

Stereo Review

SEPTEMBER 1996 • US \$3.50 • CANADA \$4.50 • UK £2.20

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SURROUND-SOUNDERS

Listening Tests of 3
Speaker Systems
for Music and Movies

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A Guide to Choosing
and Installing
"Invisible" Speakers

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Sexy See-Thrus?
Speaker Designers Say
Form Follows Function



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“Ensemble IV Is One Of The Top Bargains In Today’s Market. Hearing Is Believing!”

Stereo Review

“Much Better Than
The Other Systems
We’ve Tried – At Half
The Price Of Many!”
Home Theater
magazine



This Powerful Home Theater System With 5 Satellites, Subwoofer & Pioneer® Dolby® Pro Logic® Receiver Will Change How You Watch TV Forever!

It's The Country's Best Value In Surround Sound—
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There are lots of stereo stores that can sell you a cheap Pro Logic sound system – or sell you a receiver with “free” home theater speakers.

But do yourself a favor, and listen before you leap. Most systems in this price range don't approach this one's performance.

The Pioneer VSX305 Receiver.

Just a few years ago, this receiver would have cost hundreds more. It features:

- Even power output – 60 watts each to left, center, right & surround channels.
- Discrete output amplifier design for a clean, undistorted sound.
- Dolby Surround Pro Logic, and simulated surround for non-Dolby sources.
- 5 audio inputs, 1 video input & 1 video output – the heart of an A/V system..
- A system remote control.

Ensemble® IV Home Theater Speaker System By Henry Kloss.

The Cambridge SoundWorks® Ensemble IV Home Theater system was designed by Audio Hall of Fame member Henry Kloss (founder of AR, KLH & Advent). It consists of 5 magnetically shielded satellite speakers and a compact subwoofer. It has a natural, wide-range, accurate sound with very smooth octave-to-octave tonal balance and precise stereo imaging. And it will fit into any room.

“Ensemble IV produces a level of sound quality that is so much bigger and better than what you'd expect from such a tiny, inexpensive system that it's almost ridiculous. There's a coherence and rightness to the sound that we just haven't heard from anything this affordable. In fact, we've heard far more expensive home theater speakers that don't hold a candle to this rig.”

Home Theater Technology

Pioneer VSX305 Dolby Pro Logic Receiver and Ensemble IV Home Theater System.

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A photograph of three men dressed as cowboys, standing in a barn. They are wearing cowboy hats and work clothes. The man on the left is holding a coiled rope. The man in the middle is looking towards the right. The man on the right is holding a long object, possibly a tool or a piece of equipment. The background is a wooden wall with a window.

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– VIDEO MAGAZINE

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*“Since there aren't
any faults that
we can hear,
the standard in
loudspeaker design
may well be at
hand... the bench-
mark of modern
engineering.”*

– THE INNER EAR REPORT

channels, subwoofers and satellite surrounds. No matter where you are in the room, with Mirage Bipolar you're utterly immersed in the most spacious, three-dimensional music and sound effects imaginable.

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Stereo Review

INCORPORATING HIGH FIDELITY

September 1996

The home-theater speaker systems from M&K, B&W, and Cambridge SoundWorks (shown top to bottom, respectively) that were compared by an audiophile listening panel for our surround-sound shootout; see page 66 for test details and results.

Photograph by Jook P. Leung

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A few speakers guaranteed to catch your eye *and* your ear

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95 Rockin' in Cleveland

A visit to the Rock and Roll Hall of Fame and Museum on its first anniversary

BY IAN G. MASTERS

101 Best Recordings of the Month

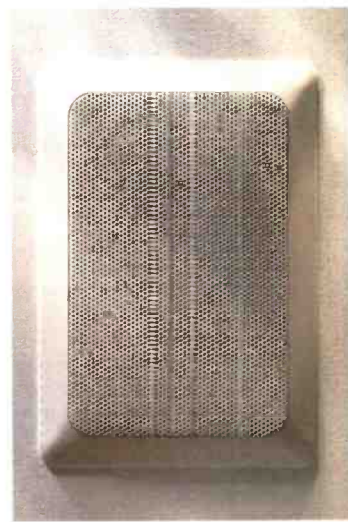
Pete Droge and the Sinners at the door, Pierre Boulez's thrilling Bartok, loud music and big laughs with Webb Wilder, and a Shostakovich Eighth Symphony from Valery Gergiev and the Kirov Orchestra



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BULLETIN

BY BOB ANKOSKO & WILLIAM LIVINGSTONE

DVD DELAY

As we go to press it appears unlikely that the first wave of DVD movie players will hit store shelves in September as had been promised by RCA, Toshiba, and other manufacturers. There was as yet no agreement on a copy-protection system for DVD players and the next generation of super-high-capacity DVD-ROM drives for computers. Movie companies are reluctant to release films in the CD-size DVD format without a system in place to limit some forms of copying and prevent others. Many industry insiders even expressed doubt whether DVD would make it to market this year at all.

Still, at a press event announcing the first U.S.-based DVD pressing plant, expected to begin production next spring, Panasonic officials said they believe 350,000 DVD players could reach store shelves by the end of the year. Stay tuned for a full report on DVD technology next month.

BOOMERS

Hayley Mills, Lesley Gore, and Marianne Faithfull are on the leading edge of Baby Boomers who turn 50 this year, which qualifies them for membership in the American Association of Retired Persons (AARP) whether they're retired or not. A recent issue of AARP's *Modern Maturity* magazine also congratulated Cher, pianist André Watts, and Barry Manilow on reaching the half-century mark. Others born in 1946 include Linda Ronstadt, Donovan, Al Green, José Carreras, Jimmy Buffett, and — can we still call her a punk? — Patti Smith.

A/V DIGEST

DTS Technology of Westlake Village, CA, says that a dozen audio companies — including Harman Kardon/Citation, Mondial

Designs, Counterpoint, B&K Components, and Rotel — have "committed to license and implement" DTS Digital Surround decoding circuitry in forthcoming A/V surround-sound processors. Like the Dolby Digital (AC-3) format chosen as the standard for soundtracks released in the DVD format and now available on about fifty laserdiscs, the incompatible DTS Digital Surround format delivers six discrete channels of digital audio. . . . Sony's first PC's, which were scheduled to begin hitting store shelves in late August, will include a 3-D graphical interface called VAIO (for Video Audio Integrated Operation) that's said to provide intuitive access to A/V capabilities.

MUSIC NOTES

Michael Jackson begins the "HIStory" tour in September in Prague, Czechoslovakia. Named for his album released in 1995, it is his first since he withdrew from the "Dangerous" tour in 1993. . . . Highlights from the 8-hour gala performance last April honoring conductor James Levine's twenty-fifth anniversary with the Metropolitan Opera will be released on CD by Deutsche Grammophon in September. . . . The Fugees' debut album, "The Score," was simultaneously certified Gold, Platinum, and double Platinum. . . . The saxophone is 150 years old. The Belgian instrument maker Adolphe Sax patented it in 1846.

THE WINNERS ARE . . .

Joni Mitchell and French conductor/composer Pierre Boulez split Sweden's Polar Music Prize (\$150,000). . . . Liza Minnelli won the third annual Liberace Legend Award. . . . George Walker, 73, became the first African-American to win the Pulitzer Prize in music, with *Lilacs*, a 16-minute piece for soprano and orchestra.



HYDRO SOUND FOR HOME THEATER?

We've seen a lot of bizarre speaker designs over the years, but we've never come across one quite like the HydroSonic Interactive Bass Sound System from Sound Related Technologies (SRT) of Virginia Beach. Engineer John Alton, Jr. has created one monster of a subwoofer that uses water (!) to extend response down into the infrasonic range. He discovered that adding a compartment with a water-filled vinyl bladder (we're talkin' waterbeds here) to a conventional two-chamber sub smoothed and bolstered response down to a room-shaking "6.875 Hz." The woofers induce vibrations in the water that are transferred to the floor.

SRT recently completed a home version of the system, which was developed for theaters, amusement-park rides, and other "applications requiring controlled vibration." The home SRT 12H is a 40-inch-tall rectangular wooden structure with five chambers. A ported chamber in the middle supports two 12-inch woofers, one firing up into a compartment with air holes leading to the top water chamber and one firing down into a chamber feeding the bottom water compartment. Price for the 125-pound beast: \$3,395. A \$3,000 version with 10-inch drivers in a lighted, clear-acrylic enclosure is in the works.

FACTS FOR FREE

The Consumer Electronics Manufacturers Association (CEMA) reports that in 1995 sales of home-theater components rose 10 percent, to \$8 billion, and sales of add-on and upgrade car stereo gear hit an all-time high, \$1.93 billion. These and

other fascinating facts can be found in a 122-page softbound book, *The Year in Consumer Electronics 1995*. For a free copy send a 6 x 9-inch self-addressed envelope stamped with \$1.93 postage to CEMA Communications Dept., 2500 Wilson Blvd., Arlington, VA 22201-3834. □

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Cliffhanger	*1149301
Bridge On The River Kwai (Restored)	*1143809
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Goodfellas	*0969808
Immortal Beloved	*1372309
The Odd Couple	*1460807
Clueless	*1462506
The Wizard Of Oz	0001404
Ferris Bueller's Day Off	*0427302
The Net	*1469907
Casper (The Movie)	*1427905
The Fugitive	*1197706
The Hunt For Red October	*0825000

The Empire Strikes Back (THX)	* 415801
Star Wars (THX)	**416007
Clive Barker's Lord Of Illusions	**471804
A Clockwork Orange	**356005
Jaws	*0844605
First Knight	**460104
Congo	*453604
Jade	*483908
Living In Oblivion	**484005
Something To Talk About	**478502
Clear And Present Danger	**326305
The Wild Bunch (The Dir.'s Cut)	*1388008
All About Eve (Remastered)	1491000
Fair Game	*1491505
The Invaders	1491406
White Man's Burden	*1502905
E.T.: The Extra-Terrestrial	*0681106
Interview With The Vampire	*1364405
The Abyss	*0881102

Close Encounters Of The Third Kind (Special Edition)	*1273002
Aliens (THX)	*1402601
Allen (THX)	*1402502
Desperado	*1485101
Hackers	*1482900
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American Gigolo	0203000
Cocoon	*1469808
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Above Suspicion (1995)	1483700
Under Siege	*1077908
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The Usual Suspects	*1479401
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Ace Ventura: When Nature Calls	*1490309

NEW RELEASES

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White Zombie (1932)	1944206
Wild Bill	1503002*
Under Siege 2: Dark Territory	1483007*

