output of 0.5 volt with the line amplifier bypassed. With the line amplifier in use, the sensitivity was 165 millivolts (mV), indicating a gain of 3.0. In both cases, the output clipped at a very high 11.5 volts. When the line amp was bypassed, the output impedance was 300 ohms; when it was in use, the impedance dropped to 100 ohms. The A-weighted signal-to-noise ratio (S/N) was 88.5 dB referred to a 0.5-volt level.

Frequency response (without the line amplifier) was an impressive 20 to 20,000 Hz  $\pm 0.01$  dB. Total harmonic distortion plus noise (THD + N) was about 0.0005 percent at 9 volts output, just below the clipping level. Through the line amplifier, the frequency response was the same and the distortion rose to a mere 0.001 percent at 9 volts output.

Channel separation varied from 80 dB at low frequencies to 50 dB at 1,000 Hz and 30 dB at 20,000 Hz. The interchannel crosstalk was clearly the result of stray capacitance between the signal wiring of the two channels, and the separation improved by about 17 dB when the undriven channel input was shorted.

To evaluate the performance of the DCC-1's digital circuitry, we drove its DIG 3 input (coaxial) from the digital output of a Denon DCD-1500 II CD player and measured the preamplifier's output with the line amplifier by-passed. We made a number of standard CD measurements, first from the player itself and then with its own D/A converters replaced by the DCC-1's D/A converters. The measurements included frequency response, de-emphasis error, low-level linearity, and channel separation.

The response of the source CD player was +0.15, -0.1 dB from 10 to 20,000 Hz. The response through the DCC-1's converters was almost perfectly flat from 10 to 2,000 Hz but fell off at higher frequencies to -0.4 dB at 10,000 Hz and -1.3 dB at 20,000 Hz. De-emphasis error from 1,000 to 16,000 Hz was less than 0.3 dB in the source output and about 1 dB from the DCC-1. Most of the error occurred at the highest frequency, as it did in the response measurements without deemphasis.

Linearity error at a - 80-dB level was approximately 1 dB for both units.

At -90 dB, the error in the right channel was about 7 dB from the source and about 3.5 dB from the DCC-1; the error in the left channel was less than 1 dB for both the player and the DCC-1.

Channel-separation measurements for the source and the DCC-1 were quite different, though not to such a degree as to be audibly significant. The separation between the source outputs was about 120 dB up to 1,000 Hz, decreasing to 90 dB at 20,000 Hz. From the DCC-1's outputs, the readings were 90 dB at 100 Hz, 70 dB at 1,000 Hz, and 46 dB at 20,000 Hz. The straight-line increase in crosstalk, like that through the analog inputs, was indicative of capacitive coupling between the channels.

### **Comments**

Despite its external simplicity, the MAS DCC-1 is an extraordinarily versatile component whose design recognizes and attempts to deal with the three-way synergy between audio, video, and digital technology. Clearly no mere reworking of a standard audio component, it boldly assigns the vinyl record to history (although one could easily feed one of its inputs from an external phono preamplifier).

To illustrate the potential versatility of the DCC-1, a system-connection diagram in its instruction manual shows it connected to two standard VCR's, two S-VHS VCR's, three monitors, two audio power amplifiers, a graphic equalizer, two analog tape decks, two DAT decks, a CD/videodisc player, and a tuner. Just to interconnect and control such an array of components is no small feat.

As our measurements show, the DCC-1's analog performance was outstanding. Its frequency response, by far the flattest we have yet measured, taxed the measurement capabilities of our Audio Precision System One test

## FEATURES

- Seven high-level analog inputs
- Three digital inputs (optical, coaxial, and switchable)
- Video switching for two VCR's, including S-video capability
- Composite and S-video monitor outputs
- Separate listening and recording source selectors
- Switchable external-processor loop

### Bypassable line amplifier

- Selectable balanced and unbalanced outputs
- Eighteen-bit, eight-timesoversampling D/A converters with upgradable plug-in chips
- External power supply
- Optional remote control for volume, balance, muting

# LABORATORY MEASUREMENTS

### Output level at clipping: 11.5 volts

Sensitivity for a 0.5-volt output: line amp bypassed, 500 mV; line amp on, 165 mV

A-weighted noise (referred to a 0.5volt output): - 88.5 dB

**1,000-Hz distortion** (THD + N): line amp bypassed, 0.002% at 1 volt, 0.0005% at 9 volts; line amp active, 0.006% at 1 volt, 0.001% at 9 volts

Frequency response: analog, 20 to 20,000 Hz  $\pm 0.01$  dB; digital, 10 to 20,000 Hz  $\pm 0$ , -1.3 dB

**Channel separation:** analog (line amp bypassed), 80 dB at 20 Hz, 51 dB at 1,000 Hz, 30 dB at 20,000 Hz; digital, 90 dB at 100 Hz, 70 dB at 1,000 Hz, 46 dB at 20,000 Hz

**De-emphasis error** (digital): 1 dB at 16,000 Hz

Linearity error: at -80 dB, 1 dB in both channels; at -90 dB, 3.5 dB in right channel, less than 1 dB in left channel

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# TEST REPORTS

unit, as did its harmonic distortion. The noise level, if not the lowest we have measured, was certainly inaudible under any imaginable listening conditions. Together with its exceptionally high output-voltage capability, these results speak eloquently of the DCC-1's quality and potential.

Its digital circuits—D/A converters and filters—had low-level linearity and distortion characteristics like those of good CD players of a year or two ago, before the advent of 1-bit converter technology. The linearity of the DCC-1's converters was very good down to a -80-dB level and only slightly worse at -90 dB. Although their performance has been surpassed by recent 1-bit converters, there is unlikely to be any audible distortion attributable to these circuits.

It was surprising to find the highfrequency drop in the DCC-1's response with a digital input signal. Although the effect is unlikely to be noticed in normal use, it probably could be detected by a very critical listener. It is hard to justify this lapse when even the least expensive CD players have far flatter response characteristics.

Another anomaly, common to both the analog and digital signal paths, was the crosstalk between stereo channels. Although it will almost certainly be inaudible in listening to normal stereo sources (stereo recordings rarely have even this much separation to start with), it seems slightly out of character for a component of the DCC-l's price and overall quality. Our best guess is that the high-frequency crosstalk is associated with the bank of relays (and associated printed circuit paths) that are used for signal switching.

The bottom line on the MAS DCC-1 is that it could be a useful, perhaps even indispensable, part of a modern deluxe A/V entertainment system. Except possibly for the slight treble rolloff, none of its measurable flaws should have any effect on its audible performance (most would be difficult to detect at all without advanced instruments like the Audio Precision System One). As digital recorders come into common use, the DCC-1's digital-to-digital dubbing features will be appreciated by many users, and the same goes for the convenience of its video-switching capabilities. 



# Sennheiser HD 490 Headphones

Julian Hirsch, Hirsch-Houck Laboratories

HE new Sennheiser HD 490 stereo headphone was developed for use both with home hi-fi components and with Walkman-type portable CD or tape players and radios, which have traditionally been paired with distinctly different kinds of phones.

Headphones intended for use with home high-fidelity systems normally have a moderately high impedance, from 200 to 600 ohms. Such impedance presents no problems with the driving voltage available from any home audio source, such as a tape deck, CD player, or receiver. The signal levels available at these components' headphone jacks are usually at least several volts, sufficient to develop a high sound-pressure level (SPL) in the listener's ears.

Typically, home hi-fi headphones attempt to provide wide frequency response and low distortion, consistent with the quality of their signal sources. Obviously, they should also be comfortable to wear for extended periods. In general, a low price appears to be less important than good sound, as befits a component of a home audio system that may represent a sizable investment. In fact, some very highquality headphones can cost as much as a good pair of loudspeakers.

Another broad category of headphones is intended primarily for use with small personal-portable tape or CD players or radios. Many of their performance characteristics and design criteria are very different from those of home headphones. And. consistent with the cost of their program source, these phones are usually relatively inexpensive.

Perhaps most important for such headphones is the need for high sensitivity-the ability to generate a fairly high sound level with a very small input power. Since the signal voltage available from their usual sources is small, these phones must have a low impedance, typically from 8 to 100 ohms. Wide frequency response and low distortion, which are important in home headphones, are often sacrificed in the design of portable phones. Most are also designed to be as inconspicuous as possible, which is achieved by using small ear cushions that rest lightly on the wearer's ears (sometimes even fitting into the ears) and a slender metal headband.

Sennheiser designed the HD 490 so that it could be used easily with per-

# TEST REPORTS

sonal-portable equipment and yet meet the listening requirements of a reasonably good home system. The German-made phones have normalsize earpieces with replaceable foam cushions. The single-piece plastic headband is cushioned at the top, and the phones are light (135 grams, or about 4 ounces). The 3-meter (about 10-foot) straight cord, which joins the earpieces in a Y-junction, ends in a stereo mini plug. The phones are supplied with a well-made metal adapter that converts the plug to the quarterinch size used in home components.

Like all Sennheiser headphones, the HD 490 is designed for full user replacement of its basic parts, including signal cables, ear cushions, drive elements, and headbands. The company maintains a complete parts inventory for all headphones that it has ever sold in this country.

The HD 490 uses a diaphragm formed with a radial-ridge molding process that is said to minimize diaphragm breakup. It is driven by a three-layer aluminum voice coil in the field of a powerful neodymium-ferrous magnet. The signal cable features conductors of stranded steel, which is claimed to have ten times the strength of copper wire. A signal cable that includes a combination volume/balance control can be substituted for the cable normally shipped with the headphones.

The specifications for the HD 490, like those of most headphones, are sparse. Its rated frequency response of 18 to 25,000 Hz has no stated tolerance, and the sensitivity of 94 dB SPL with less than 1 percent total harmonic distortion plus noise (THD + N) is at an unspecified frequency. The rated impedance is 70 ohms per channel. Price: 129; optional cord with volume/balance control, \$43. Sennheiser Electronic Corp., Dept. SR, 6 Vista Dr., P.O. Box 987, Old Lyme, CT 06371.

### Lab Tests

We measured the performance of the Sennheiser HD 490 headphones on a standard ANSI headphone coupler designed to simulate the acoustic load that the phones would "see" when worn by a human being. The microphone replaces the eardrum in this measurement, which is capable of giving a repeatable and reasonably meaningful quantification of the bass and midrange response of a headphone. Above several kilohertz, however, the response is affected to a major degree by individual ear shape and size or by the characteristics of the coupler. Therefore, the measured "frequency response" of a headphone is not even as meaningful as the measured response of a loudspeaker, though it does serve as a guide to some of the headphone's characteristics.

The HD 490's response was very smooth below 4,000 Hz, varying only  $\pm 1.5$  dB from there down to 100 Hz. The output fell off at lower frequencies to -5 dB at 60 Hz and -10 dB at 41 Hz. Above 4,000 Hz, there was a "hole" in the response, probably caused by the interaction of the headphone itself with the coupler cavity. The output dropped to -10 dB at 5,800 Hz and returned to the midrange level at 7,500 Hz. There was a  $\pm 3$ -dB variation from 7,500 to 14,000 Hz, above which our microphone's response fell off steeply.

The headphone's impedance varied between 61.5 and 70.5 ohms over the range of 20 to 20,000 Hz. The maximum impedance was at 130 Hz, the diaphragm resonance frequency.

### Comments

Except for the 5,000-Hz hole, the Sennheiser HD 490's frequency response was excellent, and even that aberration was not at all unusual in a headphone-coupler measurement. The sound quality of the phones was good, whether used with a home music system or a personal-portable unit. The sound was well balanced and free of any obvious colorations. The available listening volume was much more than adequate, even with our portable cassette player, which could generate a deafening level. It was not surprising, therefore, that a home CD player had no difficulty in driving the phones to high levels.

We compared the sound of the HD 490 with that of a considerably more expensive conventional headphone set. Played at any reasonable level, the HD 490 sounded as clean as the other phones, with slightly less output at high frequencies and possibly in the low bass. Although the high-frequency difference could be heard in an A/B comparison, it was not particularly noticeable when listening to the HD 490 alone.

The most obvious differences occurred at very high playback levels. The HD 490 overloaded more easily than the other phones, which appeared to have larger diaphragms, but at any reasonable listening level there was no evidence of dynamic compression at high levels.

The HD 490 was a comfortable set of phones to wear, with very little pressure on the ears and negligible weight. We would agree with Sennheiser that it is equally suited for use with personal-portable players and with any home system, and that it delivers a sound quality fully consistent with its price.  $\Box$ 



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# LABORATORY TESTS

# Can green ink, disc rings, special fluids, or isolation feet really make your CD's sound better?

OU stop by a friend's house. He is listening to music. You notice that his discs are edged with plastic rings. His CD player is sitting on special rubbery pads. "Do those things really make a difference?" you ask. "Sure," he says. "Listen to how the bass response gets boomy and the highs become hard when I take them away." He removes the feet and the disc rings and replays the music. You are amazed. Just as he suggested, the sound seems boomy and hard. What is going on?

Some aspects of the compact disc system are easy to agree on: the size of the disc, the way music is recorded on it, and so forth. Others are not so universally clear. In particular, some people swear by the system's sonic quality, while others swear at it.

CD tweakers usually fall into the latter category. They may listen to CD's, but they are not convinced of their fidelity; they perceive a need to enhance the sonic results somehow. Unable to redefine the format's standards (not a serious alternative for an individual) or to embark on expensive player modifications, many tweakers rely on simple methods that they believe will improve CD sound quality. They often view surface treatments, disc rings, and vibration isolators as panaceas—universal remedies that help correct the presumed faults of the CD.

More analytical listeners point to the remarkably impressive technical performance delivered by even modestly priced CD players—frequency response flat to within a small

by Ken C. Pohlmann



fraction of a decibel and extremely low noise and distortion-and argue that the system is an essentially transparent medium sonically and in little need of tweaking. Even if a small performance improvement could be achieved, they say, it would probably be inaudible. These audiophiles also tend to be skeptical about the unorthodox remedies proposed by many in the other camp. They argue that techniques such as painting disc edges green and applying wax to a CD's playing surface are only placebos whose perceived benefits spring from the user's imagination.

ONVENTIONAL wisdom would support the analytical listeners. Methods that make no detectable change to the signal emerging from a component are usually suspect. But when it comes to something as subjective as the enjoyment of music, there are many variables, both physical and psychological. Even the placebo effect may play an important role.

Is there a placebo effect at work when some people claim to hear significant audible changes brought on by disc and player treatments that seem incapable of affecting the audio signal? Might listeners be persuaded that the sound has improved even when there has been no change in the acoustical stimuli reaching their ears? After all, the ear may be the organ of hearing, but interpretation and evaluation are the work of the brain. Or can it be that some of the peculiar techniques that have been proposed really work, causing sonic effects that are more than merely psychological?

Answering these questions to everyone's satisfaction is not easy. Debates have raged for years among audiophiles about things like the audible difference between types of speaker wire, with no resolution in sight. But even though we have little hope of putting to rest the controversy over the various CD treatments advocated in some circles, we thought it would be worthwhile to see what effects we could find by purely objective means. If any of them did turn out to have a substantial measurable influence on the audio signal retrieved from a CD, it would give a big boost to the contention that at least some of these nostrums do make an audible difference.

### The Rogues' Gallery

We selected a number of popular treatments, both commercial and homemade, for evaluation. Loosely, the treatments can be divided into three groups: disc-surface treatments. disc-mass treatments, and vibrationisolation player treatments. We tested five disc-surface treatments-two commercial products sold specifically for use on CD's and three others that some people have used even though they are made for completely unrelated purposes. The two commercial products were Finyl, manufactured by Digital Systems and Solutions, Inc., and a prototype fluid called Laserguide supplied by Audioquest. The three other products were Turtle Wax, Armor All, and a green Sharpie pen.

Although the last three products make no claims about sonic efficacy on their packaging (that's not what they're sold for, after all), the first two do. For example, the packaging for Finyl says that the fluid "improves dynamics and transient response, improves bass articulation, improves low-level detail, improves image specificity and depth, improves timbral accuracy, decreases harshness and noise." A paper enclosed with Laserguide claims that it "fills in inherent eccentricities in the surface of the polycarbonate with a material whose index of refraction is close to polycarbonate. . . . listen and enjoy!"

We tested just one disc-mass treatment, Allsop's CD Plus Protective Stabilizers, which are rubbery plastic rings that snap around the edges of compact discs. Allsop says that applying one of these rings "stabilizes [a] rotating CD for maximum sonic performance. . . Improves sound! . . . less vibration allows the CD player's laser to read data with better accuracy, resulting in a truer reproduction of sound for clearer, more natural sounding music."

Finally, we tested two vibration isolators-plastic feet that can be placed under a CD player to isolate it from structure-borne vibrations and to help damp internal vibrations. The packaging on Audioquest's Sorbothane CD Feet states that the product "provides effective damping and isolation for all vibration sensitive equipment. ... a vast improvement can often be heard in tube or solid-state electronicswith preamps, amplifiers, cassette decks, CD players, turntables, VCR's -and [can] even [be] seen with video monitors." The packaging for Allsop Audio Isolators says that they "isolate

all your audio equipment for maximum sonic performance.... cleaner, more natural sounding music.... less distortion at higher volumes.... reducing vibration results in less distortion for tighter bass, clear sound and greater overall sound quality.... CD players read musical data with greater accuracy."

### **The Digital Tests**

The tests designed to evaluate these treatments were twofold, including measurements of both digital and analog data output from a CD player. The player we used was a Philips CD-80, a conservative design with four-timesoversampling digital filters and dual 16-bit digital-to-analog (D/A) converters specially selected for their accuracy. Its single-beam laser pickup is carried by a swing arm mounted on a die-cast frame. The player provides both digital and analog audio outputs and has a list price of \$800.

We connected the coaxial digital output from the CD player to a Digidesign sound processor built around a Motorola 56000 digital signal processing (DSP) chip, which in turn employed a Macintosh II computer as its host. Audio data from the player were captured by the computer and analyzed using the DSP system. This hook-up enabled us to examine the digital audio data after the bit stream left the laser pickup but before it was processed by the player's output D/A conversion circuitry. If a treatment were to affect the reading of data from the disc itself, the analyzer would catch the change.