Outbreak	*1389501
Beyond Rangoon	*1489707
The Brothers McMullen	*1495902
How To Make An American Quilt	*1921204
The Tuskegee Alirmen	1935501
The Fisher King	0687103
Ghost	*0826008
Bram Stoker's Dracula	*1102904
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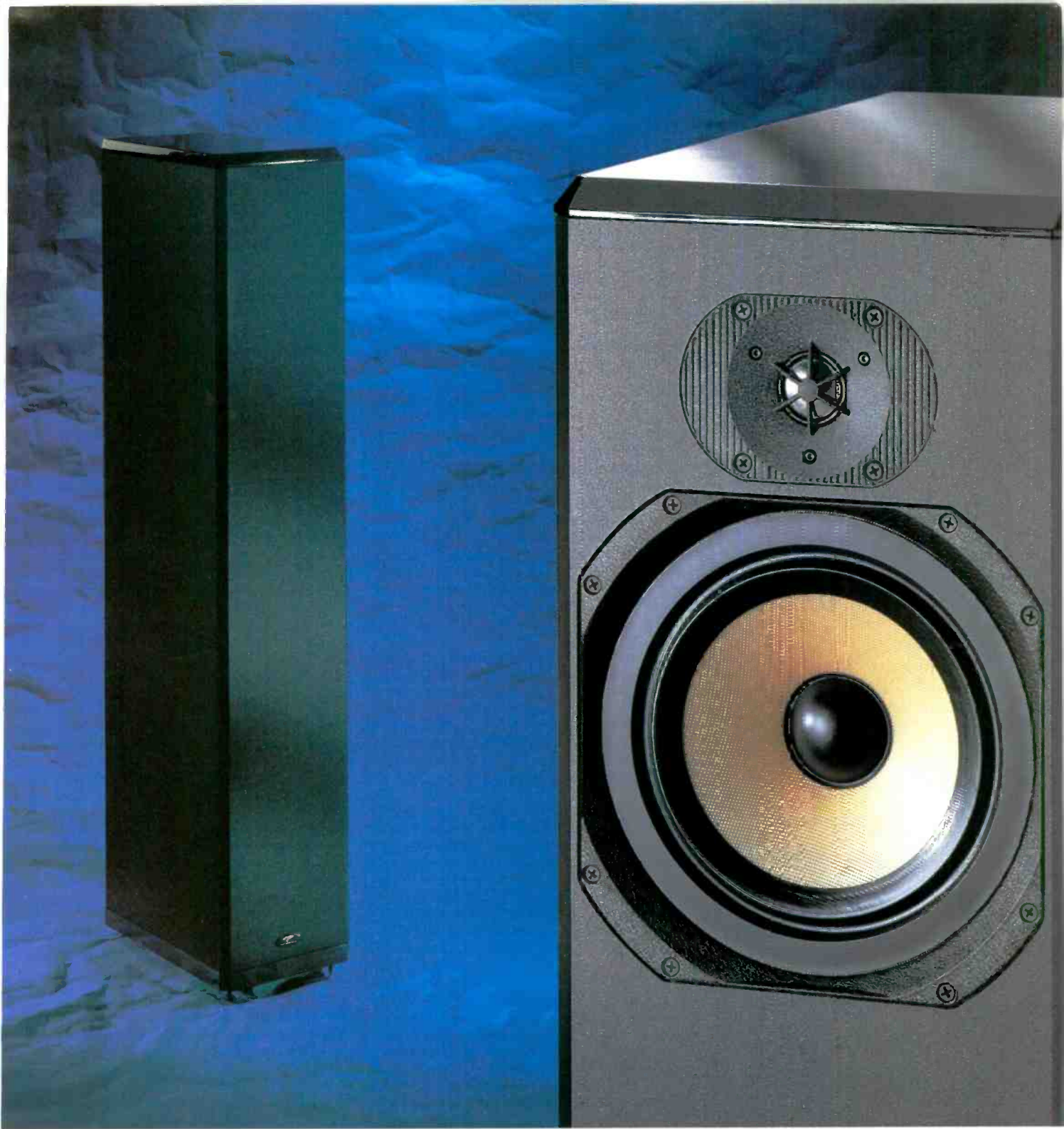
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Stereo Review

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LETTERS

DVD vs. Laserdisc

At my favorite high-end store, I was treated to selections from laserdiscs of *Batman Returns*, *True Lies*, and *Clear and Present Danger*. I was blown away! But when I asked about DVD players, the salesman told me that the format has a major problem with picture quality because of the data compression used. He said all the hoopla about a better picture than laserdisc was only hype. Can you set the picture straight?

JIM VOZWORTH
Toronto, Ontario

I'm confused. Yours and other cutting-edge technology magazines have gotten me hyped about the fantastic new DVD format. Now, however, I've heard that the digital data-compression technology (MPEG-2) isn't up to snuff for "some movies." Supposedly there's a problem with digital artifacts when the scene changes quickly (read: action films). I've seen this problem with the \$4,000 digital cameras when I pan around a complex room.

JIM HEALE
Seattle, WA

Picture quality has been excellent in the DVD demos we've seen, and digital artifacts, while occasionally apparent, have been minor compared with the format's overall improvements. We have no reason to suspect that the first players to hit stores (which may be later than expected; see "Bulletin," page 8) will offer anything less.

After I took the plunge and bought a laserdisc player, my local Blockbuster Video store quit renting laserdiscs. I was told they are being discontinued at all Blockbuster stores because they have problems with discs getting scratched. If scratched DVD's also become a problem for video stores, I don't see much of a future for that format.

WAYNE A. PFLUGHAUPT
Katy, TX

A Blockbuster Video spokesman told us that 114 of its company-owned stores around the country are still renting laserdiscs. Your local store is probably owned by a franchisee who made an independent decision. Either way, don't be so quick to write off the DVD, which is said to be constructed of a tougher plastic than is used for laserdiscs and should be less prone to scratching. More important, as an all-digital medium, DVD lends itself to digital error correction in the event the laser encounters imperfections in the disc surface, whereas the video signal on a laserdisc is analog and cannot be corrected during playback.

Cinepro and THX

In his July test report on the Cinepro 600X power amplifier, Julian Hirsch relates a claim by the manufacturer that it "is a mod-

ified version of a THX-certified professional amplifier that has been in production since 1989." In fact, Cinepro does not sell any amplifiers certified for either Home THX or THX Theatre use.

We called Cinepro, and an officer of the company indicated that the Model 600X was derived from another company's amplifier that is certified for THX Theatre use. It is important to note that the technical parameters of Home THX amplifiers are a good deal different from those of THX Theatre amplifiers, and a model approved for one use is not automatically appropriate for the other. Cinepro has agreed to stop describing the amplifier in this misleading fashion.

A complete and up-to-date list of Home THX-certified products is on our World Wide Web pages (<http://www.thx.com>).

STEPHEN H. SHENEFIELD
Product Development Manager, Home THX
Lucasfilm Ltd.
San Rafael, CA

We regret that our test report on the Cinepro Model 600X amp included information that could be misconstrued. Thanks for setting the record straight.

MAD Grooves

Steve Simels's August review of *Mad* magazine's "Mad Grooves" CD reminded me of my youthful encounters with *Mad*, especially the music. The songs were released on plastic-coated cardboard squares bound into the issue, with the record groove cut into the plastic. You removed the record by tearing along the perforation. Of course, a spindle hole was needed to play it properly on your turntable. The instructions told you to form the hole with "a pencil or a .45-caliber bullet!"

Mr. Simels doesn't list the song lineup, but two of my favorites were *The Burp Song*, with its crescendo-like triple burp, and *She Lets Me Watch Her Mom and Pop Fight*. In my youth, many a brain cell was skewed reading *Mad* and listening to these songs. Once I get hold of this disc, it looks like I'll finish the job. PETER W. POLACK
Meriden, CT

Megachangers

I found Daniel Kumin's comparison of five CD "megachangers" in July quite informative, but he forgot to include Fisher's DAC-1506, a "monster" of a system that holds 150 discs. A. JORGES UPEGUI
Flushing, NY

We learned about the DAC-1506 after the "Megachangers" review was completed.

Why did you omit the 100-disc Aiwa changer and the 200-disc Denon DN-1200F/C from "Megachangers" in July? I particular-

Discover the incredible sound of patent #4,076,098.



CC6

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This is a 20,000 square foot movie theater.

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The DSP-A3090 lets you choose from 30 sound field modes. From L.A.'s Roxy and New York's Cellar Club, to churches and concert halls around the world. Seven-channel amplification sends 80 watts to each of the main, center and rear speakers, plus 25 watts to both front effects speakers. Analog, video and S-video, plus RF, coaxial and optical digital inputs link you to today's and tomorrow's Dolby Surround AC-3 components.

We did leave out a few hundred seats, some plush carpet and the kid screaming in the 13th row. But what we've given you instead is something no home theater owner has ever heard before. • The theater. • It's the expansive acoustic environment that gives a trip to the movies its sense of grandeur. And until recently, it just wasn't possible from a sound system designed to coexist with a sofa, an easy chair and a pair of potted plants. • But that was before decades of Yamaha experience in sound field measuring and processing, custom integrated circuit design and audio microchip fabrication culminated in the new DSP-A3090 Digital Sound Field Processor. Introducing unique technology that creates the unmistakable sensation of a first-run theater's acoustic spaciousness. Combined with the unparalleled accuracy and



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dynamic range of Dolby® Surround AC-3.™ Every director has something specific in mind when mixing a film's soundtrack for the big screen. And the DSP-A3090's proprietary Yamaha processing techniques maintain the depth, openness and realism of that vision. While also preserving the directional relationships of every sound. So whether it's a musical score, or *T. rex's* roar, you'll hear it exactly how, and where, the director intended. • That's Tri-Field Processing. And it's made possible by the latest generation of Yamaha Cinema DSP. The technology that's kept us at the forefront of home theater for more than a decade. • Audition the DSP-A3090 for yourself. Just call 1-800-4YAMAHA for the dealer nearest you. Or visit us on the web at <http://www.yamaha.com> • Then drive off carrying a 20,000 square foot movie theater. • With the easiest parking in town.

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LETTERS

ly like the Denon's extra capacity, locking door, and expandability — you can link up to four regular units, holding 800 CD's. Its biggest drawback is its price of \$4,000, but it may be worth it. JAMES KEECH, SR.
Watertown, NY

If you're referring to the Aiwa DX-C100M, we reviewed it in June 1995. The Denon DN-1200, while impressive, is built for professional use and is quite a bit more expensive than the others in our comparison. We tried to stick with affordable changers.

A feature important to me not discussed in "Megachangers" is the ability to preset a disc's playback level, as you can with the Sony CDP-CX100. Also, the article pointed out the Technics changer's poor linearity at -90 dBFS; can you explain this further?

CHUCK HOGUET
Sacramento, CA

We are not aware of any consumer changer with an individual-disc level-preset feature besides the CDP-CX100, which is being dropped from Sony's line. As for our low-level linearity test, it measures how accurately a CD player reproduces extremely soft sounds (90 dB below a CD's maximum recordable level). The linearity error we measured from the Technics SL-MC400 changer was audible with a low-level 3-kHz test tone played at normal volume settings. It's therefore possible that it could be audible with some music, too.

I recently purchased a Pioneer PD-F904 megachanger because of its Automatic Digital Level Control (ADLC). I like this feature because CD's have different recording levels, and nothing is more irritating than to have to adjust volume for various discs. I was very disappointed that Daniel Kumin failed to mention this feature in the Pioneer PD-F1004 he tested for "Megachangers."

DAVID S. WENDT
LaPorte, IN

Hearing Protection

I must protest Tom Nousaine's assertion, in his article on hearing protection in July, that "one or two . . . high-SPL encounters may not damage your hearing permanently, but repeated exposure will begin an irreversible decline, even though the effects may not be noticeable for years to come." Otologists around the world agree that such "morning after" effects as ringing in the ears, a dull or clogged feeling, or a headache following noise exposure are a 100-percent-certain indication that you have suffered some permanent hearing loss.

Let's not be too casual about this. Yes, long exposures to loud sound are worse than short exposures, but that's because there are more opportunities in a longer

period of time for acoustic peaks and transients to occur.

The odds are that if you are a male U.S. native above the age of eight years, you have damaged hearing. It occurs with every firecracker heard closer than 50 feet away, every coach's whistle blasted into the ears of kids on the school yard from less than 30 feet, every time a pipe or a piece of lumber is dropped flat onto a hard surface within 30 feet, and many other times from any number of sources during normal daily life.

DREW DANIELS
North Hills, CA

We never intended to be casual about the perils of exposure to loud sound. Thank you for reinforcing the point of Tom Nousaine's article.

CD Foam Alert

After reading the warning about deteriorating foam in CD boxed sets in July "Bulletin," I went through all my sets and removed the foam. I ended up with 106 pieces of foam, almost all of them from sets manufactured by the best-known classical CD labels. Many were beginning to turn red where they were in contact with the discs — and only there. In one set the foam was starting to disintegrate and left particles on the CD's. Many thanks for your warning!

RICHARD L. FRANCIS
Gainesville, FL

Sound Over Sense

A letter in the July issue headed "Surround Insanity" ended with the "hope that two-channel sound remains a consumer option for a long time." As a classical-music lover, I'm playing more and more chamber pieces for the same reason I don't have (or want) surround-sound home theater: My 12 x 15-foot room is no more Lincoln Center than it is a cinema. I could fit the Cleveland Quartet comfortably, but the very idea of having the Cleveland Orchestra in for the evening is ludicrous.

Our ability to shell out big bucks for equipment that can never duplicate the real thing, regardless of cost, is overpowering our common sense. I won't quit listening to Mahler, but neither will I blow ten grand trying to move his horns another foot to the left or in order to pretend that a herd of rhinoceroses is trotting through my apartment.

JAMES F. MCANINCH
Martins Ferry, OH

We welcome your letters. Please address correspondence to Editor, Stereo Review, 1633 Broadway, New York, NY 10019. You should include your address and telephone number for verification. Letters may be edited for clarity and length.

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NEW PRODUCTS



▲ TECHNICS

The five-channel SA-EX900 A/V receiver from Technics has its own 100-watt subwoofer amplifier and level control; other channels deliver 100 watts each to the left, center, right, and surround speakers. Features include a help button that directs operation

through an on-screen display, a universal remote, and inputs for two VCR's, CD and laserdisc players, a cassette deck, and a turntable. Price: \$499. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

• Circle 120 on reader service card



▲ AUDIOSOURCE

The AudioSource MCSW-1 powered subwoofer is intended for use with bookshelf, multimedia, or minicomponent systems. The 12-inch matte-black cube contains an 8-inch woofer powered by a 50-watt amplifier. There's automatic power on/off circuitry,

speaker-level and line-level inputs, a phase-reversal switch, and a 40- to 180-Hz adjustable crossover. Bandwidth is given as 30 to 250 Hz. Price: \$250. AudioSource, Dept. SR, 1327 N. Carolan Ave., Burlingame, CA 94010.

• Circle 122 on reader service card

▼ THIEL

Thiel's 52-inch-tall CS6 speaker has a 10-inch aluminum woofer with a short-coil/long-gap design that's said to reduce distortion, a low-diffraction coaxial driver combining a 5-inch "shallow cone" aluminum/polystyrene midrange with a 1-inch aluminum-dome tweeter, and a 12-inch passive radiator. All are mounted on a concrete baffle.

Price: \$6,900 a pair. Thiel, Dept. SR, 1026 Nandino Blvd., Lexington, KY 40511.



▼ AIWA

Aiwa's AV-X500 combines a four-channel, Dolby Pro Logic receiver with a hi-fi VCR in a single 14-inch-wide component. Rated for 100 watts to the left, center, right, and surround channels, the receiver also boasts four DSP modes, a BBE circuit to enhance vocals, Super T-Bass for enhanced bass, a five-

preset equalizer, and inputs for three video and four audio components. The full-feature, four-head VCR includes automatic head cleaning, on-screen menus, and slow-motion/freeze functions. Price: \$650. Aiwa America, Dept. SR, 800 Corporate Dr., Mahwah, NJ 07430.

• Circle 121 on reader service card



NEW PRODUCTS



▲ ECHOSTAR

EchoStar's Premium satellite receiving system for its DISH network has an 18-inch antenna with dual-output LNB and a receiver with a UHF universal remote. Features include a seven-day on-screen program guide, program browse, favorite-channel listings, and parental-control

program lock-outs based on ratings or channels. Programming packages for the MPEG-2-encoded digital TV/music service range from \$20 to \$60 a month. Price: \$749. EchoStar, Dept. SR, P.O. Box 6552, Englewood, CO 80155; phone, 1-800-333-3474.

• Circle 123 on reader service card

▼ TEKNA SONIC

Tekna Sonic's S-15 speaker stands feature its C-5 vibration absorbers attached below the 6½-inch-square top plates. The absorbers are said to dissipate enclosure vibrations and reduce colorations. Available in 14-, 21-, and 28-inch heights, each black steel stand has a 12-inch-square base. Price: \$250 a pair (all sizes); C-5 absorber also available separately, \$40 each. Tekna Sonic, Dept. SR, 442 Houser St., Suite E, Cotati, CA 94931; phone, 1-800-224-6968.

• Circle 124 on reader service card



▼ AUTOTEK

Autotek's Mean Machine 40MX1 stereo car amplifier is said to be conservatively rated at 20 watts per channel into 4 ohms with 0.015 percent distortion. The 9½ x 2½ x 5-inch unit features 24-dB-per-octave Linkwitz-Riley low- and high-pass crossovers, front-panel switches to independently route low-pass, high-pass, or full-range signals for amplification, and line-output jacks. It also has a bass boost variable from 0 to +18 dB, a MOSFET power supply, and a full range of protection circuitry. Price: \$299. Autotek, Dept. SR, P.O. Box 4391, Burlingame, CA 94011.

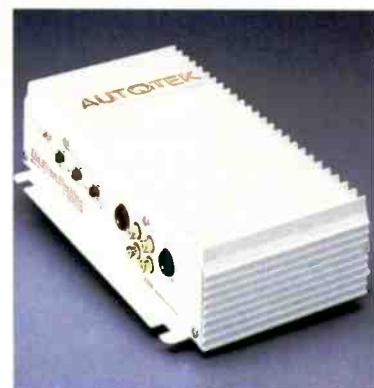
• Circle 127 on reader service card



▲ PANASONIC

The EABMPC25 multimedia computer speaker system from Panasonic includes two 7-inch-tall satellites, each with a 3½-inch woofer, a 1½-inch tweeter, and a 5-watt amplifier. A single set of controls handles power, volume, and treble for both of the magnetically shielded satellites. A second audio input is provided. Bandwidth is given as 50 Hz to 20 kHz. Price: \$79 a pair. Panasonic Computer Peripherals Company, Dept. SR, Two Panasonic Way, Secaucus, NJ 07094.

• Circle 126 on reader service card



▲ CAMBRIDGE SOUNDWORKS

The Tower series from Cambridge SoundWorks and designer Henry Kloss includes the Tower, a 38-inch-tall, three-way bipolar speaker (center in photo, \$1,499 a pair); the Tower II, a 35½-inch-tall, conventional three-way system (left, \$999 a pair); and the Tower III, a two-way system that stands 32½ inches high (right,

\$599 a pair). The two-way, three-driver CenterStage center speaker (foreground, \$349) is 6¼ inches high and mates with all three Tower models. Available directly from Cambridge SoundWorks, Dept. SR, 311 Needham St., Newton, MA 02164; phone, 1-800-367-4434.

• Circle 125 on reader service card

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NEW PRODUCTS

▼ DD-AUDIO

The DD-Stone Exquisite speaker from DD-Audio is made out of green and grey soapstone mined from the Tulikivi quarries in Finland. The 36 $\frac{5}{8}$ -inch-tall cabinet holds three drivers: a 6 $\frac{1}{2}$ -inch Kevlar woofer in an internal reflex box ported to the rear, a 5-inch magnesium-cone midrange element, and a 1-inch hard-dome

tweeter. Frequency response is given as 47 Hz to 20 kHz \pm 3 dB, sensitivity as 84 dB, impedance as 4 ohms, and power handling as 150 watts. Price: \$6,475 a pair including isolation feet. DD-Audio, dist. by Rexsell Corp., Dept. SR, 1300 W. Belmont Ave., Suite 207, Chicago, IL 60657.

• Circle 128 on reader service card



◀ SMART DESIGNS

The 4-foot-tall Ne-Onn Rax from Smart Designs has a fluorescent lighting system with changeable filters behind the fifty jewel boxes it holds. Constructed of 20-gauge steel, it is also available in a double stack that holds a hundred CD's. Price: \$99 (single) or \$169 (double); pine or maple available at extra cost. Smart Designs, Dept. SR, 1737 W. 132nd St., Gardena, CA 90249.

• Circle 129 on reader service card



▼ MB QUART

MB Quart's Terra speakers feature artful ceramic enclosures in patterns called Delhi White, Magic Wood, and Algerique (shown) or in glossy piano black. Included are the QL T 50 satellite/surround with a 5-inch woofer and coaxial $\frac{3}{4}$ -inch dome tweeter (\$799 to \$849 a

pair depending on finish), the matching QL T 30 center speaker (\$425 to \$500 each), and the QL T 60, a 12 $\frac{1}{2}$ -inch-tall passive subwoofer with dual 6-inch woofers (\$749 to \$799 each). MB Quart, Dept. SR, 25 Walpole Park S., Walpole, MA 02081.

• Circle 130 on reader service card



◀ JAZZ

The Jazz JS-300 3-D multimedia speaker system offers three 3-D sound modes: Music, Theater, and Game. Also provided are controls for volume, bass, treble, balance, mute, and power as well as two audio inputs, a headphone jack, and a microphone bypass jack. Each 11-inch-tall speaker contains two 3-inch woofers and a 1-inch cone tweeter driven by its own 20-watt amplifier. Price: \$125. Jazz, Dept. SR, 1355 Darius Ct., Industry, CA 91745.

• Circle 131 on reader service card



◀ Z-MAN

The Z-Man ASE is an analog processor said to remove brightness from the sound of a CD player while expanding the soundstage and enhancing warmth. Price: \$198. Available from Z-Man, Dept. SR, 2118 Batchawana S.E., Grand Rapids, MI 49508; 1-800-478-9727.

• Circle 132 on reader service card





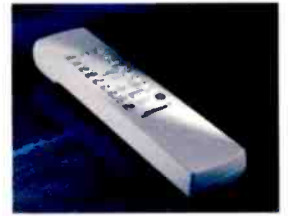
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Trespassers will be cooked, vibrated, humidified, dropped and reduced to the point of whimpering "Mommy" to our sound.



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Whew! (Wipe sweat from forehead and flick.)

Special robotics and computer-aided design and manufacturing techniques were built by our own hands to ensure a nod from our furrow-browed engineers. Then to keep the obsessive-compulsive dedication to sound quality consistent, we chiseled Premier dealers from the same slab of concrete as the engineers.

Hopefully the headunits inherit some of our approach-me-and-get-racked attitude. But we felt the fools lurking. So Premier invented Detachable Face Security™ and then added a car alarm, built into the unit itself, that blasts its warning inside the car to terrorize the thieving rodents into scampering away without your beloved stereo.

These premises, these conditions, these posture-perfect engineers exist solely to bodyguard the reliability and ultimate sound performance of your Premier system. But if you're able to create a more unlikely condition in your own car than our tests simulate (good luck), and the stereo starts to cower, our warranty will be idling for two long years, anxiously awaiting the chance to participate.

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PREMIER

STATE OF THE ART

What's Up with Wireless Speakers?

BY RICH WARREN

Spiders spin their webs because they must, but some of us face the tangled webs we weave by choice: telephone wires, AC power cords, computer cables, extension cords, and, last but not least, speaker wires. Running wire to a couple of speakers is no big deal. But throw in a center speaker, a subwoofer, and a couple of surround speakers to create a home theater, or add a secondary set of speakers in the room down the hall, and suddenly you've got quite a job on your hands — especially if you plan on concealing all those extra wires! If only they would vanish like the Cheshire Cat, leaving just the smile of sound.

There have been several attempts over the years to make speaker wire disappear. A few companies have tried using infrared (IR) technology to send audio signals to speakers equipped with IR receivers. It works fine — as long as there is a direct line of sight between the transmitter and the speaker. But if you want to put speakers out on the patio or in a room other than the one where your audio gear is located, you're out of luck.

To overcome IR's line-of-sight limitation, manufacturers developed wireless speaker systems that transmitted audio signals over the airwaves — specifically, the 49-MHz band, which is at the low end of the VHF band used for TV. But since 49 MHz was also used by cordless telephones, baby monitors, and other wireless consumer devices, it was overcrowded and prone to interference. Its operating range was also limited to about 100 feet.

The future of wireless technology brightened in 1989 when the Federal Communications Commission (FCC)

opened the 900-MHz band (which actually ranges from 902 MHz to 928 MHz) for residential consumer products. Compared with 49 MHz, this part of the broadcast spectrum offered better fidelity, lower noise, and extended range. It was also as wide open as Montana — at least in the early days. Makers of cordless phones and baby monitors quickly migrated over to 900 MHz, and in just a few years a half-dozen or so companies, led by Recoton, were selling wireless speakers and extolling the virtues of 900-MHz technology.

Sound Quality

Three factors determine the sound quality of a wireless speaker system: the transmitting/receiving circuitry, the amplifiers (most models are self-powered), and the design of the speaker itself. Since the transmission-reception process imposes definite sonic limitations, most companies use modest drivers and amplifiers in their wireless speakers, which for the most part relegates them to secondary-listening status — for use in the kitchen, on the patio, and so on. And some companies confine their wireless offerings to surround speakers whose job is to reproduce the limited-bandwidth signal carried by the surround channel in a Dolby Pro Logic home-theater system.

Theoretically, the best 900-MHz wireless transmitters/receivers should — at close range, anyway — approach the sound quality of the average FM radio station. That means a frequency response of about 50 Hz to 15 kHz plus or minus a few decibels and a signal-to-noise ratio (S/N) of about 70 dB. But S/N deteriorates rapidly as the receiver (the speaker) is moved away from the transmitter. Other factors that can affect sound quality include building construction (steel girders do wonders for reception) and interference from other 900-MHz devices operating in the immediate area. Fortunately,



Recoton's W450 wireless speaker system (\$450) includes a pair of two-way speakers, each with a 25-watt power amplifier inside its 1-foot-tall ported cabinet, and an AWACS-style 900-MHz transmitter with a 150-foot operating range.