OR our comparisons, technician Jean Bellefeuille played an untreated disc on the CD-80 and captured a portion of the digital data with the computer. He then treated the same disc, played it on the same machine, and captured the same portion of data. Using a computation method suggested by my fellow University of Miami faculty member John Monforte, Bellefeuille was able to synchronize the two data files exactly and compare them bit by bit. If any bit in a file from a treated disc differed from its corresponding bit in the file from the disc before treatment, the computer would identify it.

The results of these tests are easy to describe. In every case—including all

five disc-surface treatments, the discmass treatment, and the two vibrationisolation player treatments—every bit was the same after the treatment was applied as it was before. In other words, under the test conditions, which were quite normal, none of the eight treatments we tried had any effect on the digital data output from the player.

These results strongly contradict the theories offered in support of several of these treatments and the claims made for them. For example, the theory usually cited to explain the alleged benefits of applying green ink to the periphery of a CD is that stray light inside the disc's polycarbonate substrate can diminish the ability of a player's laser pickup to correctly identify pit edges (and hence the data they represent). The green ink is said to absorb stray light inside the substrate, thereby improving the accuracy of the player's data acquisition. In this test, the data output from the laser pickup was identical for both inked and uninked discs.

Similarly, the theory behind Finyl is that the surface treatment provides "optical impedance an match" between the disc and air. Again, the test shows that the data were unaffected. In general, CD surface treatments are supposed to improve data readout from the disc. We directly compared data readouts with and without treatment and found no difference, and since these treatments cannot affect the sound of a disc unless they alter the data picked up from it by the player, the test results suggest that they are ineffectual.

### Shaking Things Up

In our first series of tests, the discmass and player vibration-isolation treatments also failed to alter the data read from CD's. But further testing is required to evaluate these treatments fully, as they are designed to reduce vibration and presumably would deliver their greatest benefit under conditions less sedate than those of the initial test run.

We therefore repeated the data capture and comparison for these three products, but with the CD player placed directly on top of a JBL Model 4311 professional monitor loudspeaker, which in turn was placed on a carpeted concrete slab. The speaker was driven by a Crown D150A professional power amplifier reproducing an 82-Hz square wave from a function CD surface treatments are supposed to improve digital data readout, but direct comparison before and after application showed no difference. generator. (We chose that particular signal because it generated peak vibration in the CD player.) The sound-pressure level (SPL) 1 meter in front of the loudspeaker (and CD player) was 120 dB. Once again, music data were collected by the DSP system before and after application of each treatment.

In every case, with or without a sound ring or vibrationisolation feet, analysis showed that all the bits in the compared data streams were identical. In other words, these products did not affect the digital data output from the CD player while it was being strongly shaken by an 82-Hz square wave played back at 120 dB SPL. Claims that these products improve data readout are thus not substantiated by this particular test.

Dynamic testing such as this is not a simple matter, however. There are many variables, such as the frequency of vibration, how it is applied to the player, the design of the player, and, especially, the level of vibration. Manufacturers of disc rings and vibrationisolation feet have performed testing of their own to support their claims, often using vibration transducers attached to the laser transport or industrial shaker tables to create very high vibration levels at the pickup. They claim that their disc rings and isolation feet increase immunity to vibration and that this is sonically significant.

There is no question that vibration isolation is useful, if only to prevent outright mistracking. That's why cars have shock absorbers and sneakers have cushions in their soles. When it comes to CD players, there is no absolute standard, only a question of degree, with regard to the effect of vibration on data readout. Although the value of vibration-isolation treatments was not confirmed by our tests, it seems reasonable to believe that isolation feet will decouple a player from a vibration source and permit valid readout at higher vibration levels than without them, as their manufacturers assert. In practice, however, the sound levels at which the isolation becomes useful may be quite high (more than the 120 dB SPL in our tests), and in any case the effect will depend on the mass and design of the player and its placement with respect to the vibration source.

### **The Analog Tests**

So far, we've addressed the effect of these treatments only on the digital

data from a CD, but a player's job isn't done until that bit stream is converted to an ordinary analog signal that can be amplified to drive loudspeakers. In the second phase of our testing, we tried to determine whether the quality of the output analog signal might be affected by high vibration levels and whether the disc-mass or vibration-isolation treatments (or even the disc-surface treatments) would vield any improvement. Manufacturers of the disc-mass and vibration-isolation products claim that they improve analog audio performance at vibration levels just below those at which mistracking occurs.

For this series of tests, we employed an Audio Precision analyzer to measure harmonic and intermodulation (IM) distortion in the player's analog output. In half of the trials, we vibrated the player the same way as in the digital tests, using an 82-Hz square wave at 120 dB SPL. Although we had found no differences in the digital data streams from the disc, we did find differences in the analog audio outputs. For example, without vibration, total harmonic distortion plus noise (THD + N) from an untreated test disc measured 0.0022 percent; with vibration it measured 0.0044 percent. IM distortion similarly increased, from 0.0032 percent to 0.0043 percent. All of these figures represent distortion levels far below the threshold of audibility, but clearly the vibration of the player did change the analog output signal, if only by a very small amount.

This result is not a complete surprise. Although a CD player's audio path is perhaps 90 percent digital, the final 10 percent is analog, and it has long been known that analog components are often subject to what are known as microphonics. That is, electronic devices can sometimes act as transducers, converting mechanical vibration into an electrical signal. Microphonics are a significant problem in vacuum tubes and can also be observed, though to a much lesser degree, in solid-state devices such as capacitors and transistors. As one might expect, the problem is most severe in high-gain circuits, which can considerably boost any vibration-induced signals, amplifying the effect of the microphonics.

In any event, our tests do seem to indicate that microphonics can exist in a CD player's analog output section (the circuitry following its D/A converters), and anything that can reduce vibration in the player should diminish microphonics as well. After our conn the presence of exceptionally strong vibration, isolation feet under the player slightly reduced distortion in the analog output signal.

trol measurements, with no treatment applied, we put a disc ring on our test CD and tried again. The disc ring had no measurable effect on distortion, which increased by the same amount when vibration was applied as it had when the CD was bare. This is exactly what one would expect, since it is not disc vibration that causes microphonics, but vibration of electronic components in the player's analog circuits. Similarly, disc-surface treatments had no effect on the analog signal.

It wasn't until we tried the isolation feet that we got something. When we put the Audioquest or Allsop isolation feet under the player, they helped decouple it from the vibrating speaker, and though distortion still increased slightly in the presence of vibration, the change was smaller than it was without isolation. The decoupling effect was easily verified: Lifting the player an inch above the speaker cabinet completely eliminated the distortion increase. Other decoupling devices, such as crumbled newspapers and foam padding, also reduced the magnitude of the distortion increase.

On the other hand, distortion did not increase under any circumstances until the sound-pressure level exceeded 110 dB, which is *very* loud. A player with less mass or a lower-performance pickup mechanism might be susceptible at lower levels, but since all it took to eliminate the already inaudibly small distortion increases found in our tests was to take the player off the speaker, it's far from clear that any of this matters at all.

### **Listen for Yourself**

The tests we performed were not exhaustive. Indeed, further testing is currently under way at the University of Miami to study both the degradation of digital signals and microphonics in audio circuits. But we can come to some preliminary conclusions. None of the disc or player treatments affected the readout of digital data from CD's, even under conditions of extreme vibration. This result, however, presupposes the use of a well-manufactured transport and laser pickup, such as that in the Philips CD-80 CD player we used for our tests. Players that are less well designed or less ruggedly built may be more susceptible to data-readout errors (and thus perhaps derive more benefit from the treatments we tested), but we did not examine this question.

Our tests showed that in the presence of exceptionally strong vibration, isolation feet reduced distortion in the analog output signal. The amount of distortion involved was exceedingly small either way, however, and far, far below any level at which it might be audible in a music signal. Because tests under the same conditions showed no alteration in the digital data output from the disc, we can surmise that the changes in distortion were due to the effects of vibration on the operation of the analog output circuitry. Further testing would be required to pinpoint the sources.

Let's suppose now that you stop by my house. I am listening to music. You notice that my discs are not edged with plastic rings and not treated with fluids. My CD player, however, is sitting on special rubbery pads. "Do those things really make a difference?," you ask. "Perhaps," I say. "Listen for yourself." I remove the feet and play the disc again. You are uncertain, but you think you might hear a degradation. You say, "I'm not sure, but I think the bass sounds worse." "Ah." I say, holding up the pads, "but are they panaceas or placebos?" 

# THOMAS HAMPSON

# "Singing is not about throats, but about thought and air."

HE musical landscape is littered with the careers of singers who took on too much too soon: the soprano who thought Salome was hers at twenty-six, the tenor who tackled Tristan when he should have re-

mained in the company of Rossini. Baritone Thomas Hampson is determined that this will not happen to him.

Of course, when you are very talented, very handsome, and very tall-and Hampson is all three-the world, particularly the country that is opera, offers plenty of temptations. But Hampson, who already has a ten-year engagement book, is determined not to yield.

"It's the middle of the voice, not the top or bottom, that takes the beating," he told me when we spoke in New York recently. "The baritone voice is very much in the place where you speak, and it's not necessarily a godsend to sing where you speak. I'll sing what I think it is necessary to sing. I would never do an opera role that battered my voice and would make lieder less accessible."

At thirty-six, Hampson already worries about being pigeonholed, and he won't tolerate that, either. He is working hard to balance his career between lieder and opera, with a bit of popu-

by Katrine Ames a side dish. Hampson knows his own mind and

lar American music as a side dish. Hampson



he's fearless about speaking it. Some call it arrogance, some intelligence. It is, more accurately, self-preservation, backed up by questioning and research. And if he occasionally mounts a high horse, he's also willing to knock himself off it. He is capable of diplomacy, too. Last winter *Opera News* asked several people to name their least favorite opera. Hampson's reply: "I haven't heard it yet."

Hampson is blessed with great stage presence and a gorgeous, flexible lyric baritone, particularly striking in *mezza voce*, but what makes him a truly compelling artist is the knowledge that



The Don Giovanni of his generation?

informs his work. He can talk at length about, among other things, any character he has ever played, natural foods, philosophy, *Jugendstil*, directors, astrology, Mahler, and his favorite country-and-western musician.

He is, in short, a thinking singer, though he describes himself as not especially intelligent. "There isn't an ounce of genius in me," he said. "I'm not brilliant, but I know how to avail myself of resources. I know how to learn." When he embarks on a role, he constantly picks it apart and puts it back together, devouring all manner of written material. Before he sang Don Giovanni, for instance, he read not only the musicologist Frits Noske but also Jung and Kierkegaard.

"Don Giovanni dies of his own ego, like a snake who eats his own tail. We sit and watch him consume himself," Hampson explained. "He's not a mythical character to me; he's alive and well. So is the Count [in *Figaro*], so is Ulysses. My fascination with characters in opera is that they are recreations or symbols of living, breathing human beings." Hampson is as concerned with text as with music, and he may preserve his voice not only through careful repertory choice but by attention to dynamics. "Singing is not about throats, but about thought and air," he said. "I believe we're losing some acoustical sensitivity to 'expressiveness.' The decibel level in opera has risen dramatically; the opera world wants to get louder to be more 'expressive.' Singing, expressing the human spirit, is a pretty wonderful thing. But bigger is not necessarily better."

Hampson didn't cut his teeth on opera, though he grew up in a musical household in Spokane, Washington. "The surprise is that I'm a classical musician," he said. "I've always been interested in storytelling. My mother played piano very well. Music was a part of life, but it was Mantovani and Peter Nero. I was in choirs, played the tuba, took piano like every diligent American kid. I did a lot of music dabbling."

Eventually, Hampson stopped dabbling. In 1980, after winning the Metropolitan Opera auditions, he chose to take a contract at Düsseldorf. He learned, quickly, that music is an exhausting business—and that a business is exactly what it is. "The business of music is diametrically opposed to the art of making music," he said. It also keeps him constantly on the move. Hampson, who defines home as "the place where the music and books are," is based in Vienna, but "my hometown is Spokane, and the IRS writes me in Walla Walla."

In the last six years, Hampson's career has taken off. When he sang Don Giovanni at the Met last autumn, Donal Henahan wrote in the New York *Times* that "Mr. Hampson is surely fated to be the Don Giovanni of his generation."

HE baritone, on the other hand, was troubled about another kind of fate. "I was very distressed with the way I sang," he said. It was, perhaps, a warning sign, so he began to "reorder and restruc-

ture." As a result, he has become a great advocate of natural foods, meditation, and "the beautiful connection" between Eastern and Western thought. "My voice is not an instrument. I am an instrument. The more awake, the more alive, the more aware I am of how I function as a psychological, biological, spiritual being, the more I understand how other people work. I believe thought patterns can be affected by food. I'd like to do a study of the eating habits of famous people."

F only he had the time. Currently, he is co-editing the critical edition of Mahler's Des Knaben Wunderhorn and researching Mahlerian performance practice. "My passion," he said, "is to set the record straight on the singing of Mahler." He is also immersing himself in a wide variety of lieder (Carl Loewe is a favorite) and American song. His future operatic agenda includes Eugene Onegin (in Russian), Billy Budd, Don Carlos, and Hamlet. And he records extensively. Though he already has several opera recordings to his credit, including La Bohème (Deutsche Grammophon) with Leonard Bernstein and Don Giovanni (Teldec) with Nikolaus Harnoncourt, Hampson is more interested in recording song because "it's intimate."

His eclectic list of forthcoming recordings reflects his background and interests. Angel is releasing his Cole Porter recital disc this summer; Annie Get Your Gun will follow later in the year. Così Fan Tutte (Teldec) is on the horizon, along with three Mahler cycles with Bernstein and the Vienna Philharmonic on DG. "I am so grateful for having worked with Lenny," Hampson said.

What Hampson describes as "one of the most exciting musicological events of the last twenty years"-the opening of the recording archives as historic recordings are reissued on compact disc-both thrills and enrages him. "I'd be the first to devote my life savings to hearing Vogl sing with Schubert," he said. But inevitably, the revolution has brought with it invidious comparison. "Who's the best? That's nonsense! We're not reveling in the art of making music," Hampson complained. "We're reveling in competition. Does it bother me that my Don Giovanni sits on a shelf with a dozen others? It bothers me because it's humiliating. But [music is] a calling, not an ego trip. What we should be interested in is what Gio*vanni* means . . . . It has *nothing* to do with competition."

So what does Thomas Hampson thave up his elegant sleeve? "Retirement," he said laconically, straining credibility if not his voice. And what does he *really* want? "I'd like to do a duet record with Randy Travis. I'd like to meet Ella Fitzgerald." He paused. The high spirits suddenly vanished. "And I'd like to have one more dinner with Lenny."



But big isn't always practical. More and more people live in small apartments, for example. More of us are setting up secondary stereo systems for other rooms in our houses, too, and



The Onkyo PCS-05 (\$1,000) inc udes a receiver, CD player, dubbing cassette deck, speakers, anc a remote control.



Yamaha's YST-C11 shelf system (above, S999) uses Active Servo Technology to create deep bass from small speakers. The unique Robot fivedisc CD changer, the smallest changer on the market, is the heart of Sansui's MC-3000 minicomponent system (right, \$900), which also has a receiver, a dual cassette deck, two-way speakers, and a remote control.

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The components in Kenwood's UD-7 minisystem (left) measure just 10½ inches wide. In addition to the standard receiver, CD player, dual cassette deck, and speakers, this \$1,200 system includes an equalizer with ten preset curves, five of which can be adjusted for personal taste.

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At 14¼ inches wide, the components in Sharp's CMS-R300CD system (left, \$400) fall between mini-size and full-size. A top-loading five-disc CD changer tops the stack, followed by a receiver and a dual cassette deck. Sharp's X-Bass circuitry adds punch to the low end. A remote control is supplied.



Nakamichi uses color coding and differently shaped buttons to make its Compact Receiver System 1 (S349) and CD Cassette Player 1 (S449) easier to use. The neutral gray finish is smudge-resistant and nonreflective. Two-way bass-reflex speakers are included with the 14watt-per-channel receiver.

The attractively styled 400 Series from Proton (right) includes the AV-445 AM/FM receiver (\$400), the AC-422 CD player (\$300), and the AD-431 cassette deck (\$300). The AH-481 remote control comes with the receiver. A digital alarm clock that can start a cassette or CD or fade in a broadcast makes Denon's G-05 Cellena (above, \$800) an upscale alternative to the clock radio. Three 24-hour single-event timers enable recording from any preselected source.





Infrared magic opens the doors of Bang & Olufsen's 14-Inch-high Beosystem 2500 (above) when your hand approaches it. The biamped speakers are detachable, and remote control is included. Price: \$3,500.

for vacation homes and dormitory rooms. Luckily, equipment makers keep tabs on trends in American life styles, and they now manufacture minisystems designed for small spaces.

An attractively styled minicomponent system—anywhere from about 9 to 14½ inches wide—can fit perfectly into places ill suited to conventional stereo systems. Features, sizes, and prices vary, but a typical shelf system (as they are sometimes called) might include a receiver, or an integrated amplifier and an AM/FM tuner, a cassette deck, a CD player, and speakers. Overall prices range from \$400 to more than \$2,000.

Despite their diminutive size, minicomponents are usually big on features—technological as well as convenience. Almost all come with remote controls, and some are expandable to accommodate add-on components. Their low power ratings (usually from about 14 to 40 watts per channel) make them well suited for secondary listening areas such as an office, kitchen, or study. Quite often they are used as bedroom systems, and many have built-in alarm clocks that make them sophisticated alternatives to an ordinary clock radio.

Compact audio systems are not likely to replace mix-and-match components as primary stereo systems anytime in the near future, but their size and design enable you to put music where there wasn't any before. Drop in a CD or cassette, press play on the remote control, and you'll be convinced that good things do come in small packages.



A 40-watt powered subwoofer glves bass a boost in JVC's MX-1 compact component system (above). Six equalized responses are preprogrammed for rock, jazz, pop, and classical music, headphone listening, and dubblng tapes for car playback. Price: \$1,000.



Music System enables you to play a CD and the radio simultaneously in different rooms. An Acoustimass bass module (not shown) is included.

Fisher hasn't forgotten the LP in the DCS-750 (below, \$755), which includes a turntable, CD player, tuner, dual cassette deck, 25-watt integrated amplifier, and speakers.



A DAT deck sets the Technics Imagine system (\$2,200) apart. A full 17½ inches wide and 13½ inches deep, the recorder, CD player, and receiver are each only 3¼ inches tall. The two-way remote control has an operating-status display.