"Polk's SRT System will give you a thrill a minute"

David Ranada, *Stereo Review*, January, 1996

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David Ranada, *Stereo Review*, January, 1996

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What Hi-Fi?, Great Britain. February, 1996

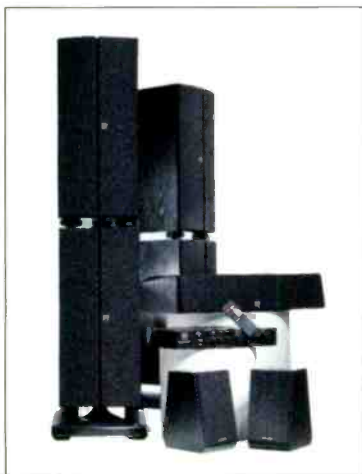
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Matthew Polk
Co-founder, Polk Audio

The SRT system consists of 35 active drive units housed in seven enclosures (including two 300 watt powered subwoofers) and a Control Center with wireless remote.

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STATE OF THE ART

900-MHz wireless speakers usually have a frequency-tuning dial so you can attempt to tune out interference.

What's Out There

Recoton — the company that created the consumer wireless-speaker business, first using household AC wiring (in 1987) to transmit the signal and then migrating to the 900-MHz band — holds three patents pertaining to 900-MHz wireless technology (with others pending). Its technology, which it licenses to other companies, is used in about a dozen wireless systems, including headphones and microphones, most of which include a transmitter with a 150-foot operating range that resembles an AWACS military plane (see photo on page 26).

Recoton's current crop of wireless speakers includes several compact powered systems that range in price from \$200 to \$450 for the top-of-the-line W450. Each speaker in the W450 package mates a 6½-inch woofer and

Music, Movies, and Magic speaker packages. The Magic 2 system, which originally sold for \$649, comprised a pair of two-way satellite speakers, a 20-watt-per-channel amplifier, and a 900-MHz transmitter — all of which fit on a unique "Taxi" stand with a carrying handle. While it was unquestionably the best-sounding wireless speaker system then available, it was apparently a bit too pricey for most folks. Earlier this year JBL replaced its Magic speakers with the WRKW1000, a \$280 wireless system comprising a 900-MHz transmitter with a 150-foot operating range and a pair of compact, two-way speakers. Each speaker has a built-in 10-watt power amp with volume and tone controls.

Altec Lansing entered the 900-MHz wireless speaker market this year with several models that use proprietary digital spread-spectrum technology, which chops the audio signal up into bits and transmits it rapid fire across wide areas of the frequency band to

will fade. Although you don't have to run wires to the back of the room, you do have to run a wire between the surround speakers, because one of them contains both power amps.

Unlike AC-powered wireless speakers, which aren't *truly* wireless because you still have to run a power cord to them, the BA Audio Designs TRX-7000 transportable speaker system (\$599) from Paradox of Canoga Park, California, runs on a pair of 24-volt rechargeable nickel-cadmium (Ni-Cd) batteries, which provide 8 hours of uninterrupted playing. The system includes a compact transmitter, a pair of 10¼-inch-tall powered speakers, each with a detachable battery pack and built-in charger, and an AC adaptor. Each ported speaker has volume, bass, and treble controls, sports a classy black Nextel finish, and houses a 4-inch woofer, a 2-inch Mylar tweeter, and an 11-watt power amp. Available for \$450 without the Ni-Cd batteries, the TRX-7000 system incorporates an automatic frequency control (AFC) circuit that's said to prevent the signal from drifting once it's tuned in.

Chase Technologies of St. Petersburg, Florida, markets the WS-5500 wireless speaker system (\$299), which comprises a transmitter and a pair of exceptionally attractive, wedge-shaped speakers that can be powered by six D batteries per speaker or by an AC power adaptor. Chase claims that alkaline batteries will drive the speakers for up to 80 hours at half power or 48 hours at full power — twice the time you'd get from standard rechargeable D-cells, according to Chase. The ported speakers incorporate an automatic level control that's designed to improve S/N and increase range. The WS-5500's S/N is given as 70 dB and its operating range as 180 feet.

Finally, Terk Technologies, the company known for its AM/FM antennas, is working on a 900-MHz powered speaker system that automatically scans the frequency band and locks onto the signal, eliminating the need for manual tuning. Dubbed the Troubadour 5.1, the system is expected to be available late this year for \$400.

New Technology

New wireless technology looms on the horizon as the 900-MHz band becomes increasingly congested. Once again, going up in frequency — this

The new 2.4-GHz band offers clear advantages

over current wireless-speaker technology, including lower noise, greater range, and wider bandwidth.

a ½-inch tweeter in a 1-foot-tall, ported black woodgrain-vinyl cabinet that also houses a 25-watt power amplifier. Recoton rates its S/N at a respectable 60 dB and channel separation at 30 dB, which is in line with that of an average FM tuner. On the home-theater front, Recoton offers the WHT421 powered subwoofer (\$300), which packs a 50-watt amplifier and 10-inch driver in a 15-inch-tall cabinet, and the 11½-inch-tall WHT462 powered surround speaker (\$330 a pair with transmitter), which uses a single 5-inch driver.

For those who want music poolside, Recoton also offers the dome-shaped W410 indoor/outdoor speaker (\$280), a battery- or AC-powered model that looks like a prop from a 1950's science-fiction movie. Designed for casual listening, this mono speaker contains a rechargeable lead-acid battery that is said to last up to 18 hours (the system includes a battery charger/AC adaptor).

JBL cut the cables back in 1993 when it introduced its SoundEffects

avoid interference with other 900-MHz receivers.

The company's most intriguing system is the ITW268 (\$500), the first in-wall speakers that are both powered *and* wireless. Altec also offers the PSW2 wireless subwoofer (\$200), which puts a 6-inch driver, a 40-watt power amp, and RF receiving circuitry in a compact, plastic enclosure with dual ports. And if you want a single wireless speaker that you can also jack a Walkman-type CD or tape player into, there's the Model 59 (\$150).

Sony's \$950 SA-VA55 home-entertainment system consists of two tower front speakers — featuring built-in Dolby Pro Logic decoding, a subwoofer, a "center" speaker, and amplification — and a pair of powered wireless surround speakers. An IR transmitter in each of the front speakers sends the surround signal to the rear speakers. Using infrared insures that there will be no interference from baby monitors, but if you stand up and block the signal path, the rear channels

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time all the way to 2.4 gigahertz (GHz) — promises to reduce noise, extend range, and widen bandwidth to improve fidelity. The 2.4-GHz spectrum will be as wide open as the 900-MHz band was half a dozen years ago, which should help ease interference, at least in the near term. Larry Schotz, president of L. S. Research, a major consultant to the audio industry, gave this appraisal of 2.4 GHz: "The 2.4-GHz product we've developed is actually a spread-spectrum digital wireless link. We can take the digital output of a CD player or a DAT player and transmit that directly, or we can transmit the analog output, to provide full CD quality."

The 2.4-GHz band offers clear-cut advantages over current wireless technology, according to Schotz. "One is that it's allowed in Europe, where 900 MHz is not, and the 2.4-GHz band is also wider than the 900-MHz band. [That's important because] we need a lot of bandwidth to send digital spread-spectrum information." While an operating range of more than a mile is possible, Schotz says, "we've cut power down to keep the range reasonable, up to about 200 feet." And even at 200 feet, reception is very good, he claims. "It's the same as if it were 10 feet."

Recoton engineer Frank Rodriguez, who jokingly calls 2.4 GHz "the microwave-oven band," says that "it has different characteristics than lower-frequency bands, so it's more susceptible to path loss. Walls and doors have a greater effect on the signal than on 900 MHz. It's also more directional than 900 MHz — even people walking between the transmitter and receiver can cause signal loss. Exotic modulation techniques such as spread-spectrum can compensate somewhat and make it more robust. One advantage of 2.4 GHz is that it goes from 2.400 to 2.483 GHz, a bandwidth that is much wider than 900 MHz. The 900-MHz technology is a relatively mature and inexpensive one, while the newer 2.4-GHz products [due out this fall] require costly components like gallium-arsenide transistors." While Recoton is looking at new technologies, company officials would not say which ones.

In a remarkably candid statement, Bob Rapoport, president of Chase Technologies, admitted that "hard wire will always be better than RF." So if high-quality sound remains your goal, stick with wire. But if convenience and flexibility appeal to you, consider wireless speakers. □

Worker ants spend their entire lives bringing home sustenance to the queen and her young.

(We apologize if this sounds familiar.)



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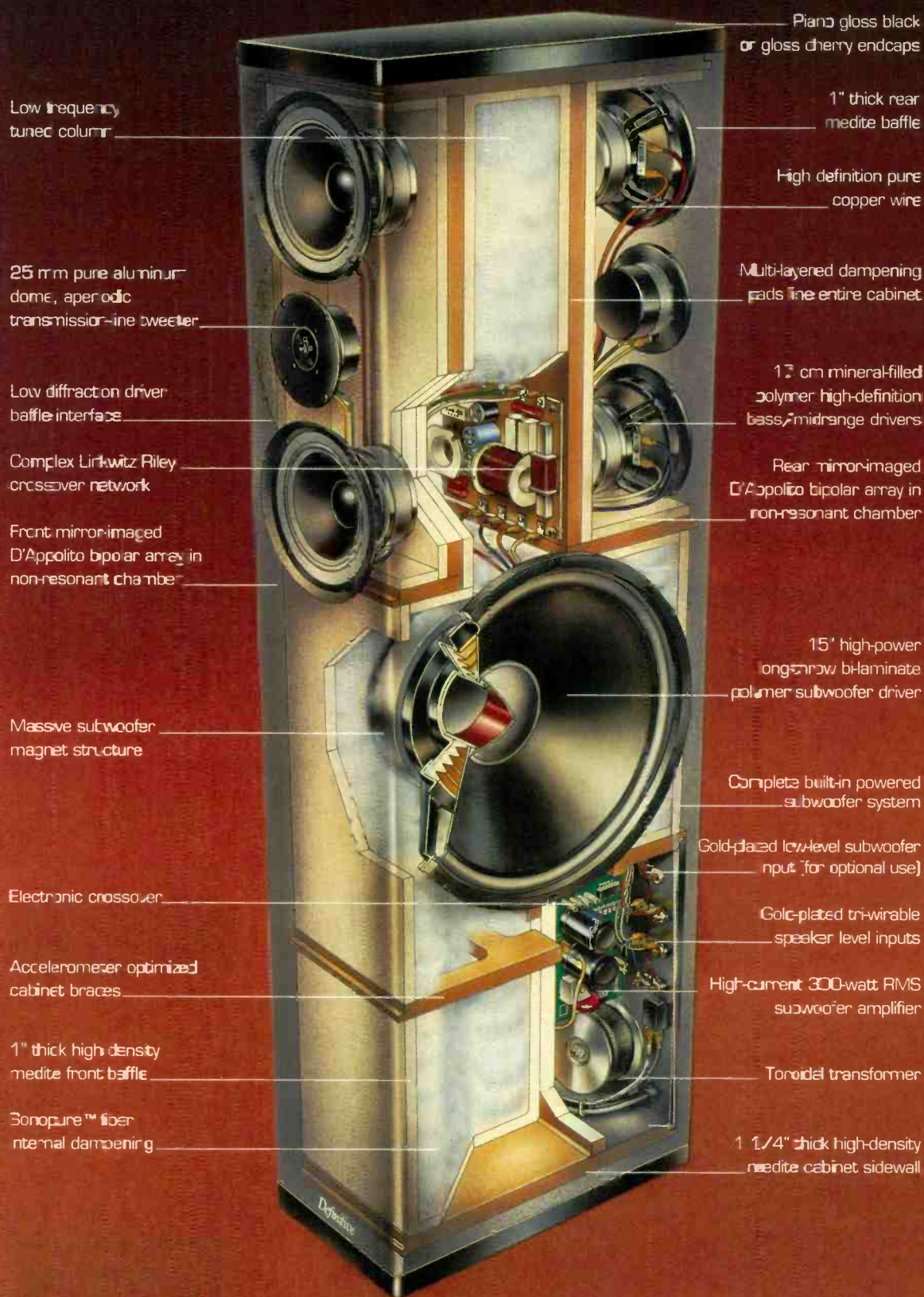


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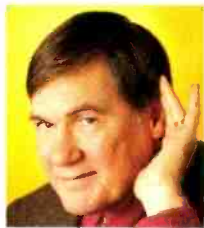
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AUDIO Q & A

IAN G. MASTERS

Upgrading to Dolby Digital

Q My A/V receiver has pre-out/main-in jacks for the front channels and line-level outputs that permit connection of an external amplifier for the surround channels. Is there any way I can upgrade the receiver for the Dolby Digital (AC-3) surround format, or will I have to scrap it?

AHMED HUSSAIN
Brooklyn, NY

A There's probably no reason to scrap it. When you eventually get a Dolby Digital decoder, you can feed its analog inputs from the front left and right pre-outs on your receiver; leave the receiver in stereo mode and let the AC-3 decoder handle the Pro Logic decoding. The RF output of your laserdisc or DVD player can be fed directly to the main-in jacks on your receiver. The surround channels will, however, have to be powered by an external amplifier, as those amplifiers' inputs are not accessible in your receiver. That's not a bad idea anyway, as most receivers skimp somewhat on surround-channel power, and Dolby Digital really demands full output in the surrounds.

Subwoofer Connections

Q I've heard that in the absence of a line-level subwoofer output, hooking up a powered sub to a receiver's Speaker B outputs could work if the B outputs run in parallel with the A outputs. How can I tell if my receiver's speaker outputs run in series or in parallel, and is it okay to hook up a powered sub to it that way?

HECTOR D. SOTO
West Hartford, CT

A Hook up two pairs of normal speakers (not subwoofers) to your receiver in the manufacturer's recommended fashion, and play something through both pairs simultaneously. While the music is playing, carefully disconnect the left speaker in pair A. If the left speaker in pair B stops playing, too, then the A and B pairs are connected in series, and you cannot use these outputs for a subwoofer. If the left B speaker keeps playing, then the A and B pairs are wired in parallel, and you can use the B outputs to drive a powered subwoofer's speaker-level inputs.

Unbalanced Ears

Q For quite a while I've been troubled by the channel balance of my stereo system. The image is always pulled to the right of the soundstage, and the effect can only be

partially corrected by adjusting the balance control. As it turns out, the problem is most likely in my ears: An audiogram showed significant hearing loss in my left ear at about 1 kHz and between 4 and 8 kHz. Could I use a graphic equalizer to boost the left-channel signal at those frequencies to correct the perceived imbalance?

ROBERT STEELE
Jacksonville, FL

A That might work with headphones but not with loudspeakers. When we listen to speakers, each ear receives information from both speakers; we can image successfully because the sound from the left speaker arrives at the left ear first, so we localize it on that side. We do still hear it with the right ear, however, so if you alter the spectral balance of one channel, it will affect the overall balance you hear. And that's only the direct sound; a large portion of the sound we hear reaches us after reflection from the listening room's surfaces, and that includes sound from both speakers. Perhaps the best solution is to use a good hearing aid to correct the imbalance at its source.

Deteriorating Tapes

Q I've noticed that all my audio cassettes of a particular brand and type have developed a screeching, chewing-like sound toward the end of the tape. Overall, most of my tapes, regardless of age, play well, but the ones I have trouble with are all five to ten years old. Have they deteriorated somehow, or is there something wrong with that type of tape?

DON SHIFFRIN
Los Angeles, CA

A Of all the questions I receive, this is perhaps the most common. Usually I suggest that this form of "scrape flutter" can sometimes be cleared up by a thorough cleaning of your deck's tape path and perhaps fluffing up the felt pad behind the tape in the cassette shell. Because you are only experiencing the effect during a portion of the tape's play, that might be what's happening in your case. But several readers have reminded me that this effect can result from a much more serious and troubling problem. Major repositories of archival tapes, including the National Archives and the Library of Congress, report that a significant number of their tapes have self-destructed on the shelf; estimates run as high as 10 or 15 percent. Audio cassettes and open-reel tapes, videocassettes, and DAT's have all been affected.

When a tape is manufactured, the plastic strip is coated with oxide, and sometimes a lubricant, mixed in a sort of glue called a

In our experience,
the only place suitable
for a "Disco" mode
usually has a bouncer
at the door.

Fewer parts, better parts, better sound.



A U D I O A N D A U D I O / V I D E O C O M P O N E N T S

CIRCLE NO. 39 ON READER SERVICE CARD

"binder." Over the years, various formulas have been used for the binders, and now some of these binders are breaking down, sometimes because of moisture. The problem only affects certain formulations of certain brands of tape made in certain years. The binder becomes sticky and causes the tape surface to grab and release the metal parts it moves past, causing a characteristic squeal. Usually, once a portion of tape has been played this way, it's ruined. Archivists have discovered that literally baking an af-

fect tape will re-cure the binder long enough to get a few good plays, so copies can be made, but it's not really a practical solution when millions of tapes are involved.

Whether that is what has happened to your tapes is hard to say. It would be prudent to try any other solution to get your tapes to play before heading to the oven. A different machine might help, or try cleaning your deck as described above. If nothing works, you probably have nothing to lose by baking the tape. Use the lowest possible

heat (approximately 130°F), and bake it for 6 to 8 hours. I'd suggest you try this first on only one cassette — something that isn't of critical interest or that can be easily replaced.

Woofer Options

Q In shopping for speakers, I have noticed the multiplicity of ways in which manufacturers configure the low-frequency drivers. Some use a single large speaker, others two smaller ones, in ported or sealed boxes or whatever. All claim that their systems will produce the least-distorted low frequencies. Will one large woofer always outperform an array of smaller ones, or is there merit in each of the different designs?

TED CUMUZE
Nashville, TN

A With speakers, there are no absolutes. If everybody agreed about the best technique for reproducing sound there would be only one type of speaker. When it comes to reproduction of low frequencies, the challenge is to find a device that can move a lot of air with the least amount of distortion and to prevent the wave radiating from the rear of the diaphragm from canceling the front wave. The first job dictates using a large sound radiator or several smaller radiators moving back and forth only a small amount, or a single small radiator moving a greater distance. The handling of the back wave is the job of the enclosure: A sealed box contains it, for instance, while a ported enclosure uses the rear wave to reinforce rather than cancel the front. All these techniques have their fans, but it's hard to finger any one as "best," as there are excellent (and lousy) examples of each one.

DVD in a Laserdisc Player

Q My laserdisc player has a tray that accepts many different disc sizes. Does that mean I'll be able to play the new digital versatile discs (DVD's) with it, or will I have to buy a new player? Could laserdisc players be fitted with an adaptor for playing DVD's?

JASON WINDFIELD
South Salem, NY

A No existing laserdisc player will play DVD's, and adaptors would be impractical. The new technology depends partly on much shorter-wavelength lasers than are now used to play laserdiscs, and partly on heavy video compression, which allows a vast amount of data to be stored on a CD-size disc. The data must be decompressed and decoded by the player, and your laserdisc player lacks the appropriate circuitry. So far, only Pioneer has said it will market a machine that will play both laserdiscs and DVD's, though all DVD machines are expected to play CD's as well as DVD's.

If you have a question about audio, send it to Q&A, Stereo Review, 1633 Broadway, New York, NY 10019. Sorry, only questions chosen for publication can be answered.

WIRELESS "Miracle"

(Home Theater Magazine, July 1996)

"This really,
really works"
— Home Theater
Magazine



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somebody

please turn

that music

Up?



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SIGNALS

KEN C. POHLMANN

Phone Home

In 1870, the British physicist John Tyndall demonstrated a rather curious physical effect. Using just a candle and two beakers of water, he showed that light could travel within a stream of flowing water. History does not record the reaction of any observers, but in all likelihood they thought the effect mildly interesting — and wholly useless. From a scientific standpoint, though, the discovery was incredibly significant. In fact, it changed the way the world communicates, and today it is changing the way high-fidelity recordings are made.

Seizing upon Tyndall's nineteenth-century discovery, twentieth-century scientists designed an entirely new transmission medium. They used a strand of very pure glass, surrounded by a cladding material, to create a light pipe. All of the light entering the pipe is reflected by the

core/cladding interface and continues to move down the pipe, with very little loss, for hundreds or thousands of miles. Because light, and not electricity, carries any information transmitted, it is immune to electromagnetic interference. Moreover, the bandwidth is very wide.

Not surprisingly, it was the telephone industry that first seized upon "fiber optics." By the 1960's, fiber-optic technology was viable, and the demands of the war in Vietnam had caused copper prices to skyrocket. Phone companies began installing fiber-optic cables instead of copper wires. Today, fiber interlaces cities around the world; a single thin fiber might carry 500,000 simultaneous phone calls, and one cable might contain hundreds of fibers. Yes, most people still use copper wires to connect from their homes or businesses to the long-haul carriers, but

it's fiber from there on. A long-distance phone call has the same fidelity as a local call because the audio signals are digitally conveyed along glass fiber. Fibers connect telephone exchanges around the world, and it is fiber that carries the Internet to millions of computers. From a communications standpoint, without fiber we would all still be living in the 1950's.

The significance of fiber struck me with full force about three years ago. I was working in the University of Miami's recording studio, a million-dollar facility devoted to recording and replaying music. I needed about 30 seconds of high-quality music to test a reverberation algorithm. I asked a student to grab a piece of music for me. Note that we were sitting in a studio, with an entire archive of recordings nearby. The student returned a few minutes later with a floppy disk. I played it — an absolutely great recording. I asked where she got it. From Australia, she replied. Rather than mess with the studio, or our archive, she had simply logged on to the Internet and downloaded the sample from an archive in Sydney. The power of fiber optics to collapse long distances, making Australia more convenient than the room next door, was manifestly evident. If I had been a little smarter, I would have immediately picked up the phone, called an attorney, and started a company to interconnect recording studios with fiber optics. As it turns out, I wasn't that

Your dad thinks you oughtta Get A

Your buddies THINK you oughtta come SO You

Your Brother t h i n k s you oughtta Come

ANYBODY EVER ASK YOU WHAT YOU WANT TO DO?

If you're mechanically inclined, the Air Force could be the perfect place for you. Where else could you learn about Tactical Aircraft Maintenance, Aerospace Propulsion, and everything in between while earning a good salary and learning to

smart, and besides, smarter people had already seen the light.

In 1992, Tom Kobayashi and Tom Scott founded a company called Entertainment Digital Network, Inc., known as EDnet. Using fiber-optic lines, they networked seven recording studios, enabling the studios to convey high-quality digital audio signals from one to another.

Specifically, EDnet is a wide-area network (WAN) dedicated to audio (and video) production. For example, suppose that an album is being recorded in a studio in New York City, and the producer wishes to add a guitar part from a performer in Los Angeles. With EDnet, the producer in New York uses point-and-click software to send a cue mix over the fiber in real time to Los Angeles. The guitarist listens to the mix and plays his part, which is sent back over the fiber to New York. To compensate for the time lag incurred by the coast-to-coast round trip, the producer in New York delays the cue-mix feed to his monitors. He can then listen to the guitarist's part in time with the mix. Moreover, using a simultaneous voice channel, the producer and performer can talk to each other freely. When the tracking session is over, the guitar part is simply bumped forward in time to coincide with the other tracks, and remixing takes place. The guitar part completed, the producer phones London for the vocals . . .

The benefits of using EDnet are evi-

dent to everyone who tries it. Rather than flying performers or tapes around the world, the network allows interaction that is considerably easier and cheaper. Compared with earlier phone methods, which were unreliable and often sounded bad, EDnet efficiently supports high-quality

**Audio tracks for CD's,
commercials, or movies can
be moved from studio to
studio at light speed.
Performers can literally
phone in their parts.**

data-compressed (or even bit-for-bit, uncompressed) 44.1-kHz, 16-bit sound quality in real time. Audio tracks for albums, commercials, movies, and other applications can all be moved from studio to studio at light speed. Performers can literally phone in their parts.

Today, EDnet is a public company with over 400 network affiliates worldwide. The affiliates and their clients include recording and mastering studios, sound-effects libraries, screening rooms, post-production studios, TV and motion-picture

studios, and ad agencies, all shooting digital audio, video, and other data around the world. Everyone from Frank Sinatra to Forrest Gump is using EDnet.