The amplifier in Sony's MHC-3600CD system (\$1,200) includes inputs for an optional turntable and a DAT deck. Matrix surround processing provides a wider sound stage from the two video-shielded, biamplified speakers. The amp delivers 30 + 20 watts per channet. A Remote Commander with LCD readout is included.



Making your audio or audio/video system work ACK in the good old days, family entertainment meant gathering around the Stromberg-Carlson in the den for a quiet night at home. But times have changed. The average American household is now habituated to 7-hcur CD changers and an FM station to every taste—to say not-ing of two or more color TV's. So it's not very surprisirg that multiroom audio (and video) is hot these days. People want to have good sound wherever they are at home.

Wanting is one thing, getting another. Just distributing stereo sound to multiple rooms around the house can be a challenge: sharing the music in a way that gives remote listeners a measure of control over sources and sound is an even sterner task. But

in more than one room may be easier than you think. the latest generation of hi-fi equipment is starting to tackle the problem in a serious fashion.

First comes the oldest and simplest way of achieving multiroom audio: extension speakers. Put an appropriate pair in the remote room, wire them to your receiver or amplifier's Speaker B connectors, and hit the correspondingly labeled front-panel switch. Voilà! Multiroom sound.

But be aware that when you connect additional speakers to an amplifier, the electrical load it must handle usually becomes more taxing. Two sets of identical 8-ohm speakers wired in parallel present a more difficult combined load of just 4 chms, which will demand more current from the amplifier; paralleling two 4-ohm speaker pairs reduces the load to a potentially perilous 2 ohms. In most cases, you will wind up with a load your amplifier can handle without undue difficulty, but if it seems to be running very hot, shutting down or blowing fuses

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for no apparent reason, or distorting at low volumes, you may have a problem. If in doubt, check the owner's manual accompanying your receiver or amplifier for advice, or consult your dealer or the manufacturer.

Some manufacturers sidestep this issue by wiring their speaker switches so that multiple speaker pairs are connected in series rather than in parallel, which means that the impedance goes up instead of down. Unfortunately, this approach reduces the maximum power (and thus the maximum volume) your amplifier can deliver, and it can degrade fidelity by introducing frequency-response errors. An easy way to check for series connection is to attach speakers only to the Speaker A outputs and then switch the selector from A to A + B (both outputs on) while playing music. If the speakers go off, the connection is serial, and you may want to consider using an external switch box rather than the switch built into your amplifier or receiver.

Assuming there's no problem in hooking up extra loudspeakers, two questions remain: What kind of wires should you use, and how should you route them? For runs longer than about 25 feet, you should use 16-gauge or heavier stranded copper cable. The wire needn't be special in any way, and ordinary hardware-store "zip" or "lamp" cord will do quite well at very low cost. The point is simply to keep the resistance of the wire low relative to the impedance of the loudspeakers, to minimize power loss and response errors. As the length of the run increases or the impedance of the speakers decreases, the wire used should get thicker (lower-gauge). Depending on the circumstances, you may find it advisable to go to 14-, 12-, or even 10gauge cable.

NE relatively easy way to cope with the extension wires is simply to route them along baseboards, behind furniture, around door frames, and so on, holding them in place with cable staples, doublestick tape, or whatever else you can devise. The drawback is that the results are often unsightly, so you may want to tackle the onerous task of snaking the wires inside your walls.

If you are building a new house, the job is a snap, since you can do the wiring as the walls themselves go up. (And you probably should stop here to consider mapping out extensive multiroom audio, video, and possibly even data wiring throughout your new abode.) Otherwise, the situation is tougher. Chasing wires through existing walls can be a real bear, or even impossible—particularly in insulated outside walls. (For ground-floor systems, routing cabling through the floor and across basement ceilings is often an attractive alternative.)

F you do go the in-wall route, the cabling may have to be certified to meet local fire codes; Class 2 wire is often specified. Check with your city or county clerk or building-code I office or with the fire department. Although the likelihood of speaker wires starting a fire is minuscule, given correct connection without careless shorts, codes are codes and should always be followed to the letter. (This is no joke: If your house burns down from some other cause and investigators find noncode wiring of any sort. the insurance company might think twice about paying up.)

If your current receiver or amplifier provides only a single set of speaker outputs, don't despair. Numerous add-on components are available that can connect and select two, three, or even more numerous speaker pairs using just a single set of speaker outputs. The simplest are plain A/B/A + Bswitch boxes, available at reasonable prices from companies such as Niles Audio and Russound; more elaborate models, such as the Adcom GFS-3 (\$100), may include impedance compensation (internal resistors that automatically switch in to insure that the impedance "seen" by the amplifier never drops too low). Some, such as the Niles SVC-2 and SVC-4 (\$150 and \$280, respectively), even have individual passive volume controls for each set of speakers. At least one manufacturer, Soundstream, makes a moderately priced switcher (the \$125 RSS-2) capable of remote-controlled speaker selection when it is used with the company's electronics.

### **Speaker Decisions**

Once a secondary room is wired, the choice of speakers comes to the fore. Small, two-way bookshelf speakers are a popular and traditional choice for this purpose, but virtually any model you like can be used. Recently, flushmounted in-wall speakers have become very popular. They are designed to be built into wood, wallboard, or plaster walls and connected to wires prerouted within the partitions.

In-wall speakers have some powerful advantages: no floor-space requirements, near invisibility, and generally excellent sound from small drivers. They have some liabilities, too. First, tonal balance and stereo imaging from in-walls are occasionally somewhat unpredictable, given the variety of partition (baffle) materials and the range of air volumes behind them. Second, in-wall speakers are there pretty much for keeps: It's impractical, if not impossible, to move them around, experimenting with placement for the best sound or imaging.

For the most part, installing in-wall speakers is best left to professional custom-audio experts. Nevertheless, several manufacturers (B•I•C, for example, with its Muro series) now offer models specifically designed for easy mounting by the do-it-yourselfer.

### Extending the Extensions

Unfortunately, regardless of type, extension speakers are not by themselves the perfect multiroom solution. For one thing, they always play at the volume set at the main system: Changing the level requires a trip back to the receiver or amplifier. And switching sources or even just selecting a radio station requires another round trip. Finally, ordinary extension speakers can play only the same source as the main pair—if you want Bach in the living room and a ball-game broadcast upstairs, you're flat out of luck. Fortunately, there are solutions to all these shortcomings of simple extensionspeaker setups.

Addressing the first problem requires some sort of remote-room volume control. Most common is the basic L-pad, so called because of the shape of the attenuator's schematic diagram. It consists of a knob and a simple circuit connected between the extension speakers and the wires from the source amplifier. Code-approvable L-pads that fit the same standard wall box used for light switches and AC outlets are effective, inexpensive, and widely available.

The downside is that L-pads are inefficient, inevitably wasting a certain amount of amplifier power; they're usually appropriate only for modest-power applications, and they can degrade sound quality, particularly at low volume settings. An alternative is a slightly costlier autoformer control, which uses transformers for more consistent-sounding, somewhat more efficient volume adjustment.

An even better method from a performance standpoint is to equip remote rooms with their own subsystems, each comprising an appropriatesize integrated amplifier and a pair of speakers (or else just a pair of powered



The multiroom receiver (or amplifier) in the main system sends audio signals to the primary remote room via its Speaker B outputs. It feeds the speakers in its own room and in the secondary remote room from its Speaker A outputs via a switch box. The primary remote room is equipped with an infrared "eye" that is connected back to the receiver in the main room, thus enabling users in the remote room to control the whole system. If the main receiver has multizone capabilities, listeners in the primary remote room can even select a different program source from the one playing in the main room. The secondary remote room must share the same source as the main room, but an in-line level control can reduce the volume.

speakers). This kind of setup requires running lengthy, shielded, line-level audio cables to the remote rooms instead of extension speaker wires, so it involves substantially greater cost. Several custom and off-the-shelf multiroom systems (the Soundstream System•1 and the Bose Lifestyle Music System, for example) take the subsystem approach, integrating the sound systems with various control schemes and even video. Often, balanced audio lines are used, greatly reducing susceptibility to hum, noise, and radiofrequency interference. Unhappily, most of these are whole-system, ground-up undertakings.

### **Remote Remotes**

Overcoming the second multiroom challenge—providing more general system control in remote locations requires rather more magic, a bit of sleight-of-hand called an infrared-repeater (IR-R). An IR-R system can go beyond simple loudness adjustment. It can bring full system control—volume, source selection, CD and tape playback and track skip, and perhaps even tone or equalization control—to remote locations. Repeaters are available from a wide variety of makers and usually work along similar lines.

A small sensor eye is mounted in the remote room—many of these, too, are

designed to fit a standard electrical wall box. The eye picks up command codes from a handheld remote control (usually, from any remote control) and converts them to electrical signals, which travel along a single wire routed back to the room where the main system is located. There, the codes are converted back to infrared light by an IR emitter, which transmits the commands to the source components. The emitter may be a box that floods the main system with control-encoded infrared light, or small, individual emitters may be placed in front of each unit's infrared sensor (handy when the equipment is inside a cabinet).

IR-R systems have a lot going for them. They're relatively inexpensive (\$200 or so for a basic setup), very effective, and capable of reliably operating equipment of almost any brand. On the other hand, they introduce yet another long wire that must somehow be routed to the remote room. And adding an IR-R setup doesn't address the third multiroom challenge: the desire for discrete, simultaneous sources in different rooms.

Happily, in the last year or two a number of manufacturers have come up with "zoned" source components-receivers, preamplifiers, and tuner/preamps capable of selecting two (occasionally more) sources at once, directing one program to one set of speaker or line-level outputs while an entirely different signal is routed to a second set. Several designs incorporate remote-controlled volume adjustment for the secondary outputs, eliminating the need for a remote L-pad or another passive volume control. Multiroom receivers, such as the Pioneer VSX-D1S (a \$1,350 full-bore audio/ video model) and the Onkyo TX-904 (a \$400 mainly audio unit), often include a second, lower-power pair of audio channels to power the remote loudspeakers. (Most of these exploit their existing tape-output circuits to direct the secondary source, so you can't simultaneously record a third source.)

Quite a few of these zoned components can be connected directly to an IR sensor eye and pass commands from the eye on to other components from the same manufacturer without a separate emitter. So, with the addition of a set of speakers, an IR sensor eye, and some wires—lots of wires—you can create a fully capable, remotecontrolled, dual-zone audio system.

### Cutting the Cord

All that remains is to get rid of those dratted wires. Impossible? Maybe not. Recent changes in FCC regulations have opened up new radio-frequency (RF) bands for use by home electronics products. Among the myriad uses to which these FM channels (in the 900-MHz region) are being put, several have direct bearing on the problem of multiroom audio and video.

Companies such as Videolink and HTS now offer reasonably priced IRrepeater systems that replace the customary wired control link between rooms with invisible radio communications. A small transmitter box with a built-in infrared sensor eye is located in the remote room; in the room with the main system, a matching receiver



picks up commands radioed from the transmitter (through walls and from as much as a couple of hundred feet away), remodulates them to infrared codes, and re-emits them in the same way as in a conventional IR-R system. Thus, an entire system can be directed from a remote room without the need for any additional wires.

But you still have to run speaker wires between master and remote rooms. Or do you? Another way the new RF bands are being exploited is by audio/video senders, available from manufacturers such as Recoton. These systems can send audio and video signals from a source component (or system) to a remote room entirely over the airwayes-no wires required. A small transmitter unit at the main room sends out an RF-modulated television signal, while a receiver in the remote room demodulates the signal and then routes conventional audio and video signals through cables to the room's TV set or amplifier and video monitor. At least one such design goes further by incorporating two-way radio linking: It transmits commands from the remote room back to the main system and program signals from the main system or component to the remote room.

These RF-links are sold mainly as VCR extenders ("Watch movies upstairs from a living-room video deck!"), but that means they have to handle audio as well as video. Unfortunately, at this writing only one such product claiming to send *stereo* audio is available (the others are all monophonic). And the fidelity of such systems cannot compare with that of a wired system, primarily because of the difficulty of cramming all that audio and video information into an ordinary television signal.

Another "wireless" technology isn't, really. Systems that distribute audio signals along existing house AC wiring have been available for some years. Typically, these have offered only modest fidelity for casual listening. The problem? The main job of AC wiring is continuous distribution of a tremendous (115-volt) 60-Hz signal that's one powerful bass note. So any AC-carrier system must find some way of preventing interference with the audio signal. This has usually led to a substantial loss of response.

But at least one manufacturer is currently working on a new technology that it claims can use house AC wiring to distribute "serious" stereo audio as well as remote-control codes. Components will include a remoteroom IR controller, a remote headphone amplifier, and miniature remote-room amplifiers that combine control functions and power-just plug them into any convenient AC outlet and add speakers to create a fully capable remote-room system. Since this system has yet to come to market, however, its ultimate sonic performance is still unknown.

For the ambitious, considerably more elaborate, integrated multiroom media hardware is available. The Bose Lifestyle Music System, for example, is built around an integrated two-zone control center with a built-in CD player and AM/FM tuner that distributes line-level audio signals to any number of rooms equipped with powered loudspeakers. The system can be operated from anywhere in the house by wireless RF remote control. More than one manufacturer can supply a wired system capable of distributing high-quality audio and video to five or more rooms, with separate source selection and full remote control of the main setup from each. And at the top of the pile are custom-designed and professionally installed multiroom media systems-multikilobuck audio/video/ security/lighting networks that do everything but make coffee.

Perhaps the best feature of the latest multiroom-capable equipment is its modularity. You can wire a simple pair of extension speakers now, add an Lpad later, and hook up a wired or RF IR-repeater system later still. And when upgrading your receiver or amplifier, you might consider models that include multizone output and source selection. Eventually video might become a part of your distributed system. Keep all this in mind when choosing the cables to install in new construction or remodeled areas. However you slice it, home entertainment these days is a multiroom affair. 



In airline pilots, brain surgeons, and CD players, steadiness is a pretty fundamental requirement. In the case of our

Professional type, balanced output jacks are grounded, and shield the signal against noise. its rock-solid stability has rocked the world of music lovers and audio critics. As the reviews have rolled in and the Next, the stable platter, by supporting the entire area of the CD disc, minimizes wobble and chatter.

A wobbling disc presents a difficult target for the laser, while a chattering disc creates resonance, distorting the signal, which distorts the sound.

Another problem for CDs is gravity. Spinning above the laser pickup and supported only in the center, the



# HOWACONCEPT CALLED THE STABLE PLATTER TURNED THE CD UPSIDE DOWN.

awards have been bestowed, it is apparent that the standard for CD players has been advanced dramatically. Behind this success lies a principle that Elite has brilliantly exploited: The mechanical elements of a CD player are just as critical to its quality as its electronic components.

The first significant innovation to come out of this insight is at the heart of the PD-75. The stable platter.

Two basics of physics—mass and inertia—combine to make the stable platter an obviously superior platform to support a disc spinning at high velocity.



, The Elite PD-75 Compact Disc Player. Its elegant urushi finish reflects technical elegance within.



disc sags microscopically. Which to a laser beam is significant degradation. But on the EliteCD platter, the disc is turned upside down—that is, label down, information side up. The disc lies firmly clamped to a solid surface.

Meanwhile, the laser pickup reads

An advanced linear drive motor moves the laser pickup with smooth speed and precision.

the disc's digital code from above, where it is immune to dust settling on the laser optics.

We invite you to bring your favorite CD to an Elite dealer and demonstrate the advantages for yourself. Give

that disc an audience on the PD-75 for what one critic called



"a dimension of sound that you have never heard before."

And usher in a new era of stability.







# SYSTEMS Lofty media room



JOE ELLIOTT's stereo equipment used to sit awkwardly in a makeshift storage cabinet in his Long Island apartment. When he moved to a house, job number one was to build a media room with a custom high-tech wall unit for his audio/video components.

Using 150 feet of Monster Cable speaker cable, Elliott prewired the media room, which is in a loft he built above the kitchen. He also ran cables high up on the kitchen wall for the rear-channel in-wall speakers. Then he made a rough sketch of the wall unit as he wanted it to look, providing a nook for his 6½-foot Novabeam screen, a few extra slots for future additions, and just enough space for his Infinity RS IIIA speakers. He took the plans to Summit Home Improvement in Levittown, New York, which built a 16 x 6½-foot cabinet made

of particleboard finished with high-gloss mica. Summit also built a matching coffee table that houses a Harman Kardon VPM5000 video projector. Elliott attached a Velcro strip to the back of the enclosure to hold all seven remote controls.

For uniformity, Elliott chose to put all the freestanding components on the right and the rackmountable equipment on the left. He modified a few pieces to fit into the rack, which holds a Pioneer RT-909 open-reel tape deck, a Sansui SE-9 equalizer, a Yamaha T-70 tuner, C-50 control amplifier, and K-700 cassette deck, a dbx Model 222 noise-reduction system, and an SAE AS01 power amplifier for the front-channel speakers.

On shelves at the right side are a Yamaha DSP-I Digital Sound Field Processor, a JVC HR-S8000U S-VHS VCR, a Pioneer CLD-3030 combi-player, a



Fisher FVH-840 VHS Hi-Fi VCR, a Yamaha M-35 power amplifier for the rear and center-channel Boston Acoustics speakers, and a Fosgate DSM-3608 Pro Plus surround processor.

When Elliott needs to get to the back panels of the equipment, he goes through a closet off the adjacent bedroom. He'll probably make several trips in the next few months when he adds a DAT deck, subwoofer, and whatever else strikes his fancy. Keeping a media room up to date is a tough job, but somebody's got to do it.

*"Every time you buy something, you've got to upgrade something else in another month," Elliott says.* 

# Introducing Ensemble II.

"My newest design provides better performance, better clarity and more powerful deep bass than any competing speaker system costing up to twice as much. We guarantee it."

Henry Kloss

Three years ago, we at Cambridge SoundWorks changed the audio world when we introduced Ensemble® by Henry Kloss. Designed to compete with expensive, high-performance speaker systems, Ensemble offered no-compromise performance ... in a revolutionary dualsubwoofer/satellite speaker package that could virtually disappear in one's living room. We then sold this revolutionary system in a revolutionary way: factory-direct to the public. By eliminating costly middlemen, we were able to price Ensemble at a fraction of the \$1,000 price tag it would have carried in stores.