Most audiophiles are greatly concerned about the several boxes and cables in their homes but somewhat less concerned about the many, many boxes and cables that are needed to generate the recordings they listen to. They might not want to know that even a recording as "simple" to produce as a CD of a jazz quintet may contain hundreds of edits and other workstation tricks in its data file. And EDnet brilliantly demonstrates how modern technology such as fiber optics gives us yet more opportunity to create great recordings by allowing the use of microphone cables that are thousands of miles long.

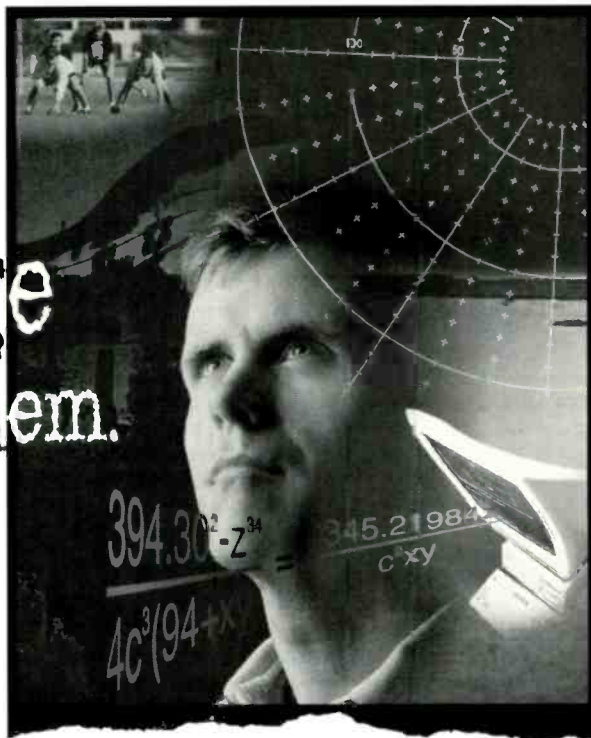
Moreover, with the sophistication of today's network technology, there is no reason why a globally recorded album cannot sound as good as an old-fashioned locally recorded one. Purists may shudder at the thought of a jazz quintet recorded by five artists playing in five different time zones. But without networked studios, it's entirely possible that the recording would never have been made at all.

So, next time you listen to music, take inventory of your hardware. You'll find a collection of parts from America, Japan, the Pacific Rim, and Europe. Now listen to the music. Very possibly, those parts are just as international. □

job out at the airport.

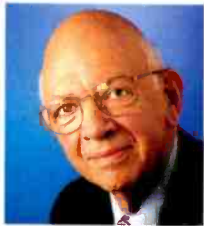
work at the garage
can hang out with them.

work at the plant.



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TECHNICAL TALK

JULIAN HIRSCH

Loudspeakers, Then and Now

Have you ever had the experience of listening to a loudspeaker, perhaps at a dealer's showroom or an audio show, or even in someone's home, and being so impressed with the sound that its memory remained with you for years? I have had a number of such auditory experiences that remain vivid after more than forty years.

This subject comes to mind because of a letter from a reader who has a pair of speakers that I had given a highly favorable review almost thirty years ago. At the time, the Rectilinear III (long gone from the audio scene) impressed me in an A/B comparison as being a virtual match in most respects for one of home audio's classics, the Quad Electrostatic, except in the low-bass region, where the Rectilinear clearly surpassed the Quad. Of course, that statement, while perfectly true, is akin to saying that a Ferrari is much faster than a Rolls-Royce. True, but hardly relevant to the intended uses of two very dissimilar products.

My correspondent is the recipient of considerable ribbing by his audiophile friends about his pair of Rectilinear III's, now worth about \$35 each, he tells me. He asks whether my standards have evolved through the years, and he deliberately gives no hint of how *he* currently feels about his speakers.

Of course, my testing and listening standards have evolved in parallel with the strides that have been made (and are still being made) in loudspeaker design and measurement technology, and with my subsequent exposure to many hundreds of different speakers. Nothing remains constant except the basic laws of nature (assuming *they* are truly fixed).

Essentially, what I said in my December 1967 review of the Rectilinear III was that, in my opinion, none of the other speakers to which I had compared it could match its overall listening performance. This specifically included the Quad Electrostatic, whose sound was unique and unforgettable, although unfortunately its reliability fell short of matching its superb listening quality. The high-voltage power supply on my Quad (singular, in those pre-stereo times) failed after a couple of years, and the replacement was not much better.

Nowadays it is easy to accept that loudspeakers are "forever." Barring misuse or gross physical damage, speakers (at least those for the home audio market) tend to last indefinitely. My unfortunate experience with the early Quad Electrostatic would be unlikely to occur today. Other than the old Quad, the only loudspeakers (and there have been only a handful) to suffer mortal injury while in my possession were victims of my own carelessness. Used properly, any good speaker should last for many years. On the other hand, testing (or listening to) a small speaker that's powered by an amplifier capable of delivering hundreds of watts is a recipe for disaster!

The reader also questions a statement I made in the review of the Rectilinear III to the effect that I had "never heard better sound reproduction in my home, from

Today, speakers can be made to deliver almost any type of bass performance chosen by the designer, subject to economic and aesthetic limitations.

any speaker of any size or price." Well, that was literally true, although I would hardly risk such a sweeping statement nowadays! The operative words were "in my home." Unquestionably, there were better speakers made in that time, but I had never heard them *in my home*, and as I've said time and time again, the listening environment can have an enormous impact on the sound of any speaker.

My correspondent's letter closes with a rather sweeping question: What has been the nature of progress in the field of sound reproduction? Although I cannot give a simple answer to that question, I will be glad to offer some of my views on the subject.

Thirty or forty years ago, speaker design was considerably cruder than it is today. A lot of it was done through largely empirical methods, "by guess and by gosh," particularly when the designer had little formal training in acoustics. The result could range from terrible to surprisingly good, the latter being more likely if the designer was musically trained.

A major advance came in the work of Neville Thiele and Richard Small, published in the *Journal of the Audio Engineering Society* in the early 1970's, which provided the basis for the truly scientific design of low-frequency drivers, or woofers. Most of today's high-quality speakers were developed through the use of the Thiele-Small parameters. As a result, modern home audio speakers can be made to deliver almost any type of bass performance chosen by the designer, subject to economic and aesthetic limitations.

I had the Rectilinear III for several years in the late 1960's and early '70's, and it was an excellent-sounding speaker in every respect. To be sure, nothing sounds quite like a full-range electrostatic, but in most respects the Rectilinear was a worthy rival.

Actually, in my 1967 review I said that none of the (unnamed) speakers to which I compared the Rectilinear could match it in *all* the principal characteristics (frequency range, smoothness, distortion, efficiency, dispersion, and transient response), although some outperformed it in one or more of those areas.

Would I make such a statement in a 1996 review? Only if I believed it was true, which was also the criterion applied in the Rectilinear review. The point is moot, in any case, for several reasons. For one thing, I rarely have more than a couple of speakers available for listening at

the same time (and they don't necessarily have comparable acoustic properties). For another, today's speakers are considerably improved over their predecessors of the 1960's, to the point where it would be foolhardy to claim that any one of them is "better" than every other! I'll admit to being curious about how the old Rectilinear III would fare in a comparison to some of the speakers I've tested in recent years, but we will never know.

Today's technology makes it possible to design a speaker with almost any desired acoustical or electrical properties. A great deal of this lies in the realm of art, rather than pure science. Nevertheless, there are so many other factors to consider, including appearance, size, and price, that I doubt that loudspeaker sound performance will ever be defined as precisely as that of electronic components, at least in their subjective qualities. And keep in mind that a *major* part of a speaker's performance — the listening room — is beyond the control of its designer, and often of the user as well. □

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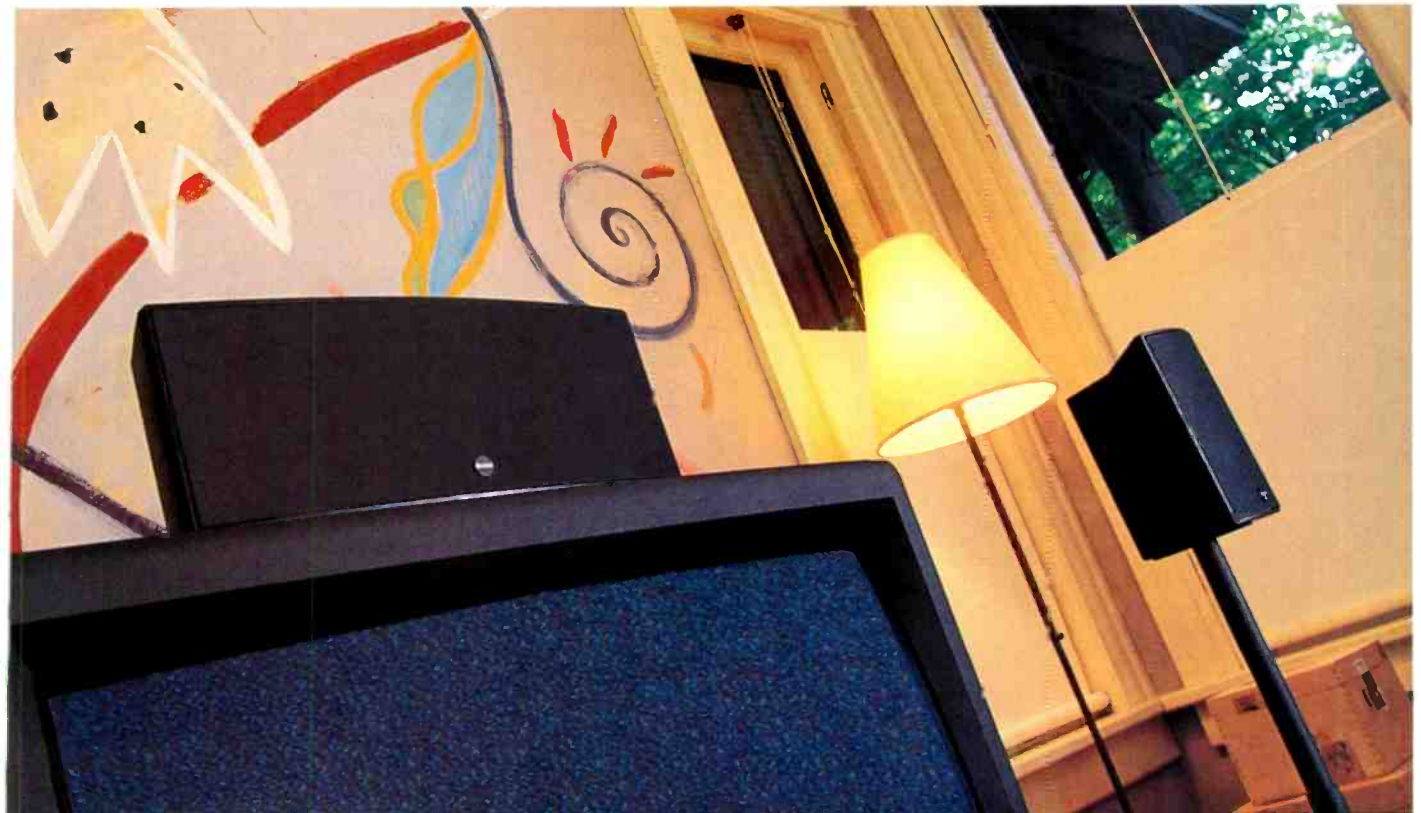
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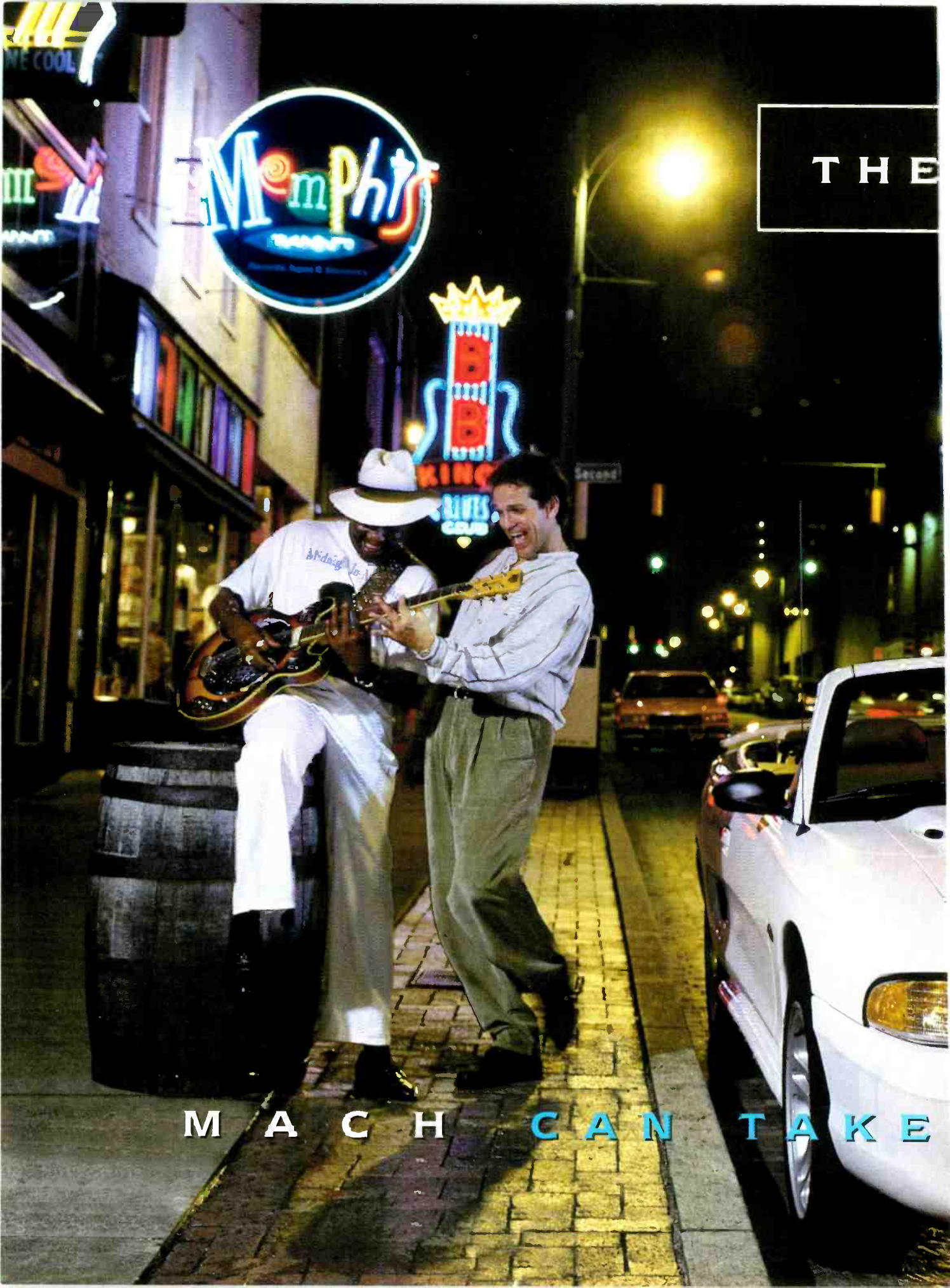
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YOU THERE.