## Price breakthrough... only \$399!

We're now pleased to announce Ensemble II, a single-subwoofer version of the best-selling Ensemble system. Ensemble II sounds virtually identical to Ensemble (with its dual subwoofers placed next to each other). In fact, the satellites in Ensemble II are the same as we use in the original Ensemble. But the big news is Ensemble II's price: only \$399. Ensemble II features quality components and cabinet construction normally found only in very expensive speakers. And sonically it outperforms systems selling for well over \$750 a pair. But it's priced in the same range with miniature bookshelf speakers.

# The subwoofer is the solution.

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# **Big Daddy: Wise-Guy Rock Critics You Can Dance To**

HE concept behind Big Daddy, the Rhino Records smart-alecks whose long-awaited (by listeners in some alternative universe) third album, "Cutting Their Own Groove," is now before us, is simple enough—in fact, it's so simple that it's surprising nobody thought of it before. Posing as an authentic Fifties rock band captured by the Commies during a 1959 USO tour of the Far East and only just released, the group performs contemporary Top-40 material in the styles of the artists they supposedly heard before their imprisonment.

What it all sounds like, superficially, is Sha Na Na on acid, and strictly as wise-guy satire "Cutting Their Own Groove" is great stuff. But it's also a pointed act of rock criticism that, at its best, works on several levels, stripping away the pomposity of decades of Rock-as-Culture by reducing familiar songs to their primordial inanities or modest virtures.

Big Daddy's covers can be simultaneously savage and affectionate, as in the album's centerpiece, Talking Heads' Once in a Lifetime recast as an early Harry Belafonte calypso novelty, complete with an unctuous Geoffrey Holder Uncola rap. Sure it's ridiculous, sure it deflates David Byrne's pretentious art-school angst. And yet it uncovers musical values and levels of feeling and emotion in the song that the constipated Eighties-ironic original never dared hint at.

At other times the effect is simply savage, as in the remake of Mike and the Mechanics' *The Living Years* as a *Leader of the Pack/Deadman's Curve* motorcycle-crash teenage opera. This one will make you laugh initially, no doubt, but it will mostly make you cringe, because the band's point couldn't be clearer if they announced it at the top—that a jukebox pop song (written and sung by millionaires, you'll remember) can't possibly deal with an important subject like death on anything but the most sickeningly sentimental level.

There are other great if less blind-

ingly transcendent moments here, such as the hilarious demolition of Whitney Houston's *Greatest Love of All*, which nails the song's insufferable yuppie narcissism (a doo-wop chorus of "I love me so") the way it always deserved to be nailed. And there's a not immediately recognizable remake of *Hold On* (in the style of Jackie Wilson) that proves how little song there was in the Wilson Phillips original to begin with.

There are also some japes that are just that (Andrew Lloyd Webber's Memory done improbably à la the Cadillacs' Speedo) and a couple of tracks where the songs emerge a trifle odd-sounding but otherwise unscathed, as when Springsteen's Born to Run is reborn as Ricky Nelson's Travelin' Man (Nelson-not his kidsshould have lived to hear it). And yes, inevitably, there are instances where the band suffers a failure of nerve and a song falls flat, usually when the joke seems addressed to the listener or artist without ambiguity, like the jarring Madonna reference in the otherwise wicked Frankie Avalon-style version of *Like a Virgin*.

Mostly, though, "Cutting Their Own Groove" comes across as the most subversive party record of the year, vastly entertaining on a simple aural-gag level and yet, dare I say it, a little profound. Maybe it can't resolve the central dilemma of contemporary rock—that is, how do we, as fans, justify our emotional commitment to a music now indistinguishable from beer commericals?—but at least it will make us think about it. Plus it's got a good beat and you can dance to it.

Steve Simels

BIG DADDY: Cutting Their Own Groove. Big Daddy (vocals and instrumentals). Greatest Love of All; Like a Virgin; Graceland; Once in a Lifetime; The Living Years; Money for Nothing; Hold On; Ice Ice Baby; Welcome to the Jungle; I Still Haven't Found What I'm Looking For; Born to Run; Memory; I Want Your Sex; Nothing Compares 2U; Help Me Make It Through the Night (CD only). RHINO © R2-70733 (47 min), © R41H-70733.



Meanwhile, back in the States . . . Sha Na Na on acid?



# Zukerman and Neikrug Play Mozart Sonatas



OZART'S violin sonatas, we tend to forget, were labeled as keyboard works with violin accompaniment. Usage has accustomed us to regard these works differently, even though we sometimes hear them played by two star performers instead of a prominent violinist with an "accompanist." In recording the sonatas for RCA Victor, Pinchas Zukerman has chosen to perform them with his long-time recital partner, Marc Neikrug, who, at least in the initial release in their cycle, is given equal prominence—in the way the music is played and the way it is recorded. There is really no question of "accompaniment" in the conventional sense here, because Zukerman and Neikrug (whose compositions Zukerman has performed as both violinist and conductor) perform as true partners. The mutuality of response they have developed over the last fifteen years or more-a mutuality that allows for plenty of individual breathing room—is an asset that can hardly be overlooked.

The first issue in their series focuses mainly on Mozart's first few months as a Viennese, offering the Sonatas in F Major (K. 377) and G Major (K. 379) and the Variations in G Minor (K. 360), all composed between April and midsummer of 1781. Also included is the piquant little Sonata in B-flat Major (K. 8), composed in Paris when Mozart was only seven years old. The range of mood in the three mature works, composed within two or three months of one another, is striking when they are gathered together, and there can be very little in any of them that does not reveal itself in these uncontrivedly communicative, utterly winning realizations. The unlabored poignancy in the opening movement of the G Major Sonata is itself enough to make the disc irresistible, but Zukerman and Neikrug are just as much on the mark throughout the program, dealing with all the music on the most direct and most involved level.

Zukerman does not eschew vibrato-his tone is characteristically rich and sweet, while never on display for its own sake—and there is nothing in Neikrug's playing that suggests an apology for not using a fortepiano. What they give us here is not a demonstration of instruments or technique but honest and especially tasteful musicmaking. As the sound itself could hardly be better with respect to the balance between the two instruments or the overall realism, this is a splendid launching of what promises to be a distinguished cycle. More to the point, it is simply one of the most enjoyable records of its kind, for the Mozart year or any year. **Richard Freed** 

MOZART: Sonatas for Keyboard and Violin in F Major (K. 377), B-flat Major (K. 8), and G Major (K. 379). Variations in G Minor (K. 360). Pinchas Zukerman (violin); Marc Neikrug (piano). RCA VICTOR © 60447-2-RC (62 min), © 60447-4-RC.

# Haitink's Vigorous New "Fidelio"

BETHOVEN'S opera Fidelio, a paean to human freedom, is universally acknowledged to be one of the great works of musical art. And indeed it is. Despite a weak dramatic start, the opera stands a giant, suffused with the grandeur of Beethoven's concept, at once simple and universal, and sustained by some of the noblest music he wrote.

The new *Fidelio* on Philips, admirably recorded, gives a full account of the excellences of the score thanks to the vigorous, tasteful, thoughtful conducting of Bernard Haitink. One could not ask for finer choral singing than that offered by the Staatsopernchor Dresden or for more expressive playing than that of the Staatskapelle Dresden. Their work bears witness to the unity of musical effort shared by con-



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LEFT IN VEHICLE. I laughed."

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ductor, chorus, orchestra-and cast.

For the set is indeed very well cast. As Leonore, Jessye Norman contributes one of her most opulent-sounding and dramatically convincing performances to date. Her singing of "Abscheulicher! Wo eilst du hin?" is particularly exciting, she is affecting in much of the dialogue, and she seems involved in the story throughout.

As Florestan, Reiner Goldberg is more than acceptable if not truly great. "Gott! Welch Dunkel hier!" makes killing demands on any tenor, written as it is in more of an instrumental than a vocal line. If Goldberg brings to the role less brilliance of tone and less personal intensity than did Jon Vickers, for example, his sincerity and identification with the character are commendable.

Kurt Moll sings a splendid Rocco, with a warmth of voice and personality that creates a wholly believable figure. always true to what one assumes were Beethoven's intentions. He handles his aria, a less than felicitous exposition of Rocco's character, with humanity and humor, qualities that enrich his entire performance. Ekkehard Wlaschiha is implacably steely as Pizarro; his voice has the right "edge" for the part, and he handles his character's malign demands with conviction. The Fernando of Andreas Schmidt, in contrast, is benign and noble. The dissimilarity of their vocal qualities is an effective bit of casting.

As Marzelline and Jaquino, respectively, Pamela Coburn and Hans Peter Blochwitz perform with vocal assurance and refined musical taste. By underplaying, they make the naïve domesticities of the opening scene more palatable than usual.

Although other fine recordings of *Fidelio* are available on CD, including the remastered EMI/Angel set led by Klemperer and the London version under Solti, I can enthusiastically recommend this new one on Philips as their equal. *Robert Ackart* 

BEETHOVEN: Fidelio. Jessye Norman (soprano), Leonore; Reiner Goldberg (tenor), Florestan; Kurt Moll (bass), Rocco; Ekkehard Wlaschiha (baritone), Don Pizarro; Andreas Schmidt (bass), Don Fernando; Pamela Coburn (soprano), Marzelline; Hans Peter Blochwitz (tenor), Jaquino. Staatsopernchor Dresden; Staatskapelle Dresden, Bernard Haitink cond. PHILIPS © 426 308-2 two CD's (133 min), © 426 308-4.

# The Strength Of Peter Himmelman

F there were any doubt before now, "From Strength to Strength" puts Peter Himmelman in the upper echelon of contemporary singer-songwriters-on the same plane as Elvis Costello, Graham Parker, and Bruce Springsteen and nudging his way toward Dylanhood. Each of those writers has something personal that he skillfully communicates. Himmelman's special gift is for lyrics that search out wisdom, compassion, and morality amid the wreckage of the modern age. He talks in metaphors and wrestles with Biblical-scale paradoxes. "These are the times when white is black and black is white/So you'd better study your road maps very well," he sings in Only Innocent.

There's a palpable rasp to Himmelman's voice now—a sign of hard-won conviction as well as frustration—that makes "From Strength to Strength" more vocally aggressive than his previous albums. At the same time, it's one of his quieter works in terms of decibels; any of its fifteen songs could stand on its own in an uncluttered acoustic arrangement. When he uses electricity, the effect is closer to the low-key intimacy of early Dire Straits or "Blood on the Tracks"-era Dylan.

In much of the album, Himmelman offers counsel to close friends and fellow travelers who've wandered off the path. "When you need confession, I'm there to listen/When you're crossing the ocean, I've got a boat to row/ When you need attention, your audience won't be missing," he sings in *Mission of My Soul* amidst the friendly chatter of acoustic guitars and swooping bass. He confronts his share of disillusioning darkness, but he always returns to some message of indomitable strength.

Every lyric is worth quoting, every song worth hearing. *Measure*, for instance, is a passionate protestation of love that explodes in a sunburst of twelve-string guitar. *Impermanent Things*, the most beguiling song here, is beseechingly philosophical and musically lovely, posing questions that have obvious yet uncomfortable answers: "So why keep hanging on/To things that never stay?/Things that just



keep stringing us along/From day to day?" Eventually, it all comes down to the message of perseverance set forth in *Walk On*, the song that opens and closes the album. "There can be no thought of surrender, humiliation, or retreat," Himmelman sings. "Walk on, you weary feet."

### Parke Puterbaugh

### PETER HIMMELMAN: From Strength

to Strength. Peter Himmelman (vocals, guitar); other musicians. Walk On (Part I); Impermanent Things; Woman with the Strength of 10,000 Men; Love of Midnight; Phone Call from Chicago; Only Innocent; Whispering Days; Crushed; Mission of My Soul; Midnight Walk in the Ruins; G-d Don't Have to Teach You This Way; This Too Will Pass; Measure; Running Away; Walk On (Part II). EPIC © CK 47073 (58 min), © CT 47073. ORIGINAL MASTER RECORDING"

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## Recent discs and cassettes reviewed by Chris Albertson, Phyl Garland, Ron Givens, Roy Hemming, Alanna Nash, Parke Puterbaugh, and Steve Simels

### **BIG DADDY:** Cutting Their Own Groove (see Best of the Month, page 57)

THE BOX: The Pleasure and the Pain. The Box (vocals and instrumentals); other musicians. Inside My Heart; Shine Blue Lady; Temptation; Closer Together; Now or Never; Crying Out Loud for Love; Carry On; One of Us; and four others. CAPITOL © C21S-94953-2 (44 min), © C41H-94953.

### Performance: Sophisticated Recording: Good

The members of the Box believe in the power of their own music, and for good reason-the songs in "The Pleasure and the Pain" are mostly terrific. The lyrics make you think, but not too much. The melodies are pretty without being cute. The band knows their stuff is good, and this confidence allows them to relax; they don't force the tempos or show off their technique. The supple performances, featuring ringing U2-like guitar leads and atmospheric keyboard soundscapes, are transparent. What you hear is what they wrote. The Box has had three best-selling albums in their native Canada. "The Pleasure and the Pain" is the band's first U.S. release, but if we're lucky, it won't be the last. R.G.

**THE FIXX:** Ink. The Fixx (vocals and instrumentals). All Is Fair; How Much Is Enough; Crucified; Falling in Love (CD and cassette only); Shut It Out; and seven others (eight others on CD). MCA (a) MCAD-10205 (52 min), (c) MCAC-10205.

Performance: Ecch . . . Recording: Boomy

Hearing this album brings to mind a remark supposedly made by former first lady Pat Nixon at the unveiling of an unflattering presidential portrait: "Well, Dick, it's not the *ugliest* thing I've ever seen." The Fixx's latest album may not be the ugliest thing I've ever heard, but it

#### **Explanation of Symbols**

- © = Tape cassette
- = LP record
- O = Compact disc (timings are to the nearest minute)

# Popular Music



# The La's

F the Beatles were coming out with their first album today, they might sound just like the La's. After all, this new Fab Four of British musicians comes out of the same city, Liverpool, and offers the same kind of explosively bouncy music that made the original Mop Tops so famous.

Of course, the comparison isn't entirely fair to the La's, who don't need to be burdened with all that historical freight. And the parallel doesn't work on all levels, since the words the La's sing are somewhat more cryptic than the early lyrics of John Lennon and Paul McCartney. But when you hear, "If you look in your mind/Do you know what you will fi-i-i-ind/Open your mi-i-i-ind" sung in high, nasal harmonies to a sweet, driving melody—well, it does seem like 1964 all over again.

Today, when synthesized, beat-heavy music dominates the charts, this kind of hypermelodic pop seems out of time, but the La's are irresistible. They come at you relentlessly, armed with two guitars (Lee and Niel Mavers), a bass (John Power), drums (Cammy), and enough hooks to supply a fleet of anglers. *There She Goes* combines eagerly strummed acoustic guitar with jangly electric-guitar noodling, pushed along by a perky rhythm section. The tune might be too cute for words if the tiny, piping vocals in the verses weren't set off by a nasty whine in the chorus. The sour-sweet combination sounds like a duet between a British Invasion band and a garagegrunge punk outfit.

Not only do the La's cram a lot into each tune, but they don't waste any time delivering the goods. With the exception of the final cut, only one song creeps over 3 minutes in length, and two of them streak by in less than 2 minutes. Most of the tracks are programmed without any breathing space, so the power pop slams at you without a letup. At just over 35 minutes, "The La's" may seem on the short side, but it's a 35 minutes that can wear you out with its energy. And seldom has exhaustion been so much fun.

Ron Givens

THE LA'S. Lee Mavers (vocals, guitar); Niel Mavers (guitar); John Power (bass); Cammy (drums). Son of a Gun; 1 Can't Sleep; Timeless Melody; Liberty Ship; There She Goes; Doledrum; Feelin'; Way Out; 1.O.U.; Freedom Song; Failure; Looking Glass. GO!/LONDON © 828 202-2 (35 min), © 828 202-4.

comes close. Always one of the more dubious entrants in that genre of mixed blessings known as New Wave, the Fixx plays heavily synthesized, overgroomed music that deflates to nothing under close examination. Cy Curnin's blustery vocals, the constipated, U2-like strain-ing of the "meaningful" songs, and the contrived MTV dance-party rhythms grafted onto them add up to an album that's both underwhelming and overwrought. Even when the Fixx stumbles onto a good idea, such as the crisp, Hollies-style intro to Crucified, it devolves into a heavy-handed plaint. Stranded in a post-New Romantics wasteland, the Fixx lumbers on, waiting for a new trend under whose umbrella it can take refuge. PP

GAZOLINE: Zouk Obsession. Gazoline (vocals and instrumentals). Carrement News; Consolé Mwen; Baïl Gaz; Obsession; Dechiré; Mariage Jeodi. SHANA-CHIE @ CD-64021 (35 min), @ C-64021.

#### Performance: Festive Recording: Good

Put on "Zouk Obsession," and it's festival time in the Caribbean. The six cuts in this album are extended dance-party excursions with all the zesty, polyrhythmic fervor of Carnival. Oddly enough, the steady pulse at the heart of this music comes courtesy of a drum machine, but the band serves up so many beats and counter-beats, along with pealing guitars, chattering banjo, and saucy horns, that the tunes never sound robotic. Gazoline knows how to downshift into deeply sensual grind as well as how to explode into a frenzied dance fever. No matter what they do, it's hard to resist. R.G.

JOHN WESLEY HARDING: The Name Above the Title. John Wesley Harding (vocals, guitar); other musicians. Movie Theme; The World (And All Its Problems); Fifty Fifty Split; The People's Song; The Movie of Your Life; Bridegroom Blues; Save a Little Room for Me; Anonymous 1916; and seven others. SIRE/REPRISE (1) 26481-2 (59 min), © 26481-4.

### Performance: Déjà vu Recording: Okay

Somebody must have put the wrong cover information on an Elvis Costello album. You can hear the familiar nasal voice singing in the usual exaggeratedcrooning style. There's the same kind of clever wordplay. There are even some of the same back-up musicians. But something doesn't seem quite right. The music doesn't have either the manic explosiveness or the warped romanticism that we normally expect from the second Elvis. Maybe that's why some much younger, much cuter guy is shown on the cover. But, hey, the joke of the name is all wrong. From somebody with a handle like John Wesley Harding, you'd expect more of a Bob Dylan than an Elvis Costello. That's just another disappointing thing about this album. R.G.

66

DON HENRY: Wild in the Backyard, Don Henry (vocals, guitar, mandolin, ukulele); Ray Kennedy (ukulele); other musicians. No Such Love; Into a Mall; Mr. God; The Same Boat; Harley; L. Alien; and four others. EPIC @ EK 46034 (37 min), © ET 46034.

Performance: Wacky genius Recording: Good

Part Randy Newman, part John Prine, Don Henry is Nashville's newest court jester, as liable to lampoon everything from true love to part-time Christians as he is to write poignant hits for such mainstream singers as Kathy Mattea (Where've You Been?). In this debut solo album, the singer-songwriter proves to be far wittier than Ray Stevens and not nearly as misogynistic as Lyle Lovett.

With tongue only half in cheek, Henry takes an up-close-and-personal look at the type of folks who show up in Los Angeles on the Greyhound, all their dreams packed in a cardboard suitcase (L. Alien), and he offers a very wry song about the adventures of a baby lost to his parents when the sidecar comes off his mama's motorcycle (Harley). Things get even stranger with White House Keys, a song that harks back to the kind of routines stand-up comics used to do on records like "The First Family," sketching the fantasy of a departing U.S. President who climbs into his helicopter and drops his keys, leaving the First Mansion open to a big bash by the homeless. And yet Henry, who sings in a kind of rough-gruff Fred Koller voice, shows his serious side here too with Beautiful Fool. an affecting tribute to Martin Luther King, and Heart Cut in Half, a peephole look at a conflicted young Catholic girl and the path she regretfully chooses in life. Produced by Ray Kennedy, one of country's best new progressive talents, Henry's album gives full expression to the wonderfully untamed animals of his imagination. Here's hoping they breed like rabbits. A.N.

#### **PETER HIMMELMAN:** From Strength to Strength (see Best of the Month, page 60)

HOODOO GURUS: Kinky. Hoodoo Gurus (vocals and instrumentals); other musicians. Head in the Sand; A Place in the Sun; Castles in the Air; Something's Coming; Miss Freelove '69; 1,000 Miles Away; Desiree; and four others. RCA () 3009-2-R (38 min), © 3009-4-R.

#### Performance: Retro glory Recording: Fine

The Hoodoo Gurus would have made a great British Invasion band back in the Sixties: They've got killer hooks and a good combo sound, they're brash and unpretentious, and, best of all, they know that while less is more, somehow too much is never enough. The tension between understanding the inner workings of melodic pop and being able to tap into that animal psyche whence great

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feedback-guitar solos and yelping vocals spring makes for fantastic tunes that are righteously ragged but cleanly manicured. In fact, although the album's title seems an obvious reference to sexual comportment, I suspect it also expresses a wishful similarity to that best of all possible bands, the Kinks in their prime.

Head Guru Dave Faulkner has much the same wry, cynic's-eye view of the world as Kinks leader Ray Davies, along with a disarming sensitivity and a fondness for both sweet balladry and brute



Teddy Pendergrass: magic

force. Faulkner comes out swinging in Head in the Sand, scowling at some substance-abusing acquaintance against a backdrop of surging chords and wild feedback that sounds like Cream's "Disraeli Gears" to the second power. Remaining in an elemental vein, like the Aquarian Age naturals they would have been if they were a quarter-century younger, the Gurus move from earth (Sand) to fire (Place in the Sun) to air (Castles in the Air). They make like early Status Quo in Place in the Sun (note the resemblance to Pictures of Matchstick Men in the use of phasing and the Leslie'd guitar). Castles in the Air is downright pretty, the vocal line crooned against the doubling of a guitar with a light touch of tremolo while falsetto counterpoint rises as gorgeously as in Waterloo Sunset (Kinks buffs take note).

Desiree is the sort of song (jaunty guitars, heart-tugging hooks, swell vocals) that shows all that Top 40 pop could be-and, in fact, actually was from about 1964 to 1968. Brainscan, on the other hand, is pure demented garagerock, its grungy guitars and motiveless tempo changes gloriously redolent of speed and cheap thrills. All told, "Kinky" is a groovy detour from the wasteland of modernity, creating crass fun with simple, durable, time-tested tools: guitars, drums, and a good beat. How can you not like a record that runs for a succinct 38 minutes with nary a wasted note, or a band that recognizes in

GEORGE JONES: Friends in High Places. George Jones (vocals); Randy Travis, Emmylou Harris, Charlie Daniels, Vern Gosdin, Buck Owens, Shelby Lynne, Tim Mensy, Ricky Skaggs, Ricky Van Shelton, Sweethearts of the Rodeo (duet vocals); other musicians. A Few Ole Country Boys; All Fall Down; Fiddle and Guitar Band; All That We've Got Left; Love's Gonna Live Here; If I Could Bottle This Up; and four others. EPIC @ EK 45014 (36 min), © ET 45014.

### Performance: On cruise control Recording: Good

In his second duet album in twelve years, George Jones, country's premier voice of doom and despair, seems to be just marking time until he strolls over to his new label, MCA. "Friends in High Places" has him veering from his usual pose as the Teddy Kennedy of country music, always getting into some kind of trouble. He comes across instead as the tamest sort of crooner, harmonizing gamely with a bunch of labelmates and other notables.

With a few exceptions, particularly the pairings with Emmylou Harris (All Fall Down) and Vern Gosdin (All That We've Got Left), the performances sound routine, tossed-off, as if producer Billy Sherrill had lined everything up and Jones just came in to do his part without ever having had a say in who he might sing with. There's also some marginal material, and not all of these guest voices sound that great next to their host's.

But what really kills this project is that there's no real energy between Jones and his guests, the usual result of a duet album made without the singers ever having been in the same room at the same time. Long-distance relationships are never very satisfying, after all. A.N.

EARL KLUGH: Midnight in San Juan. Earl Klugh (guitars, keyboards); other musicians. Midnight in San Juan; Every Moment with You; Kissin' on the Beach; Mobimientos del Alma; Jamaican Winds; Theme for a Rainy Day; and two others. WARNER BROS. (D) 26293-2 (42 min), (C) 26293-4.

Performance: Verv good Recording: Excellent

Earl Klugh's willingness to experiment with various rhythms and musical styles sets him apart from those crossover jazz artists who prefer to settle into a single groove. His versatility, combined with a firm sense of melodic and harmonic invention, has made his recordings consistently refreshing.

In "Midnight in San Juan" Klugh serves up a most appetizing mix of samba, salsa, and soul, presenting his original compositions with the kind of virtuosity we have come to expect of him. The infectious Kissin' on the Beach sounds like it could be a hit, it's that irresistible. So is the delicate and lovely Theme for a Rainy Day, where Klugh's guitar is backed by a string ensemble and the inimitable Jean "Toots" Thielemans offers a lyrical harmonica solo. Klugh's quiet, unobtrusive talent doesn't attract as much attention as it should, but with more recordings of this quality, that situation might well change. P.G.

THE KNACK: Serious Fun. The Knack (vocals and instrumentals). Rocket o' Love; I Want Love; Serious Fun; One Day at a Time; River of Sighs; Let's Get Lost; and five others. CHARISMA @ 91607-2 (48 min), © 91607-4.

Performance: Serious drag Recording: Grating

Just because Don Was produced "Serious Fun" doesn't mean the Knack is any more listenable or likable than it was back in the quartet's My Sharona days. A ten-year hiatus hasn't exactly humbled or matured them. The cover of their new album, for instance, depicts a shortskirted girl encircled by a fiery hulahoop. On the disc, lead singer Doug Fieger runs through numerous clichés that mean "My libido is aroused," from "I'm a rocket of love" and "I'll be your mau-mau oh oh yeah" to the unforgettably clever "I'm a dog for your love, baby yeah yeah." Meanwhile, the band bashes out hamfisted big-beat pop rock coated with sugary, high-harmony glamrock choruses. Although they attempt to combine everything from Sixties pop to Seventies hard rock to the chartbusting lite-metal of the past few years, the collision of influences cancels out any coherent identity. Berton Averre's fleet, encyclopedic guitar riffing is still the best thing about the Knack. Otherwise, the group sinks neck-deep in a swamp of derivations. "Serious Fun" will make you want to forget the Knack. P.P.

TEDDY PENDERGRASS: Truly Blessed. Teddy Pendergrass (vocals); vocal and instrumental accompaniment. She Knocks Me Off My Feet; It Should Have Been You; Don't You Ever Stop; It's Over; Glad to Be Alive; How Can You Mend a Broken Heart; I Find Everything in You; and four others. ELEKTRA (D) 60891-2 (60 min), © 60891-4.

Performance: Soul master at work Recording: Very good

Turning tragedy into triumph, Teddy Pendergrass has pushed himself to a higher level of artistry since the automobile accident that left him paralyzed several years ago. Building on the sensual r-&-b that first earned him acclaim as lead singer with Harold Melvin and the Blue Notes back in the early Seventies. Pendergrass has recast himself as a much broader-based artist. The raw, assertive, sometimes abrasive macho posturing that accounted for much of his 2 original popularity has been tempered by the mellowness of personal struggle combined with maturity. His new music has a deeper reach and leaves a more lasting impression.

"Truly Blessed" is Pendergrass's most ambitious album yet. He produced it himself and co-wrote five of the eleven songs, four with his long-time associate Terry Price and the title song with Gabriel Hardeman. The set mixes tuneful, spirited numbers with sensitively interpreted ballads. The reshaping of the Bee Gees' How Can You Mend a Broken Heart is outstanding-Teddy the old smoothie at his very best. We Can't Keep Going On (Like This) represents an unexpected turn toward social commentary, touching on such themes as war, hunger, and drug addiction. The real gem of the album is the riveting title track, Truly Blessed, a personal anthem featuring a gospel-chorus effect and some sanctified piano riffs by Patrick Moten. In all the tracks, however, it is the personal magnetism and vocal magic of Teddy Pendergrass that hold your attention. PG

MIKE REID: Turning for Home. Mike Reid (vocals, keyboards); Albert Lee (guitar); other musicians. Walk on Faith; Till You Were Gone; I'll Stop Loving You; I Got a Life; Turning for Home; As Simple as That; and five others. COLUMBIA () CK 46141 (38 min), () CT 46141.

> Performance: Star player Recording: Very good

Forget that Mike Reid rips off Dire Straits in the guitar opening of Walk on Faith, the hit single from this debut album. That misjudgment aside, "Turning for Home" is worth your attention. The former Cincinnati Bengals football star has been a respected Nashville songwriter for some time now, turning out a passel of tunes for Ronnie Milsap (Stranger in My House, Lost in the Fifties Tonight) as well as Born to Be Blue for the Judds and other hits for Don Williams and Willie Nelson. Here, in a bluesy, rough-hewn voice-it signals that he's a "real guy," not a slick drugstore cowboy-Reid moves through eleven original songs that, for the most part, confine themselves to familiar subjects: the need to be spiritually and physically centered (I Got a Life), the anguish of unrequited love (Everything to Me), and the importance of roots and family (This Road). Reid may recall a lot of country singersongwriters who find a safe haven with sentimental themes and down-home values, but he writes with such candor and thoughtfulness that he never seems to be pulling an emotional shuck-and-jive. Both uplifting and direct, his songs strike a balance that's still too rare in country music: They're affecting nuggets of honesty and snappy radio fare. Keep an eye A.N. on this guy.

NICK ROBERTSON: Bullet Proof Boy. Nick Robertson (vocals, guitar); Robbie Blunt (guitar); Maria McKee (vocals);

IUCKER/COLUMBI.

MARK

PHOTO:

other musicians. Mind Reader; Show Me a Sign; Pride & Joy; Love, Life and Happiness; She's Looking Tired; Slice of Heaven; Kiss of Forgiveness; Reach Out and Touch the Moon; and three others. CHARISMA © 2-91422 (50 min), © 4-91422.

Performance: Celtic rock Recording: Very good

Damn, but I really like the way this young Scot sings. Nick Robertson couldn't croon in a straight line if his life depended on it, and considering the mystical quality of many of these songs, he might think his immortal soul is at stake. You might note a resemblance to Van Morrison. For example, in Show Me a Sign-or, as Robertson twists it. "show me a si-yi-yi-i-uhn"-words fail him. As the Great Van has done many times. Robertson goes into the "na" zone, and a major chunk of the chorus becomes, "Na nana nanana na na na na na na. Robertson never goes completely into a Van trance (a Vance?), but he clearly gets lost in the music-a lot. Whether he's describing the amorous attentions of a very shy young man (Show Me a Sign) or rhapsodizing spiritually about



Mike Reid: bluesy candor

existence (Love, Life and Happiness), he has the eager intensity of a novice in a religious order.

At one moment this album sounds like a hymn, at the next like an r-&-b revue, and at the next like blue-eyed Caledonian soul. The ethnicity is reinforced by such rootsy instruments as the harmonium, dobro, bouzouki, guitaron, pipes, whistle, and violin. The rock 'em, sock 'em side comes from your basic electrified guitar, bass, and keyboards together with some rifle-shot backbeats. That may sound like a dichotomy, but it doesn't sound like a dichotomy at all, because Nick Robertson believes what he sings and plays. What's more, he makes us believe it, too. **R.G**.

THE ROLLING STONES: Flashpoint. The Rolling Stones (vocals and instrumentals); Eric Clapton (guitar); other musicians. Continental Drift; Start Me Up; Sad, Sad, Sad; Miss You; Rock and a Hard Place; Ruby Tuesday; You Can't Always Get What You Want; Factory Girl; Can't Be Seen; and eight others. ROLLING STONES © CK 47456 (77 min), © CT 47456.

### Performance: No satisfaction Recording: Good

Today's question, class: What advantage does Jim Morrison have over the Rolling Stones? The answer: death. For in death comes freedom—escape from maintaining the body beautiful, escape from living up to an image, and, most important with such figures as Morrison and the Stones, escape from inevitable musical deterioration.

Case in point: the Stones' live album from their 1989 "Steel Wheels" tour so sloppy, so uninspired, so mediocre that it sounds like the work of a group that passed on while no one was looking. It's the over-the-hill gasp of a band that, for the sake of its legend, should have gone out with a blast on the order of a plane crash.

Of the seventeen songs in "Flashpoint," four are from the band's "Steel Wheels" album, two are new studio originals (Highwire and Sex Drive). and the rest are overly familiar standards culled from the Stones' long and remarkable career. And yet, there are no great vocal or instrumental performances here. The only real surprise is the inclusion of Factory Girl, from the 1968 "Beg-gar's Banquet," and the eye-opener is not the performance, only that the Stones have chosen to resurrect a song about their former (fantasy) lives as working-class heroes. The performances were clearly drawn from a series of shows on the tour (standard routine with live albums these days), but if they are the very best of the lot, it must have been a lackluster tour, indeed.

The band still has not learned to play Paint It Black totally in sync, and the instrumentation throughout is often so hit-and-miss as to suggest that Ron Wood and Keith Richards could not hear themselves or each other on the monitors. Otherwise, the performances suffer from two principal faults: lack of emotional involvement in the playing or singing (Mick Jagger, especially, seems to be on automatic pilot) and an overall dragginess. In fact, the appropriate energy level really kicks in only twice, both times when two songs mesh together on a roll. In the pairing of Miss You and Rock and a Hard Place, the former is thrilling even though the tension, paranoia, and ominous brooding of the studio version are almost obliterated, and Rock and a Hard Place throbs and aches like a split lip. It's largely the Uptown Horns and the background vocalists who nudge Jagger and drummer Charlie Watts to push the tempo up where it belongs, and



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the fast tempo is precisely what makes the second song pairing, *Jumping Jack Flash* and *Satisfaction*, such a welcome relief at the end of the lackadaisical live program. Neither of the tacked-on studio tracks comes close to tearing up the place. The exhaustion of the Rolling Stones, as artists and performers, becomes pathetically obvious in the ironic lyrics of one of the new tunes, where Jagger, the shiny, slithering snake of old, boasts, "We walk the high wire." Well, you used to, fellas. You used to. A.N.

DAVID LEE ROTH: A Little Ain't Enough. David Lee Roth (vocals); vocal and instrumental accompaniment. A Lil' Ain't Enough; Shoot It; Lady Luck; Ham-



Rod Stewart: singles-bar rock with soul

merhead Shark; Tell the Truth; Baby's on Fire; 40 Below; Sensible Shoes; and five others. WARNER BROS. © 26477-2 (53 min), © 26477-4.

### Performance: Larger than life Recording: Good

The clown prince of hard rock is back with a vengeance. For those who thought David Lee Roth had become a living parody of pop metal, more concerned with his hair and biceps than with his music, "A Little Ain't Enough" will come as a tonic shock. This album fairly oozes with the over-the-top qualities that made Roth and his former band, Van Halen, famous: beefy vocals, lurid double entendres, slashing guitars, pumping rhythms. The title may be the most understated thing about it—for this dude, clearly, too much ain't enough.

Roth has always had the glibbest of

tongues. His lyrics display all the reserve of a frat boy on a Saturday night, but they're often outrageously funny. For example, in the title track Roth sings, "Vaccinated with a phonograph needle one summer break/Same summer that I kissed her on her daddy's boat/ And shot across the lake." And—wink, wink—how about this bar flirtation from *Shoot It:* "I heard you like to play with guns/And I see ya got a vacancy!!" If he weren't so clever, Roth would be entirely too sleazy to take. On the other hand, he might also make music about genuine feelings—other than lust, of course.

"A Little Ain't Enough" moves Roth a little more into the musical mainstream. Oh, he still likes his rhythm section to whomp and his guitarists to rip, but he keeps the players under a fairly tight rein (the guitar solos here won't satisfy metalheads craving long bursts of window-shattering special effects). Keyboards provide synthetic sweetening throughout, and Shoot It gets punched up by a full horn section. That brass is the only metal you'll hear in this album. Roth rocks just as hard as eversome of these songs are close relatives of Van Halen hits-but overall there's a little more pop sensibility. Maybe Roth is ripening, not maturing, as a musician, or maybe he's just aiming for old Van Halen fans now settling into careers. It doesn't really matter. Whatever the reasons, "A Little Ain't Enough" is good, semi-clean fun. RG

DARDEN SMITH: Trouble No More. Darden Smith (vocals, guitars, percussion); vocal and instrumental accompaniment. Midnight Train; Frankie & Sue; All the King's Horses; 2000 Years; Ashes to Ashes; Fall Apart at the Seams; and five others. COLUMBIA © CK 45289 (37 min), © CT 45289.