RALPH MASCULLO

Harman Kardon AVR80 Audio/Video Receiver

DAVID RANADA • TECHNICAL EDITOR

I had a suspicion that Harman Kardon's AVR80 A/V receiver — one of the few models incorporating Home THX processing — was going to be a good unit even as I was unpacking it. It was the connector layout of the rear panel — a feature that directly reflects the layout and installation of the circuit boards inside — that tipped me off, for it indicated that the AVR80 was nearly identical to another receiver we had recently reviewed favorably: the Marantz SR-96 (in the August issue).

The rear-panel resemblance was more than skin deep. I pulled off the covers of both receivers and found that their innards were practically the same. The similarity extended to the layout and part numbers of most of the printed circuit boards and — more important, because they are the components that help determine output performance — the part numbers of the large power transformer, most of the power-supply capacitors, and all of the output transistors. With one significant exception, the Harman Kardon AVR80 and the Marantz SR-96 seem to be, electronically speaking, the same receiver. For the most part, even their remote controls are interchangeable.

There's nothing wrong with that. At last we have a case where all other things *are* indeed equal, so you can safely make a buying decision be-

tween these two fine products based on price, availability, styling, or the small number of features that differ between them. I wonder, in fact, why we haven't seen as much of such product "cloning" in audio as occurs in video, where there are a lot fewer camcorder manufacturers than camcorder brands.

In the case of the AVR80, it is probably the strict performance specifications laid down in Lucasfilm's Home THX standards that would lead several manufacturers to market a THX-pre-approved design rather than each having to go through the time-consuming and costly process of designing a complex new component from scratch and getting its THX certification.

And it is precisely the THX performance requirements that elevate the Harman Kardon AVR80 and the Marantz SR-96 above other A/V receivers with similar output ratings. Lucasfilm not only requires a THX receiver to have certain minimum output capabili-

ties in each channel but also to have complex bass-management circuitry to optimize the receiver's output into THX-certified home-theater speaker systems and similar high-performance systems. The AVR80 also provides the full complement of THX surround-sound processing (re-equalization, surround equalization, surround decorrelation), all performed digitally, as are standard Dolby Pro Logic decoding and processing for the receiver's other surround modes.

Complex bass-management circuitry (consisting of a subwoofer crossover and main-channel high-pass filtering) is made even more necessary by the AVR80's ability to amplify discrete multichannel signals, such as a Dolby Digital (AC-3) soundtrack decoded by an outboard box. Such signals, which can contain immense amounts of low bass, are fed into a set of rear-panel line-level connectors, all clustered together and called the 6-Ch. Direct Input. You switch the receiver to amplify these signals by pressing a front-panel button labeled 6-Ch Direct Mode. Since the discrete multichannel inputs are what protect this receiver from obsolescence under the impact of new multichannel media, it's surprising that you can't also switch them in with the supplied programmable remote (you can with Marantz's remote). You also can't apply THX processing, or any other surround processing, to discrete multichannel signals.

Rear-panel facilities duplicate, for the most part, those of the Marantz SR-96: audio-only connections for a CD player and two audio recorders as well as A/V connections for two VCR's, a laserdisc player, and an auxiliary A/V source. Another auxiliary

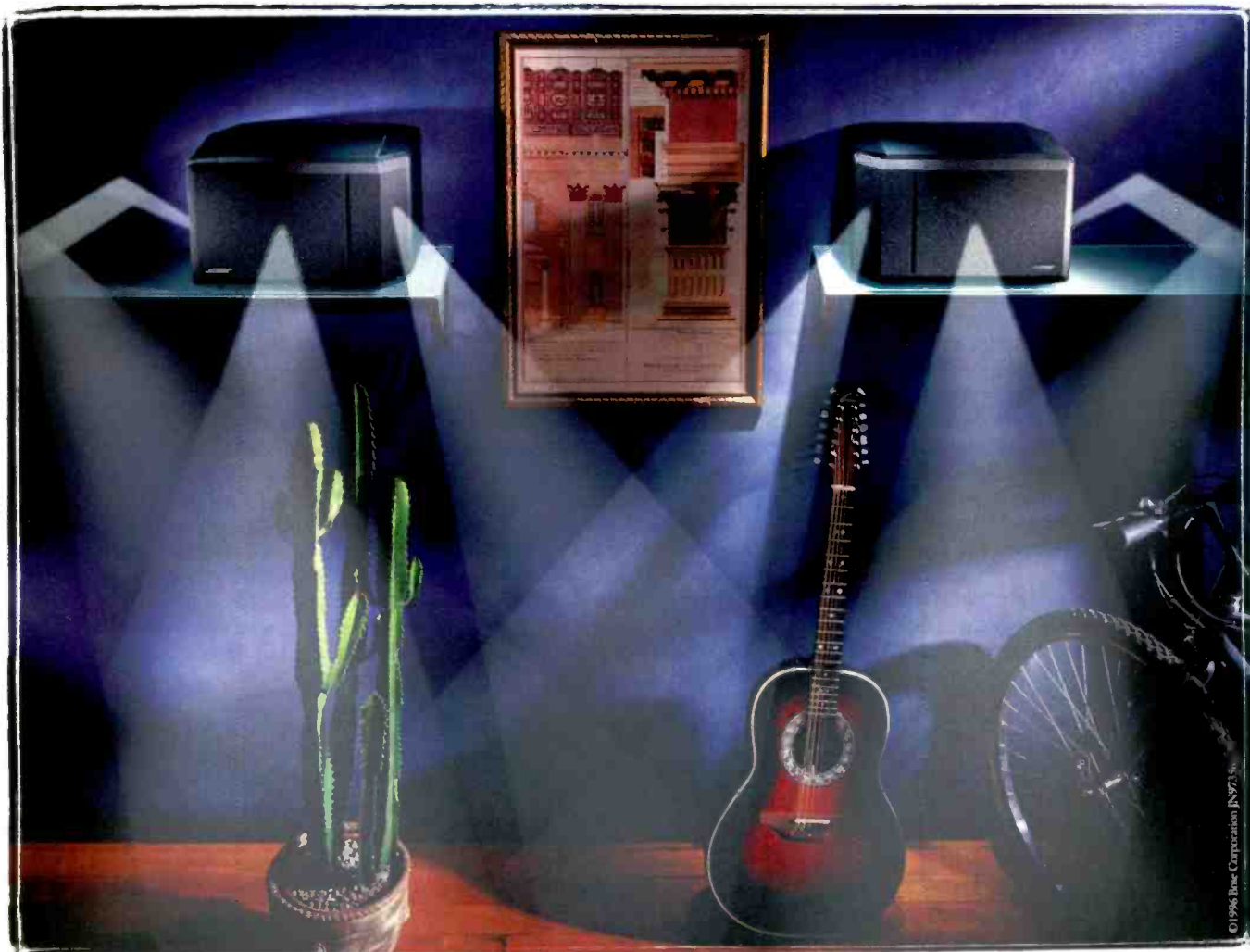
DIMENSIONS: 17½ inches wide, 6½ inches high, 18 inches deep

WEIGHT: 31 pounds

PRICE: \$1,599

MANUFACTURER: Harman Kardon, Dept. SR, 80 Crossways Park W., Woodbury, NY 11797; telephone, 1-800-645-7484

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TEST REPORTS

A/V input is located on the front panel for hookup to a camcorder or video-game console. All video connections, including the single TV-monitor output, are supplied with both composite-video and S-video jacks. The recorder connections allow taping one program while watching or listening to another. The AVR80 differs slightly from the Marantz receiver in having more elaborate facilities for multiroom operation, so its connector array for that purpose is different.

Speaker connections are via multi-way binding posts that accept dual banana plugs. An F-connector jack serves as the connection for an FM antenna, while the supplied AM loop antenna is attached with spring clips. A complete (five-channel) set of jumpered pre-out/main-in connectors is provided (ideal for use with a multi-channel equalizer) along with a line-level subwoofer output. There are two AC convenience outlets, one switched and one unswitched.

The primary feature that distinguishes the AVR80 from the SR-96 is its rear-panel coaxial S/PDIF digital au-



dio connection. Whenever you switch the receiver to the laserdisc input, if there is a signal present at this connector, that signal (and not the one at the analog laserdisc audio-input connectors) will go directly to the digital surround-sound processing circuitry, without the cycle of analog-to-digital conversion all other input signals must undergo. Even in stereo listening the *digital* laserdisc audio input is automatically used if connected, but you must still select the *analog* laserdisc

input for playback of older laserdiscs without digital soundtracks. A digital audio signal fed in through the coaxial input is not made available for analog recording at any of the tape outputs, however.