Performance: Ingratiating Recording: Good

Long a mainstay of the Austin music scene, Darden Smith is a master of the impressionistic school of songwriting. Unfortunately, he's a little-recognized master.

For this second solo album, Smith has, wisely, left Columbia's country division and now labels his music "acoustic rock," although much of his material doesn't mind rubbing shoulders with folk, blues, gospel, or almost any other style he can coax out of a wooden guitar. The best way to describe his music is to say that it's interior monologues set to subtle musical shadings.

Smith finds his inspiration in situations of struggle. He's haunted by relationships that never get resolved, one of several themes that dominate the folkblues of *Midnight Train*, though the Billy Joel-like pseudo bebop of *Frankie & Sue* has a happier ending. Smith likes to tell stories in song, but more often than not, as in *Fall Apart at the Seams*, he merely sketches the broad strokes and lets the listener fill in the details. That's where he either loses you or reels you in for life: He's singing about himself, but he's singing about you, too.

Most of the time, Smith sounds like one of the best of the British folkies certainly he has more of an Englishman's approach to romantic mood than a Texan's. *Listen to My Own Voice*, for example, weds a Bruce Hornsby-like melody to a kind of Bert Jansch sensibility. And Johnny Was a Lucky One, a tale of two soldiers who went to Vietnam, only one returning, examines the luck of the dead, who no longer have anything to prove and can never disappoint us.

"Trouble No More" had a time getting to the final mix. Martin Lascelles produced seven cuts, and Pete Anderson (Dwight Yoakam, Michelle Shocked) came on board for four. Their different approaches may explain why the album paddles along a little aimlessly at times and doesn't seem quite sure what kind of record it wants to be. Nevertheless, "Trouble No More" is filled with memorable insight and images, and it establishes Darden Smith as one of our most alluring cockeyed poets. A.N.

ROD STEWART: Vagabond Heart. Rod Stewart (vocals); vocal and instrumental accompaniment. Rhythm of My Heart; Rebel Heart; Broken Arrow; It Takes Two; When a Man's in Love; You Are Everything; The Motown Song; Go Out Dancing; and four others. WARNER BROS. © 26300-2 (55 min), © 26300-4.

Performance: Improved Recording: Very good

The past fifteen years of Rod Stewart's career were tidily summarized on CD's Nos. 3 and 4 of his boxed retrospective, "Storyteller." Maybe two or three tracks from each of his last who-knowshow-many albums hold up as art or as entertainment. The albums themselves seem to pass into the cutout bins almost as quickly as they go Platinum, victims of their own lack of consequence. "Vagabond Heart" finds Stewart working to reclaim some of his soulful interpretive touch without completely letting go of the synth-inflected singles-bar rock that has become his bread and butter. On balance, it's his best piece of work since 1981's "Young Turks.

On the plus side, Stewart approaches Robbie Robertson's enigmatic Broken Arrow in more of a Gasoline Alley than a Sunset Boulevard state of mind. Similarly, he breathes life into Van Morrison's Have I Told You Lately with an aching, reverential vocal. Rhythm of My Heart, reverberant with bagpipes and massive drums, is the closest thing to a classic singalong he's cut since Sailing. From his own pen, Go Out Dancing zips along at an infectious clip, and If Only is a potent ballad of lost love that other singers will be moved to cover. Then again, the album is marred by some awful silliness (a fluffy pick-me-up called Rebel Heart and a Richard Perry-produced trifle entitled The Motown Song) and a

compulsive K-Tel Records mentality (pro forma cover versions of *lt Takes Two*, sung with a bored-sounding Tina Turner, and the Spinners' *You Are Everything*). Still, if "Vagabond Heart" is a mixed bag, it's worth hearing if you like the lad. *P.P.* 

THE TRAGICALLY HIP: Road Apples. The Tragically Hip (vocals and instrumentals); other musicians. Little Bones; Twist My Arm; Cordelia; The Luxury; Born in the Water; Long Time Running; Bring It All Back; Three Pistols; and four others. MCA © MCAD-10173 (49 min), © MCAC-10173, • MCA-10173.

### Performance: Crunchy Recording: Good

When the Tragically Hip get riled, they make music as sharp as a pistol crack. Their guitars are nice and stingy, their rhythm section knows how to crunch it up, and their vocals are full of sound and fury. But most of "Road Apples" signifies nothing to me, thanks to wildly overwritten lyrics, including references to "prideless loans" and "spider-web alphabets." Back in their native Canada, the Tragically Hip have been very successful with their no-holds-barred style, but I wish they showed a little more discipline. R.G.

KELLY WILLIS: Bang, Bang. Kelly Willis (vocals); Steuart Smith (electric guitar); Richard Bennett (guitar); other musicians. I'll Try Again; Too Much to Ask; The Heart That Love Forgot; Sincerely (Too Late to Turn Back Now); Baby, Take a Piece of My Heart; Bang, Bang; and four others. MCA 
 MCAD-10141 (37 min), 
 MCAC-10141.

### Performance: Branching out Recording: Good, but . . .

Kelly Willis's debut album zipped through the country-music scene last year like a convertible caught on fire and racing toward the river. Recorded with her band, Radio Ranch, it showcased Willis as a wild and libidinal go-get-'em gal out for the ride of her life. She had one mode and one mode only: full tilt.

In "Bang, Bang," her follow-up album, Willis has ditched her band in favor of far stronger studio players—Steuart Smith, Paul Franklin, and Richard Bennett on guitar, Larrie Londin on drums, and Lee Sklar on bass. She's also learned to vary her delivery, tightening her belt a notch or two for the ballads and reining in her hell-bent-for-leather personality when the material demands.

Still, at twenty-two, Willis possesses a greater range and more lung power than almost anyone else in or on the fringes of country music, and she continues to call on her rock influences—as well as Patsy Cline—to sell her songs of anxious romance. With a smart repertory courtesy of Joe Ely and Steve Earle, among others, Willis stirs up a sound—part progressive cowpunk, part retro-Nashville —that suggests Patsy Cline hopped up on speed and recording with a West Coast band. Cline, of course, for all her hard language in private, was never this fiercely independent or modern in public. But Willis, despite her excellent taste in songs; doesn't really sing these tunes as much as use them as costumes in which to wrap her fantasies. Nowhere is this clearer than in the title song, credited to a writer with the cryptic name of Isnard. Rockabilly to the core, the tune is as jumpy as a death-row inmate coming up to his last appeal. It cooks like crazy, but who knows exactly what Willis means to say with it?

Unlikely as it may seem, Willis just might be a less sophisticated and philosophical version of the Cowboy Junkies' Margo Timmons—a sort of blank slate on which the listener projects whatever he wants. As with the Junkies, there's something happening here. But what and how hard you're willing to work to find it—is up to you. A.N.

TOM ZÉ: The Best of Tom Zé. Tom Zé (vocals and instrumentals); other musicians. Mã; O Riso e a Face; Toc; To; Cademar; Hein?; Augusta, Angelica e Consolacia; So (Solida); and seven more. LUAKA BOP/WARNER BROS. © 26396-2 (41 min), © 26396-4.

### Performance: Experimental Recording: Very good

Prepare for the unexpected with Tom Zé, who has taken popular Brazilian music as we know it, broken it into its parts, and created an eccentric but highly appealing style of his own. He became known in his own country back in the Sixties as part of the *tropicalismo* movement, a surge of creativity that spanned all the arts. While others such as Caetano Veloso and Gilberto Gil went on to international acclaim, Zé has held to his own experimental course, emphasizing satirical commentary and a fusion of the various elements that contribute to the rich Brazilian culture.

The selections here are drawn from several albums Zé made during the Seventies. While an ample number represent the bittersweet melodicism that makes Brazilian music so irresistible. the most interesting pieces are those where Zé lets his imagination run rampant. In one of these, Ma, which opens the set, what sounds like an African chant is sung against a weirdly ominous samba background. It seems to be music for a baptism ritual, but the lyrics (provided here in translation) are so odd that the intent remains indeterminate. Zé's instruments include not only guitar but also a typewriter and something he constructed from vacuum cleaners, doorbells, and blenders, among other things. Even when he croons Antonio Carlos Jobim's Felicidade (a highlight of the classic French film Black Orpheus), he alters the meter so that the whole thing seems just a little askew. It all adds up to a fascinating excursion into the world of a highly creative artist. P.G.



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ANDRÉ JAUME: Something Old, Something New, Something Borrowed, Something Blue. André Jaume (tenor saxophone, clarinets); Joe McPhee (soprano saxophone, valve trombone); Clyde Criner (piano); Anthony Cox (bass); Bill Stewart (drums). 872; Devotion; The Coaster; God Bless the Child; Love and Hate; and four others. CELP/HARMONIA MUNDI © C15 (64 min).

### Performance: Something fine Recording: Excellent

I don't know anything about André Jaume—where he came from, how he got here, where he's going, or what he did before making this album. All I know is that what I hear on "Something Old, Something New, Something Borrowed,



### Fats Waller: Come and get it!

Something Blue," recorded in New York in 1990, makes me want to hear more. Jaume plays tenor saxophone and clarinets with equal authority, making smooth transitions from one stylistic environment to another. For this set he assembled a superb group of players who share his obvious penchant for taking the music down a variety of winding paths. For example, his own *Gin Fizz* at first has a decided Fifties West Coast feel, but it soon modulates almost imperceptibly into the Nineties.

Also featured here is multi-instrumentalist Joe McPhee, and I have never heard him play better. His smooth trombone work on the opening track—872, his own composition dedicated to his late friend and co-player. Clifford Thornton—is a revelation, and hearing his saxophone engage Jaume in weaves of intriguing invention made me wonder why McPhee is not as appreciated at home as he is in Europe. I must also praise pianist Clyde Criner, bassist Anthony Cox, and drummer Bill Stewart, who collectively provide a superb rhythmic foundation that helps to insure this album a prominent place in my collection. C.A.

LES MCCANN: Les Is More. Les McCann (piano, vocals); other musicians. Maleah; With These Hands; Samia; Little Blue Volkswagen; Clapformation; Bird Story; Compared to What; and four others. NIGHT/VIRGIN © 2-91591 (57 min), © 4-91591.

### Performance: Representative Recording: Okay live tapes

This offbeat album showcases Les McCann in many roles, from that of pianist and singer, for which he is best known, to that of raconteur, talent scout, and jazz aficionado. The material is culled from more than five hundred tapes McCann made of his own live performances over the years, along with bits from radio interviews and performances he taped of other artists whose careers he fostered. It is thus more like an aural documentary than a conventional music album.

The selections featuring McCann as performer date from the Sixties and are representative of the accessible, gospelflavored style that made him such a favorite during those years. Maleah, in particular, evokes the mood of that period by McCann's use of Ahmad Jamal's famous Poinciana rhythm pattern. Other tracks are live versions of McCann's best-selling recordings, including Compared to What and With These Hands (which established McCann as a vocalist). There is also a montage of fragments by other artists under the title Les by Night, featuring Stanley Turrentine, Cannonball Adderley, and Carmen McRae taped during performances in Los Angeles clubs and a live recording of the then little-known Roberta Flack singing All the Way in Washington, D.C., just before McCann helped her get her first contract with Atlantic Records.

The sound of these nonprofessional recordings lacks depth at times, but that can be overlooked because of the electricity of the performances. Overall, "Les Is More" makes for an interesting time capsule of Sixties jazz. *PG.* 

FATS WALLER: The Last Years (1940-1943). Fats Waller and His Rhythm (vocals and instrumentals). Old Grand Dad; Fat and Greasy; (You're a) Square from Delaware; Eep, Ipe, Wanna Piece of Pie; Stop Pretending; I'll Never Smile Again; Dry Bones; Fats Waller's Original E-flat Blues; Stayin' at Home; Hey! Stop Kissin' My Sister; Everybody Loves My Baby; I'm Gonna Salt Away Some Sugar; 'Tain't Nobody's Biz-ness If I Do; Abercrombie Had a Zombie; My Melancholy Baby; Mamacita; Shortnin' Bread; I Wanna Hear Swing Songs; You're Gonna Be Sorry; All That Meat and No Potatoes; Let's Get Away from It All; Come and Get It; Rump Steak Serenade; Ain't Nothin' to It; and forty others. BLUEBIRD/BMG © 9883-2-RB three CD's (194 min), © 9883-4-RB three cassettes.

#### Performance: The one and only Recording: Excellent mono transfers

There was no one quite like Thomas "Fats" Waller, and while his music is generally pigeonholed as swing, it really defies categorization. As a pianist, Waller looked to James P. Johnson for inspiration, and if Johnson was the father of that rollicking, two-fisted Harlem style known as stride, Waller was the man who popularized it. A superb pianist, he influenced many other jazz performers, especially Count Basie, whom he taught. During a recording career that spanned twenty years, Waller made hundreds of sides-mostly for Victor and its subsidiary label, Bluebird-that focused on another aspect of his talent: humor. He had a way with words, and while he loved and often wrote tunes with witty lyrics, he could also take a trite Tin Pan Alley song and mock it in a manner that made it quite palatable. Unfortunately, Waller's humor and showmanship often obscured his musicianship-audiences expected him to be a comic all the time.

"I think that really frustrated him," sideman Eugene Sedric told me during a 1961 session reuniting several Waller alumni. "He loved to clown, but I've seen him when he wanted to get more serious. But people wanted to hear his hits, so we always ended up doing the funny numbers."

This three-CD/tape reissue set contains sixty-three songs recorded by Fats Waller and various versions of his band between April 1940 and July 1942. Because reissue producer Orrin Keepnews wanted to concentrate on the band sides, the set does not include Waller's five 1941 piano solos, and it also omits the eight band recordings made at a January 12, 1940, session, probably for lack of space.

As might be expected, the emphasis here is on novelty, and it's a delightful romp, full of salient instrumental statements and good ensemble passages. Waller's small-band regulars, like saxophonist Sedric, trumpeter Herman Autry, guitarist Al Casey, and drummer "Slick" Jones, are on hand for most of the proceedings, but there are also sessions with larger bands. Novelty tunes tend to date quickly, but Waller's vitality and musicianship make these spirited cuts sound as fresh today as they were fifty years ago. Let's hope BMG reissues all of the Waller material with the same attention to sound quality obviously given to this superb set. C.A.

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# Recent discs and cassettes reviewed by Robert Ackart, Richard Freed, David Hall, Eric Salzman, and David Patrick Stearns

### ARENSKY: Variations on a Theme by Tchaikovsky (see TCHAIKOVSKY)

ARNOLD: English Dances, Sets I and II, Opp. 27 and 53. Solitaire: Sarabande; Polka. Scottish Dances, Op. 59; Irish Dances, Op. 126; Cornish Dances, Op. 91. London Philharmonic Orchestra, Malcolm Arnold cond. LYRITA © SRCD.201 (61 min).

### Performance: Ingratiating Recording: First-rate

This disc, marking the seventieth-birthday year of Malcolm Arnold, is a collection of all of Arnold's British dances, with the composer himself conducting the London Philharmonic (in which orchestra he played first trumpet back in the Forties). Nowhere do all of Arnold's gifts come together more ingratiatingly than in these altogether sparkling dances. There are five sets, all in fours, composed between 1950 and 1986. In 1956 the eight English Dances were used for a ballet called Solitaire for which Arnold composed two additional pieces, a sarabande and a polka, that are also included.

The same program, played by the Philharmonia Orchestra under Bryden Thomson, is on a recent Chandos CD, but the Lyrita disc under Arnold himself is clearly more fetching. Arnold, after all, knows what he wants to express in these dances—which moods he wants to capture—and his somewhat more expansive treatment gives them the breathing space denied them by Thomson, who, while never seeming coldhearted or indifferent to their essential charm, does tend to rush some of them off their feet.

Arnold recorded the Irish Dances and the two Solitaire pieces digitally last year, while all the other material on this disc goes back to 1979 analog sessions and was issued on LP. There is a little more brightness in the 1990 material, but the sound is really first-rate throughout the disc. A splendid introduction to this composer's music. *R.F.* 

### Explanation of Symbols

- © = Tape cassette
- = LP record
- © = Compact disc (timings are to the nearest minute)

# **Classical Music**

**BACH:** French Suites (BWV 812-819). Davitt Moroney (harpsichord). VIRGIN © 91201-2 two discs (144 min).

Performance: Outstanding Recording: Outdoorsy

As usual, the harpsichordist Davitt Moroney delivers numerous surprises in this recording, but not the sort that have earned him a reputation with some critics as an eccentric. Instead of the usual six French Suites, there are eight-the same as in Christopher Hogwood's recording for L'Oiseau-Lyre, based on previous versions Bach wrote during the long metamorphosis of these suites. Of course, Moroney has made his own textual decisions among the many possible variants, such as augmenting the fourth suite (BWV 815) with a second gavotterecorded here for the first time-that he uncovered from an early version of the piece. Though not a major find, it's longer, more substantial, and more fugal than any of the other gavottes in the set.

All of this might seem like academic hairsplitting were it not for the conviction of Moroney's playing. His musicological investigations have evidently added to the richness of his interpretations. In fact, this is one of the finest and most satisfying recordings of the French Suites on harpsichord available. Most modern musicians (with the exception of the pianist András Schiff) interpret Bach from a metrical standpoint-no matter how independent the individual linear voices are, they must strictly line up to create a vertical sonority. Moroney is a truly polyphonic player. He gives each strand the character, independence, and flexibility it requires, even if it means using flexible tempos, which, in any case, bring the music a certain warmth. Add in his generous ornamentation and practice of breaking chords, which unfold at a natural, leisurely tempo, and the listener has the pleasant sensation of floating on a buoyant salt sea. The recording, made at the Chateau de Creullet in Normandy, is resonant but clear. Obviously, the engineers left the windows open, because between movements you can hear birds twittering outside. A nice DPS touch.

BEETHOVEN: Fidelio (see Best of the Month, page 58)

BEETHOVEN: Piano Sonata No. 28, in A Major, Op. 101; Piano Sonata No. 29, in B-flat Major, Op. 106 ("Hammerklavier"). Andrew Rangell (piano). DORIAN © DOR-90143 (74 min).

Performance: Contemplative Recording: Close-up

Andrew Rangell comes across here as a thoughtful musician, more concerned

about the music's essence than its medium, yet aware of how much a part of that essence the medium can be. How unaffected his personal view is by tradition is powerfully apparent in the opening pages of the B-flat Sonata. There is an impression of unlabored depth and intensity, but with no sacrifice of momentum or regard for tone. The remarkable balance of internal elements and technical strength draws the listener in to a level of absorption perhaps approximating the pianist's own.

Rangell takes a fairly expansive, in-



Andrew Rangell: every note counts

ward view of both works on this disc, and at the extremely deliberate tempo he adopts for the adagio of the B-flat Sonata the momentum does threaten to thin out a bit—but somehow it never does. Every note is unselfconsciously made to count, and the more one listens, the more all nonessentials seem to fall away, until only the bare-bones intellectual and emotional core of the music remains. This kind of playing is clearly not intended to appeal to the casual listener.

Despite the vaunted excellence of the Troy Savings Bank Music Hall (in upstate New York), where the recording was made, and the note about the use of short microphone cables, fiber-optic technology, etc., the hall's reverberance



Mikhaïl Rudy: Janáček by way of Ravel

sets up an occasional blur. Crispness can, perhaps, be exaggerated to antiseptic levels, but the sound here becomes a little fuzzy; perhaps it is an inevitable consequence of the close-up focus, which contributes to an otherwise agreeable warmth and full body. In any event, these performances are definitely worth hearing-not only hearing, but very specifically listening to-even though they may not displace established personal favorites. R.F.

BERLIOZ: Mélodies. Les Nuits d'Été: Le Jeune Pâtre Breton; La Captive; Le Chasseur Danois; Zaïde; La Belle Voyageuse; Aubade; La Mort d'Ophélie. Brigitte Fournier (soprano); Diane Montague, Catherine Robbin (mezzo-soprano); Howard Crook (tenor); Gilles Cachemaille (baritone); Orchestre de l'Opéra de Lyon, John Eliot Gardiner cond. ERA-TO () 45517-2 (65 min).

### Performance: Unusually rewarding Recording: Excellent

The thirteen songs here, comprising all of those that Berlioz orchestrated, make for an uncommonly unified collection. But there is no lack of variety, for each performer brings to his selections thoughtful, elegantly phrased interpretations and impressive singing. Complementing the vocal performances are the sensitive and contemplative conducting of John Eliot Gardiner and the involved playing of the Orchestre de l'Opéra de Lyon, one of France's finest ensembles.

Of special interest is the celebrated cycle of six songs called Les Nuits d'Été (Summer Nights), which is customarily performed by a single female singer but is here shared by a tenor, two mezzos, and a baritone, as was apparently Berlioz's final intention. The only overtly "happy" piece in the cycle is the opening Villanelle; the rest are either pensive

or sorrowful, yet each is presented with a freshness that differentiates it from the others, and all are sung with unaffected and moving simplicity. The seven additional songs are somewhat more varied in mood, although each has an underlying Romantic tristesse. In each case the haunting music is so sharply honed, so deftly orchestrated that every note is instantly recognizable as Berlioz, and one comes away from the recording with a fuller appreciation of his unique gifts. Warmly recommended. R.A.

JANACEK: Sonata, October 1, 1905; On an Overgrown Path; A Recollection; In the Mist. Rudolf Firkusny (piano). RCA O 60147-2-RC (70 min).

Performance: Gritty and eloquent Recording: Sumptuous

JANACEK: Sonata, October 1, 1905; In the Mist; A Recollection; On an Overgrown Path; Three Moravian Dances. Mikhail Rudy (piano). EMI @ CDC-54094-2 (79 min.)

Performance: Sleek Recording: Excellent

However popular Leoš Janáček's piano music became after being used in the film The Unbearable Lightness of Being, his handful of keyboard works tend to be the exclusive property of Czech pianists in general and Rudolf Firkusny in particular. Firkusny has made two superb recordings of them, one in 1972 for Deutsche Grammophon (recently rereleased on CD) and an even better set recorded by RCA in 1989 and recently released. He captures the music's astonishing emotional range in all its transcendent beauty and shocking ugliness, its impulsive rhythms and bold color.

Matching these performances is a tall order for any pianist, even one as richly talented as the young Russian Mikhail

Rudy. Though Firkusny's more richly colored, rhetorical style is idiomatic, Rudy presents a different view in performances that are more suave, less personal, and more attuned to the purely musical aspects of these programmatic, even confessional works. Having lived much of his adult life in France, Rudy tends to view Janáček through the coloristic prism of Ravel, an often appealing though somewhat limited approach.

Rudy's program isn't built as skillfully as Firkusny's RCA set, and neither disc includes the early, inconsequential Zdenka Variations, which does show up in Firkusny's DG recording. In fact, none of the three contains all of Janáček's piano music. But Rudy's is the only one that has the Three Moravian Dances, which show the emotionally overwrought composer in an uncharacteristic light, humorous vein. D.P.S.

**MOZART:** Three Sonatas for Keyboard and Violin; Variations in G Minor (see Best of the Month, page 58)

MOZART: Symphony No. 40, in G Minor (K. 550); Symphony No. 41, in C Major (K. 551, "Jupiter"). Vienna Philharmonic Orchestra, James Levine cond. DEUT-SCHE GRAMMOPHON @ 429 731-2 (77 min).

Performance: Nicely styled Recording: Good

With this release, James Levine and the Vienna Philharmonic complete their traversal of the Mozart symphonies from No. 21 on. This CD of the last two symphonies might be described as replete with repeats. The G Minor, which a quarter-century ago would have run about 25 minutes, here clocks in at nearly 38 minutes, and the "Jupiter," which once took 26 minutes, now runs 38:40. For me the full complement of repeats works fine in the "Jupiter," but when the G Minor's andante is extended to twice the length of the opening movement, it throws things a bit out of proportion.

Nonetheless, these modern-instruments performances come off in fine style, with Levine taking a Bruno Walterish lyrical approach to the G Minor and giving the "Jupiter" a splendidly expansive treatment, moderated by a beguilingly tender slow movement and an easy-gaited menuetto. Sonically, one is aware of a fairly close microphone placement in a large hall, but the audible decay time is not obtrusive. The orchestral performance is fine-grained throughout. D.H.

MUSSORGSKY: Khovanshchina. Aage Haugland (bass), Prince Ivan Khovansky; Vladimir Atlantov (tenor), Prince Andrei Khovansky; Vladimir Popov (tenor), Prince Vasili Golitsyn; Paata Burchuladze (bass), Dosifei; Marjana Lipovšek (mezzo-soprano), Marfa; others. Slovak Philharmonic Choir; Vi-Chorus and Orchestra, Claudio Abbado



cond. DEUTSCHE GRAMMOPHON (1) 429 758-2 three CD's (171 min).

### Performance: Committed Recording: Cavernous

Mussorgsky's Khovanshchina is an opera that seems to loom large on everybody's rehabilitation list. Obviously, there's a great work somewhere in the unfinished, dramaturgically messy material that the composer left behind when he died of alcoholism in 1881. Ever since Rimsky-Korsakov put the opera into performable shape, while also removing some of the music's more interesting peculiarities, impresarios from Serge Diaghilev to James Levine have struggled to make this sprawling drama about mass suicide among seventeenth-century religious fanatics more than endless mumbling about the fate of Mother Russia.

Such endeavors are helped immensely by the 1959 edition of the opera by Dmitri Shostakovich, which was based on the original manuscripts, including a good deal of material Rimsky had discarded. Characters that had little or no reason for coming or going in Rimsky's version make far more sense with Shostakovich's restorations, and sequences that previously seemed vaguely motivated come into focus in his sparer, more harmonically biting orchestration.

Claudio Abbado's new recording of Khovanshchina basically uses the Shostakovich edition, which was first recorded by the Sofia National Opera under Emil Tchakarov in an excellent set for Sony Classical. It is a thrill to hear the opera given the deluxe, Vienna State Opera treatment with a distinguished international cast. There are, however, some textual differences from the previous recording. Abbado has respected the composer's cuts, leaving slightly less music than in the Sony Classical set, and he has used fragments of Mussorgsky's own orchestration wherever possible. And for the ending he chose the orchestration that Stravinsky prepared in 1913 for Diaghilev's production. The Stravinskian harmonies take some getting used to after the profound somberness of Mussorgsky's own style. At first it seems maddeningly anachronistic, but after repeated listening it makes sense. While Mussorgsky would never have used anything like these harmonies, they eloquently convey the combination of spiritual ecstasy and utter horror in the ritual suicide of the final scene.

Interpretively, Abbado is slightly less than ideal in the way he fusses over the score and underscores points that are otherwise perfectly obvious. And the depth of the Vienna State Opera's stage results in a cavernous sound quality at times and some awkward balances in the recording. Neither drawback keeps this set from being the best *Khovanshchina* available, but those who already own the Sony Classical set, which rises well above its provincial origins, probably need not invest in this new one. *D.P.S.*  PROKOFIEV: Piano Concerto No. 2, in G Minor, Op. 16; Piano Concerto No. 3, in C Major, Op. 26. Horacio Gutiérrez (piano); Royal Concertgebouw Orchestra, Neeme Järvi cond. CHANDOS <sup>®</sup> CHAN 8889 (59 min).

Performance: Stunning Recording: Excellent

One of life's lessons some of us must learn over and over again is, "Never assume." Although Boris Berman is recording all the Prokofiev sonatas for Chandos, his disc of the Concertos Nos. 1, 4, and 5 with Neeme Järvi was not the indication I took it to be, in reviewing it last January, that he would complete the concerto cycle. The two more familiar concertos have been given to Horacio Gutiérrez, and there can be no question that Prokofiev is as much his meat as Berman's. These particular works suit him down to the ground. He and Järvi project an image of utter delight in working with each other, and the recording itself is Chandos at its awesome best. I can't recall any previous recording, in fact, that has made quite so strong a case for the Second Concerto (and there have been some fine ones, by the likes of Bolet, Ashkenazy, and Béroff) or a more all-round persuasive case for the popular Third. If it's these two works you're after, you really couldn't do better. R.F.

**REICH:** The Four Sections. London Symphony Orchestra, Michael Tilson Thomas cond. Music for Mallet Instruments, Voices, and Organ. Steve Reich and Musicians. ELEKTRA NONESUCH (19) 79220-2 (43 min).

Performance: Neat Recording: Beautiful

Steve Reich's Young Person's Guide to the Orchestra? The title The Four Sec-

Cecilia Bartoli: fluent Rossini



tions refers to the four sections of the orchestra, the four movements of the piece, and the four harmonic parts into which the movements are divided (suggesting the mystic "golden section" of antiquity). The idea for the piece came from Michael Tilson Thomas, who conducts it here in a recording that was made during the 1988 Reich retrospective in London.

The piece certainly shows off the string, woodwind, and percussion sections of the orchestra-less so the brass—in a highly schematic fashion. Reich has stuck to his minimalist guns even as he has extended his ideas of pattern and structure into orchestraland. The themes are striking fragments of Coplandesque Americana (a little Jewish sounding in one or two places). The treatment is rigorous-like swatches of homespun examined under a microscope. The result is not soft at all but a hard-edged mosaic, one unvielding bit plunked down next to another. The overall effect is colorful, with rhythmic links between the parts, a constantly increasing tempo, and, at the end, a sort of rerun of earlier elements. Not lovable but certainly impressive.

Music for Mallet Instruments, Voices, and Organ is, by contrast, classic Reich from the mid-Seventies—pulsing, mellifluous, even lovable. I like Reich better when he writes for his own ensemble than for the big orchestras. Either way, however, everything here is neatly played and beautifully recorded. E.S.

ROSSINI: La Pastorella; Beltà Crudele; Il Trovatore; La Regata Veneziana; Mi Lagnerò Tacendo; Il Risentimento; La Grande Coquette; Ariette à l'Ancienne; L'Orpheline du Tyrol; La Légende de Marguerite; Nizza; L'Âme Délaissée, Canzonette Spagnuola, En Medio a Mis Colores; Cantata, Giovanna d'Arco. Cecilia Bartoli (mezzo-soprano); Charles Spencer (piano). LONDON @ 430 518-2 (71 min).

Performance: Delightful Recording: Clear, well-balanced

This graceful recital album, which includes both the well-known (*La Pastorella* and *La Regata Veneziana*) and the little-known (the cantata *Giovanna d'Arco*), has much to recommend it. Cecilia Bartoli's singing is fluid, finely phrased, stylish, and accurate. The wellengineered recording maintains a happy balance between voice and piano, and the accompaniments are sympathetically played by Charles Spencer. The songs themselves, which span nearly twenty years of the composer's career, are appealing, if innocent of emotional depth.

Of particular interest are the five treatments of Metastasio's poem *Mi Lagnerò Tacendo*, each different and affecting in its individual manner (Rossini wrote nearly fifty settings of this poem). Other highlights are *La Grande Coquette*, an amusing account of a lady not to be taken lightly; *L'Orpheline du Tyrol*, a sweetsad song of loneliness; the spirited



Nizza, in praise of the sun-swept city of Nice; and, finally, the cantata Giovanna d'Arco, which is musically the most searching offering here. R.A.

TCHAIKOVSKY: Swan Lake, Op. 20. Orchestra of the Royal Opera House, Covent Garden, Mark Ermler cond. ROYAL OPERA HOUSE <sup>(1)</sup> ROH 301/3 three CD's (153 min). Excerpts on ROH 001 (69 min).

TCHAIKOVSKY: The Sleeping Beauty, Op. 66. Royal Opera House Orchestra, Mark Ermler cond. ROYAL OPERA HOUSE © ROH 306/8 three CD's (173 min). Excerpts on ROH 003 (73 min).

TCHAIKOVSKY: The Nutcracker, Op. 71. ARENSKY: Variations on a Theme by Tchaikovsky, Op. 35a. Royal Opera



**Conductor Mark Ermler** 

House Orchestra, Mark Ermler cond. ROYAL OPERA HOUSE © ROH 304/5 two CD's (106 min). *Nutcracker* excerpts on ROH 002 (55 min).

Performances: Brilliantly idiomatic Recordings: Sumptuous

This first Royal Opera House Records release, produced by Conifer Records, comprises nothing less than complete recordings of the three Tchaikovksy ballets, all conducted by Mark Ermler. All are more than impressive.

Ermler, who conducted at the Bolshoi Theater in Moscow for more than twenty-five years before being named principal guest conductor of Britain's Royal Ballet in 1985, is obviously at home in this repertory, but he is no mere *routinier*. Every phrase breathes life and suggests self-renewing enthusiasm and affection on his part, and it would be hard to imagine any orchestra anywhere sounding more brilliant than his players do in this music.

Ermler presents every note of Swan Lake and The Sleeping Beauty, and his tempos, apparently unchanged from those he uses in actual dance perfor-

mances, tend to be on the expansive side in several numbers. (Animation is never wanting, though, and there are sections that dazzle with their velocity.) As a result, both of these works take up three very well-filled discs, while every other current CD recording of Swan Lake fits snugly on two, as do two versions of The Sleeping Beauty. The economies of other recorded versions are effected in two ways-first, by judicious omissions, and second, by an approach that makes the music flow like a symphonic poem or "program symphony." This approach generally involves brisker tempos in, say, the big Act I waltz in Swan Lake and the "Panorama" in Sleeping Beauty, and many listeners will be more comfortable with it. But just as many others, perhaps, may prefer tempos that enable them to close their eyes and see the dancers in the staged versions dear to their memories; this, among other virtues, is what Ermler offers in those two ballets.

His Nutcracker is much closer to the norm (I would only have wished for a little more lilt from the children's chorus in the "Waltz of the Snowflakes"). This work, unlike its predecessors, is actually written in a way that seems to leave less room for variances—and, of course, there is no problem at all in accommodating it in full on two discs. ROH, in fact, has generously included an additional work in this set, Anton Arensky's once popular Variations on a Theme by Tchaikovsky, for string orchestra, played with appropriate warmth.

The sound quality is a big plus throughout these sets. The recordings were produced by Michael Woolcock, remembered for the stunning Maazel/ Cleveland recording of Prokofiev's *Romeo and Juliet* on London. The only disappointing element is the documentation—pithy synopses and no more. *R.F.* 

VIVALDI: La Stravaganza, Op. 4. Simon Standage (violin); the English Concert, Trevor Pinnock cond. DEUTSCHE GRAM-MOPHON ARCHIV (1) 429 753-2 two discs (99 min).

Performance: Powerful Recording: Very good

It was not very long ago (1987) that L'Oiseau-Lyre brought out its splendid recording of La Stravaganza by Christopher Hogwood and the Academy of Ancient Music, with Monica Huggett as soloist. The arrival of this new set on Deutsche Grammophon Archiv provided an occasion to hear all the music twice-a not at all unwelcome experience, but an impossibly frustrating one for anyone trying to decide between the two sets. Both were most thoughtfully prepared, observing the same general conventions; both conductors alternate between harpsichord and organ continuo in the various individual concertos; and, more to the point, both teams exude the most infectious vitality, a sense of unrestrained joy in bringing these pieces to life. There are some very pronounced

differences—hardly a movement in the cycle is given the same way in both sets—but these only tend to persuade the listener that both sets are indispensable.

In general, Hogwood is the more expansive of the two conductors, showing a greater sense of warmth and intimacy where the music allows, and Huggett, his soloist, makes more of the opportunities for expressiveness in the slow movements. Pinnock is the more extroverted, conveying a driving energy in some of the fast movements that leaves the listener breathless but definitely smiling, and his soloist, Simon Standage, seems to relish this dashing approach. The very opening of the first concerto in the two sets will illustrate the difference: Hogwood is enlivening, but Pinnock is a powerhouse, setting up a near-bacchanalian excitement. In the next concerto, though, it's Hogwood, with his crisper phrasing and more pointed rhythm, who sends out more sparks. In Nos. 6, 8, and 12 Pinnock and Co. are downright irresistible, for the same qualities they show in No. 1, while Hogwood and Co. are just as irresistible in just as many concertos for the same qualities they show in No. 2 (No. 4, in A Minor, is a clear winner for them). Moreover, Hogwood may have more to reveal to listeners who regard Vivaldi's slow movements as little more than bland interludes between eruptions of exuberance.

Does anyone really need two recordings of Vivaldi's Op. 4? Maybe not, and you can't go wrong with either set. But the two do seem to complement rather than compete with each other, and neither leaves anything to be desired in terms of vivid sound. *R.F.* 

### Collection

AMERICAN ELEGIES. Ives: The Unanswered Question; Five Songs (arr. Adams). Marshall: Fog Tropes. Feldman: Madame Press Died Last Week at Ninety. Adams: Eros Piano. Diamond: Elegy in Memory of Maurice Ravel. Dawn Upshaw (soprano, in Ives songs); Paul Crossley (piano, in Adams); Orchestra of St. Luke's, John Adams cond. NONE-SUCH @ 79249-2 (49 min), @ 79249-4.

Performance: Moving Recording: Mostly beautiful

This recording was inspired by a television program about John F. Kennedy that used lves's The Unanswered Question as background music for the funeral. Morton Feldman's piece was written in memory of his piano teacher, and John Adams's Eros Piano was, in turn, written on Feldman's death. Ingram Marshall's striking Fog Tropes, for brass set against a tape of foghorns and crying gulls, is mournful in a more generalized sort of way. It all sort of adds up to a totality that is somewhat odd but mostly quite beautiful. Not exactly a jolly listen but PHOTO: thoughtful and often moving. E.S.

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wo of the most successful labels of the LP era, Mercury and Vox, both disappeared into the collector'sitem category some time ago. Now they are being brought back on CD, by Philips and the Moss Music Group, respectively, with all their original impact and then some—and at prices that will make them all the more appealing to today's collectors.

Both series began in the early Fifties. Mercury made music lovers of audiophiles and audiophiles of music lovers with its Living Presence recordings. Howard Hanson conducted American music, Frederick Fennell and the East-



**Pianist Eugene List** 

man Wind Ensemble revolutionized the way the concert band was regarded, and such conductors as Antal Dorati, Rafael Kubelik, and Paul Paray brought similar authority to an imaginative orchestral repertory—all enhanced by exceptionally vivid sound that was itself a large part of the excitement.

Five years ago Philips brought out a handful of CD reissues on the Mercury label, among them Dorati's matchless account of Respighi's three suites of Ancient Airs and Dances with the Philharmonia Hungarica. Those discs were hugely disappointing-apparently they were not made from the original master tapes but from the doctored ones used for Mercury's short-lived Golden Imports LP series-and the project was stopped dead in its tracks after a single release. In 1988 Philips brought in the key individual from the original Living Presence operation to do it right, Wilma Cozart Fine, who was recording director for the original LP series from its inception (when STEREO REVIEW critic David Hall was Mercury's musical director) until 1964 (after which time Harold Lawrence continued the series). Fine was given Dennis Drake (now PolyGram's vice president for studio and technical operations) as her associate, and they were given everything they felt they needed in the way of resources and equipment.

Fine and Drake not only rounded up the original master tapes but found and reconditioned the actual tube amplifiers, tape decks, and 35mm film machines used for the original recording and mastering. A little more than two years later, last fall, they brought out the first release: ten generously filled CD's with a suggested list price of \$9.99. Significantly, the rubric "Living Presence," which did not appear on the ill-fated 1985 discs, is on the new ones, and it is fully justified, for the sound is indistinguishable from that of the original LP's. Indistinguishable, that is, except for the advantages of the new medium: freedom from surface noise and greater ease in handling the wide dynamic range of the original recordings.

Standout items in this initial batch, all prime stereo recordings that had not been on CD before, are the disc on which Hanson conducts his First Symphony ("Nordic"), his Second Symphony ("Romantic"), and his choral Song of Democracy (432 008-2); the one on which Paray conducts the Detroit Symphony in Ibert's Escales and five works by Ravel, including a knockout performance of La Valse (432 003-2); and four Dorati discs with various orchestras. One of the Dorati CD's has works of Bartók and Kodály, including the latter's Háry János Suite and two sets of orchestral dances (432 005-2); another is a Respighi package of The Birds, Brazilian Impressions, The Pines of Rome, and Fountains of Rome (432 007-2); the third has music of Schoenberg, Berg, and Webern, with the soprano Helga Pilarczyk in the Lulu Suite (432 006-2); and the last holds concerted works by Dvořák, Bruch, and Tchaikovsky with the cellist Janos Starker (432 001-2). The second batch should be in the stores by now.

"Vox Box" was the name the late George H. de Mendelssohn-Bartholdy gave his budget-price sets of three LP's, a concept he introduced not long after he created the Vox label. It was a natural format for Baroque concertos by the dozen, complete sets of Haydn quartets. the Schumann and Rachmaninoff symphonies, all of Gershwin's concert works, and the Complete Piano Music of Everybody. Among the performers were the pianists Alfred Brendel, Walter Klien, Peter Frankl, and Abbey Simon; the conductors Stanislaw Skrowaczewski, Leonard Slatkin, Maurice Abravanel, and Jerzy Semkow; and numerous ensembles in both Europe and America. The new CD reissues put the contents of the original three LP's that were in each set on two compact discs, at a suggested list price of only \$11.99.

Most Vox recordings in the mid-Sev-

enties used the QS quadraphonic stereo system, which was not really as compatible as it was supposed to be with twochannel playback. When Alan Silver leased some of that material for his In-Sync cassettes, however, Marc Aubort, who had produced many of the recordings, mixed the four channels down into two so effectively that some of them could pass for new digital productions. This process was used subsequently in transferring material to early Moss CD's and now is being used again for the new Vox Boxes.

Not all the material in the twenty Vox Boxes of the initial release is of such high quality sonically, but there is nothing that does not sound appreciably better than it did on LP. Eugene List's "Gottschalk Festival" (CDX 5009) is a unique gem. List not only performed as pianist but dug up much of the material and commissioned orchestrations of the "symphonic" pieces and a 13-minute "opera"; only his spoken remarks on the original LP's are missing from the reissue. Harold Farberman's performances of eight symphonies by Michael Haydn (CDX 5020) add up to one of the most attractive items on the list, both musically and sonically.

Other fine buys, in an assortment ranging from Gregorian chant to American choral songs, are Abbey Simon's account of Ravel's piano music (CDX 5012); the set of all of Dvořák's concerted works played by Zara Nelsova (cello), Ruggiero Ricci (violin), and Rudolf Firkusny (piano), with Walter Susskind and the Saint Louis Symphony (CDX 5015); and Leonard Slatkin's set of Prokofiev film music with the same orchestra (CDX 5021), in which the spoken narration is deleted from Ivan the Terrible but both Alexander Nevsky and the Lieutenant Kijé Suite are the same as in the LP version. **Richard Freed** 



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by Maryann Saltser & **Robert Ripps** 

HE violinist Nadja Salerno-Sonnenberg, whose EMI/Angel recording of Vivaldi's Four Seasons continues to be a best-seller, recently completed recordings of violin concertos by Shostakoduo is currently represented on CD by a recording of the Brahms and Franck violin sonatas on EMI/Angel, for which Salerno-Sonnenberg records exclusively.

LSO recording for EMI/ Angel are Skitch Henderson and his New York Pops orchestra. They signed a fiveyear, five-record deal with the



Nadja Salerno-Sonnenberg

**YAU** vich and Barber with the London Symphony conducted by L.M. Maxim Shostakovich. In concert, she has been performing duo recitals with the pianist Cécile Licad, a friend and collaborator since their days together at the Curtis Institute of Music in Philadelphia. The



Henderson: Berlin to Bernstein

label last year, and the first CD, "From Berlin to Bern-stein," has just been released here (it was available in Japan last December when the Pops toured there). It features musical tributes to two composers who were long-time friends of Henderson, Irving Berlin and Leonard Bernstein, along with selections by Jimmy van Heusen, Hoagy Carmichael. and others. When Henderson's not busy making guest appearances with orchestras all over the country, he and the New York Pops offer concerts in their home base, Carnegie Hall.

ORE than just kid stuff: M Walt Disney Records scheduled for May 28 release "For Our Children," a starstudded compilation benefiting the Pediatric AIDS Foundation. The album features a mix of traditional and original

children's songs performed by some of today's biggest recording artists, including Bruce Springsteen, Paul Mc-Cartney, Bette Midler, James Taylor, Debbie Gibson, Paula Abdul, Brian Wilson, and Sting. Selections range from Bob Dylan's version of This Old Man to Little Richard's interpretation of Itsy Bitsy Spider to Barbra Streisand's A Child Is Born. Other highlights are a duet by Jackson Browne and Jennifer Warnes, Springsteen's Chicken Lips and Lizard Hips, and The Pacifier, a new instrumental composition by Elton John.

The Pediatric AIDS Foundation was co-founded by Elizabeth Glaser (wife of actor/director Paul Michael Glaser) in 1988, after her daughter Ariel died of the disease at the age of seven.

HE 1991 Avery Fisher Prize was awarded to the pianist Yefim Bronfman in a ceremony at Lincoln Center on March 4 that marked not only the fifteenth anniversary of the Avery Fisher Artist Program but the eighty-fifth birthday of the renowned philanthropist who endowed it. The Fisher Prize recognizes American solo instrumentalists for outstanding ability and excep-



**Bronfman and Fisher** 

and Yo-Yo Ma. Bronfman records exclusively for Sony Classical. His next recordings, to be released this fall, are Mussorgsky's Pictures at an Exhibition, with works by Tchaikovsky and Stravinsky, and Rachmaninoff's Second and Third Concertos.

N unlikely group of pop stars got together recently to pay tribute to the Grateful Dead. "Deadicated" (Arista) is a collection of classic Dead songs, including Truckin', Uncle John's Band, and Friend of the Devil, reinterpreted in a wide range of styles by such artists as Elvis Costello, Suzanne Vega, Los Lobos, Midnight Oil, Dwight Yoakam, Jane's Addiction, and Bruce Hornsby. The album was designed to showcase the Dead's superior songwriting, too often overlooked amidst all the tie-dye. Horns-



tional contributions to the

world of music. The Russian-

born Bronfman, an American

citizen since 1989, joins such

distinguished past winners as

Murray Perahia, André Watts,



**WALT DISNEY RECORD:** 

Taylor: rockin' for the kids

by, who recently served as temporary pianist for the band, has said, "These guys are great songwriters, and there are a lot of people who feel that way." Proceeds from the sale of

"Deadicated" will benefit the Rainforest Action Network and Cultural Survival.

S ONY CLASSICAL has released a recording of the **Berlin Philharmonic**'s historic joint concert with the Israel **Philharmonic** in Tel Aviv on April 18, 1990. Climaxing the German orchestra's first tour of Israel, the concert was conducted by **Zubin Mehta**, who is the Israeli orchestra's music director. The program included Ravel's *La Valse* and Beethoven's Fifth Symphony, and it began with *Psalm* by

SONY CLASSICAL



Berlin to Tel Aviv

Paul Ben-Haim, who left his native Germany in 1933 to settle in what was then Palestine. The work is inspired by a psalm in which King David prays to God to bring peace to Israel and the entire world. The concert recording is available on CD and cassette, and a videodisc version will follow.

ames Brown should certainly be feeling good. The Godfather of Soul was recently granted parole after serving two years of a six-year prison sentence for aggravated assault. To celebrate his release, PolyGram has re-leased "Star Time," a four-CD boxed set spanning his entire thirty-five year career. The seventy-two tracks include all of Brown's major hits as well as previously unreleased material, including the original, unedited version of Papa's Got a Brand New Bag, a live medley from a

1971 Paris show featuring Bootsy Collins on bass, and new stereo mixes of classics like Super Bad and Soul Power. The accompanying sixtyfour-page booklet contains rare photos, a complete discography, and an introduction by Brown himself.

More than half of the material in "Star Time" has never been on CD before, and plans are already under way to reissue some of Brown's long outof-print albums. In the meantime, the Hardest Working Man in Show Business, who was seen last month in a payper-view cable-TV special, plans to return to the recording studio, with a new album expected by fall.

HE first new opera recording on RCA Victor Red Seal in more than a decade is Mozart's The Marriage of Figaro conducted by Colin Davis, released last month. Upcoming releases, all taped in Munich in conjunction with the Bavarian Radio, include Verdi's Falstaff, also conducted by Davis; Puccini's La Fanciulla del West with Eva Marton, conducted by Leonard Slatkin; and Massenet's comic opera Chérubin with Frederica von Stade, Samuel Ramey, June Anderson, and Dawn Upshaw.

OT summer nights provide the perfect setting for the cool sounds of "Jazz Aspen," a new jazz festival scheduled for June 21-23 in

Brown: a brand-new bag



Yellowjackets: jazz for the trees

Aspen, Colorado. The threeday extravaganza will benefit Global ReLeaf, a national tree-planting program of the American Forestry Association. According to festival producer James Horowitz, there couldn't be a more suitable beneficiary, because "the positive spirit of planting connects naturally with the positive spirit from which jazz springs." Headliners include Nancy Wilson, Tuck & Patti, the Modern Jazz Quartet, the Original Ramsey Lewis Trio with Stanley Turrentine, and the Yellowjackets, whose latest recording, the ecologically minded "Greenbouse," reached No. 1 on *Billboard*'s contemporaryjazz chart. Free daytime concerts will showcase upand-coming musicians. Broadcast and recording plans for the festival are under discussion.

Warner RACENOTES G Home Video has just released Prince's 1990 film Graffiti Bridge (described by some critics as the worst movie musical of all time) on tape and laserdisc. ... Dorian Recordings has announced a threeyear agreement to record the Dallas Symphony led by its music director, Eduardo Mata. The first sessions, held in February in Dallas's newly inaugurated Eugene McDermott Hall, featured Stravinsky's Rite of Spring. This is Dorian's first foray into the symphonic repertory. . . . Impulse!, the re-activated MCA jazz label, is celebrating its thirtieth anniversary by releasing doubledisc CD retrospectives of several of its artists, including John Coltrane, whose "Live in Japan" album is augmented by a 57-minute version of My Favorite Things.





# Architectural Loudspeakers

PEAKERS built into walls and ceilings have been around since the dawn of the electroacoustical era, and for many of us they come burdened with some pretty cheerless associations, such as grim institutional settings and relentless elevator music. Nevertheless, they did enjoy a fleeting hi-fi vogue in the Fifties, especially when an important member of the household ruled in favor of people rather than big boxes in the living room. But then speaker boxes became manageably small, and the architectural loudspeaker faded fast thereafter.

Now it is back, with a vengeance, and with a difference. Formerly just a compromise in a multipurpose environment, the architectural speaker is today being suggested as a superior reproducer. Some very serious and knowledgeable people believe that, with a given set of drivers and crossover characteristics, you might well be better off in the wall than in a box.

This near-heretical idea seems to have arisen through a grass-roots movement. In recent years, consumers planning multiroom installations began considering in-wall speakers for rooms where merely adequate sound was needed, often adapting the plate speakers they knew from car audio. Observant dealers, realizing that a familiar product was being redefined, duly advised manufacturers, and the supply side got interested. During this

# THE HIGH END

### by Ralph Hodges

process, more and more people became aware that such modest devices could often yield more satisfaction than the ambitious free-standing systems in the main listening area.

There are good, established reasons why a built-in speaker can have the edge on a free-standing, enclosed one. Andy Petite of Boston Acoustics points to diffraction, secondary emanations from cabinet edges that acoustically interfere with the primary output of the drivers, roughening the frequency response, and smear arrival times at the listening position. Diffraction is virtually impossible to prevent with conventional enclosures, whereas it almost ceases to exist with flushmount wall speakers.

Roy Allison of Allison Acoustics, a company deeply concerned with the effects of reflected sound on loudspeaker response, notes another unique benefit: If you integrate a speaker driver with one of a room's acoustical boundaries (a wall), that boundary effectively disappears, immensely simplifying the problem of speaker-room interface. "We have a program that can show you what happens to a speaker when you put it anywhere in a room at all," Allison says. "If you reduce the distance from a boundary to perhaps one-thousandth [of a room's axial dimension], the curve smooths right out. So in-wall installation is the way to go, if you can eliminate the structural problems of the wall itself."

These structural problems are a nontrivial concern. Nobody makes speaker enclosures of gypsum board lightly braced by 2x4's; rap your knuckles on a wall and hear why. Bass reproduction will be the most adversely affected, and there are two ways around the difficulties: Build a proper woofer enclosure within the wall (most easily managed during new construction), or use a free-standing woofer module. In the latter case, the lowest crossover frequency that doesn't let the wall get involved in making sound will be best, although determining that frequency may involve experimentation.

Other questions arise about architectural loudspeakers as soon as the matter is given some thought. How, for example, do you experiment with speaker placement? You can't move holes in the wall around. You can, however, attempt some trials with conventional box speakers before you cut the holes and reasonably expect the results with wall installation to be even better. Furthermore, many authorities find wall-speaker placement less critical than the placement of freestanding speakers, as long as spacing is appropriate for a good stereo image and a respectful distance from boundary junctions is maintained.

How do you audition architectural speakers in the store? By having the dealer cut holes in his wall and mount them, Petite replies, but your dealer may not be so obliging. Yet buying such speakers unheard entails risk. John Bishop of a/d/s/ has identified three distinct types of architecturalspeaker supplier: 1) the legitimate speaker manufacturer who has a large, enthusiastic following in the U.S.; 2) the legitimate speaker manufacturer who doesn't have a following but who hopes that a new product category will boost his chances; and 3) the illegitimate whoever who has never designed a speaker but recognizes opportunity. The risk of getting involved with the last type of supplier is all the greater because so many architectural speakers are similar in appearance, designed to look more like a wall than a triumph of audio engineering.

Is there a place for architectural loudspeakers in the high-end enthusiast's scope of interest? Perhaps not a major place, but I agree with Roy Allison that there is an important one. A properly equipped dedicated media room calls for some seven loudspeaker systems, and seven channels using large, enclosed systems will be neither practical nor acoustically desirable in most such rooms. The speakers supplementing the front channels can and probably should be less muscular, but they must be just as revealing and neutrally balanced over the frequency ranges they are intended to reproduce. Here is a role the in-wall speaker of good quality can be expected to excel in, while still leaving some room for things other than cabinets and cables. That should be enough-until someone comes up with the properly configured in-wall electrostatic speaker that will leave us all gasping. 



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