Like the Marantz SR-96, the Harman Kardon AVR80 has, besides Dolby Pro Logic and full Home THX processing and Dolby Digital compatibility, three auxiliary DSP modes: Movie, Hall, and Matrix. Movie mode is Dolby Pro Logic decoding with the surround-channel delay time adjustable up to 90 milliseconds (ms) instead of the Pro Logic maximum of 30 ms. The Hall mode generates multiple artificial reflections and sends them through all speakers of a system. The Matrix mode is similar in action to Hall but derives its reflection signals differently and feeds the center speaker with a reflection-free signal. Unlike the Marantz manual, the generally superior Harman Kardon instructions correctly describe the Dolby 3 Stereo mode as being for home-theater setups without surround speakers. Finally, as in other THX products, the mono

MEASUREMENTS

DOLBY PRO LOGIC PERFORMANCE

FREQUENCY RESPONSE

left, right	20 Hz to 20 kHz +0, -1.2 dB
center	20 Hz to 20 kHz +0, -1.5 dB
surround	20 Hz to 7.7 kHz +0.1, -3 dB

OUTPUT AT CLIPPING (8-ohm loads)

left, center, right	118 to 142 watts
surround	101 watts

NOISE (re 1-watt output, A-wtd)

left, right	-72 dB
center	-72 dB
surround	-72 dB

DISTORTION (THD+N, 1 kHz, 1-watt output)

left, right	0.03%
center	0.03%
surround	0.03%

SURROUND-DECODER INPUT-OVERLOAD

MARGINS (at 1 kHz)

left, right (re 2-volt input)	+1.2 dB
center (re 1.4-volt input)	+4.2 dB
surround (re 1.4-volt input)	+4.2 dB

SURROUND-CHANNEL NOISE-REDUCTION

CALIBRATION ERROR

re THX spec (141.4 mV)	0 dB
------------------------	------

CHANNEL SEPARATION (100 Hz to 7 kHz)

left output, right driven	>57 dB
left output, center driven	>48 dB
left output, surround driven	>53 dB
center output, left driven	>55 dB
center output, surround driven	>59 dB
surround output, left driven	>52 dB
surround output, center driven	>62 dB

THX RE-EQUALIZATION ERROR

16 kHz	-0.5 dB
20 kHz	-2 dB

THX SURROUND-EQUALIZATION ERROR

worst case	+0.9 dB at 1.6 kHz
------------	--------------------

TUNER SECTION

All figures for FM only except frequency response.

SENSITIVITY (50-dB quieting)

mono	20 dBf
stereo	32 dBf

NOISE (at 65 dBf)

mono	-67.5 dB
stereo	-66.5 dB

DISTORTION (THD+N at 65 dBf)

mono	0.17%
stereo (including pilot leakage)	0.175%

CAPTURE RATIO (at 65 dBf)

	1.5 dB
--	--------

AM REJECTION

	62 dB
--	-------

SELECTIVITY

alternate-channel	67 dB
adjacent-channel	8 dB

PILOT-CARRIER LEAKAGE

19-kHz	-78 dB
38-kHz	-67 dB

HUM

	-80 dB
--	--------

CHANNEL SEPARATION

100 Hz	41 dB
1 kHz	44 dB
10 kHz	39 dB

FREQUENCY RESPONSE

FM	30 Hz to 15 kHz +0.1, -1.7 dB
AM	77 Hz to 3.5 kHz \pm 6 dB

AMPLIFIER SECTION

All data for two-channel stereo operation.

OUTPUT AT CLIPPING (at 1 kHz)

8 ohms	123 watts
4 ohms	197 watts

CLIPPING HEADROOM (re 100-watt rating)

8 ohms	0.88 dB
--------	---------

DYNAMIC POWER

8 ohms	144 watts
4 ohms	250 watts

DYNAMIC HEADROOM (re 100-watt rating)

8 ohms	1.6 dB
--------	--------

DISTORTION AT RATED POWER

	0.02%
--	-------

SENSITIVITY (for 1 watt output into 8 ohms)

CD input	26.5 mV
----------	---------

NOISE (re 1-watt output in 8 ohms, A-wtd)

CD input	-84 dB
----------	--------

FREQUENCY RESPONSE (tone controls centered)

20 Hz to 20 kHz +0 dB, -0.47 dB

tone-control range

100 Hz	\pm 11.6 dB
10 kHz	+10.3, -10 dB

DIGITAL INPUT LINEARITY (-20 dBFS* = 1 watt output)

	+1.2 dB at -90 dBFS*
--	----------------------

DIGITAL INPUT EXCESS NOISE

(same readings with and without signal)	
EN16	4.0 dB
EN20	21.4 dB

* decibels referred to digital full-scale

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CELESTION

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THAT ARE
MAKING IT
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AND
MOVIES.

They're on display
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they've quickly
become one



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“mode” turns the amplifier output into
strict mono and sends it to the center-
channel speaker, if any.

Curiously, Harman Kardon, with its
tradition of “high-current” design,
rates the stereo operation of the
AVR80 at 100 watts per channel into 8
ohms, while the Marantz SR-96 re-
ceiver carries a 110-watt rating (re-
flecting a difference in maximum po-
tential output of an inaudible 0.41 dB).
With surround operation, the AVR80
is rated still more conservatively: 85
watts each for the front speakers (Ma-
rantz: 110 watts), 60 watts to each sur-
round speaker (Marantz: 90 watts).

No matter, for within our margins of
measurement error — which stem
from a combination of test-equipment
error, operator judgment calls, and, es-
pecially with tuner measurements, the
variations of the instrument readings
— and within expected sample-to-
sample variability, the AVR80's test-
bench performance was essentially
identical to that of the Marantz SR-96.
Harman Kardon could have easily
used the Marantz output power ratings
in both stereo and surround operation,
although the AVR80's lower rated
power increases its two headroom fig-
ures, which are based on rated power.
The one measurement we made that
may back up Harman Kardon's claims
of higher output-current capability than
the SR-96 is that for power at clipping
with 4-ohm loads, which is slightly
(0.23 dB) higher than Marantz's 187
watts. FM performance of the thirty-
preset tuner was again average.

In use, the AVR80 had the same
strengths and weaknesses as the SR-
96. Strengths included massive power
reserves, accurate and low-noise sur-
round decoding, the improvements
provided by THX processing on sound-
tracks, and a good on-screen display
system. Weaknesses included the use-
lessness of the Hall and Matrix modes
and the lack of a continuous numerical
volume readout in the otherwise useful
front-panel display (it appears only
when you change certain settings).

As we went to press, we were able
to hook up a brand-new external Dol-
by Digital decoder to the AVR80. Af-
ter some confusion in trying to sort
out the decoder's operating settings,
we confirmed that the Harman Kardon
receiver is both future-ready and fu-
ture-compatible (it was a Marantz de-
coder). The AVR80's power reserves
and background noise levels were ful-
ly up to the task of delivering all that a
Dolby Digital soundtrack can give. □



Waiting To Exhale/Sdtrk.
Whitney Houston, TLC,
Toni Braxton, more.
(Arista) 04466 \$

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The Bodyguard/Sdtrk.
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Joan Osborne: Relish
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Seal (1994)
(Warner Bros./Sire)
05907

Seal
(Warner Bros.) 61992

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Only Built 4 Cuban Linx (Loud Records) 00061 \$
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(Warner Bros.) 00569
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(Warner Bros.) 00796
- The Essential**
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(Verve) 00902
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(Bad Boy/Arista) 00968
- James Brown:**
20 All-Time Greatest Hits (Polydor) 01342
- Creedence**
Clearwater Revival:
Chronicle-
20 Greatest Hits
(Fantasy) 01520
- Foerplay: Elixir**
(Warner Bros.) 02142
- Faith Hill:**
It Matters To Me
(Warner Bros.) 02190

- R. Kelly (Jive)** 04549
- Ace Of Base: The Sign**
(Arista) 02354
- Yanni: Live At The Acropolis**
(Private Music) 02477
- The Tony Rich Project:**
Words (LaFace) 04582

- Dave Matthews Band: Under**
The Table And Dreaming
(RCA) 05998
- Collective Soul (Atlantic)** 08133
- Ray Charles:**
The Best Of The Atlantic Years
(Finno) 05755
- Barry White: All-Time**
Greatest Hits
(Mercury) 05866
- Brooks & Dunn:**
Waitin' On
Sundown
(Arista) 05888
- Anita Baker:**
Rhythm Of Love
(Elektra) 05980
- Alabama:**
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Vol. III
(RCA) 05996
- Boyz II Men: II**
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Different Times
(RCA) 12726 \$
- Tori Amos: Under The**
Pink (Atlantic) 02480
- Paul Westerberg:**
Eventually
(Reprise) 12548
- Sarah McLachlan:**
Fumbling Towards
Ecstasy (Arista) 02536
- The Best Of Sting**
1984-1994: Fields Of
Gold (A&M) 06357
- Sheryl Crow:**
Tuesday Night Music
Club (A&M) 03061
- Eric Clapton:**
The Cream Of Clapton
(Polydor) 08241
- Elton John: Greatest Hits**
Vol. 2 (Polydor) 03078
- Elton John:**
Made In England
(Rocket/PRR) 08583
- k.d. lang:**
All You Can Eat
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- Neil Young: Mirror**
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To Bring You My
Love (Island) 08066
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(Elektra) 11056
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Looking East
(Elektra) 11977
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Golden Heart
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(Atlantic) 11660 \$
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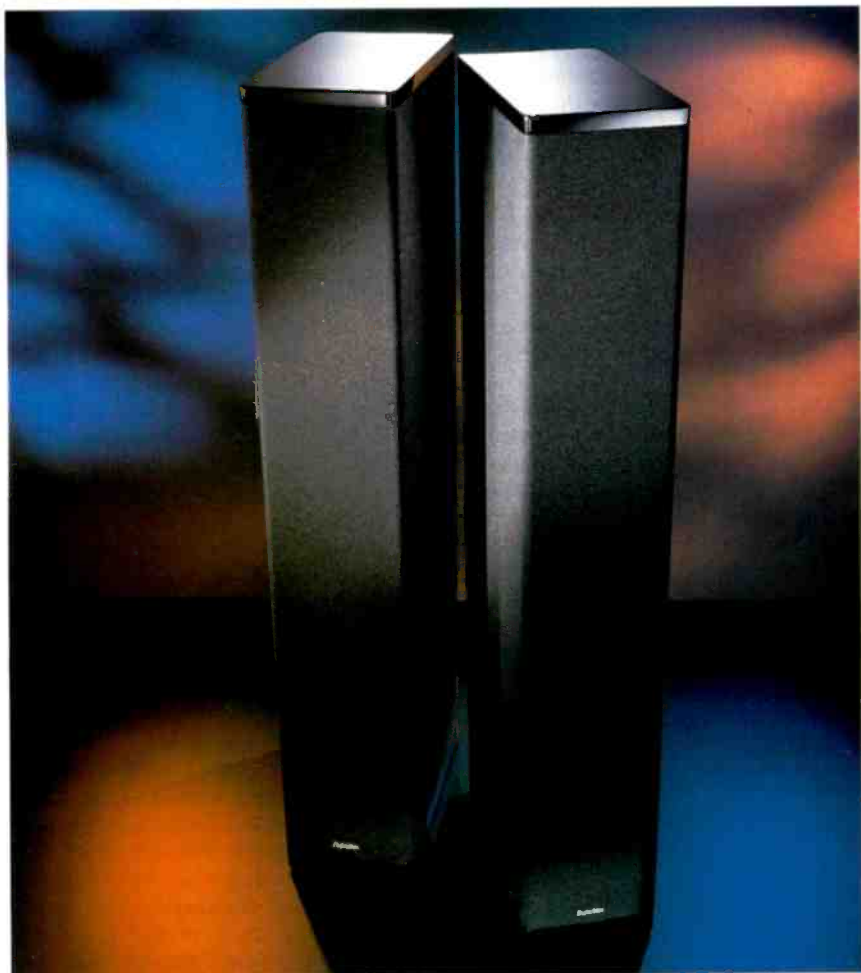
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TEST REPORTS



RALPH MASULLO

Definitive Technology BP 2002 Speaker

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Last year (September 1995) we reviewed an impressive new speaker system from Definitive Technology, the BP 2000. Its novelty did not lie so much in the specific design or size of its drivers and enclosure, or even in its built-in powered subwoofers, but rather in the combination of those features and others to create a distinct advance in overall performance quality and utility in high-quality, affordable home loud-speaker systems. To be sure, there are some speaker systems that are larger, have more drivers, and could probably outperform the BP 2000 in sheer sound volume. But they are also likely to fill a good-size room physically (as well as acoustically), and they are cer-

tain to cost much more than it does at \$3,000 a pair.

Definitive Technology has used its experience with the BP 2000 to create a smaller and even more affordable system embodying the same basic de-

DIMENSIONS: 43 inches high, 7¹/₄ inches wide, 14¹/₄ inches deep

WEIGHT: 65 pounds

PRICES: \$1,998 a pair with piano-black end caps; \$2,198 a pair with cherry end caps

MANUFACTURER: Definitive Technology, Dept. SR, 11150 Valley Heights Dr., Baltimore, MD 21117; telephone, 410-363-7148; World Wide Web, <http://www.soundsinside.com/definitive>

sign features and qualities. The new BP 2002 resembles the BP 2000 in configuration and finish, but it is substantially smaller and lighter than its illustrious ancestor (it occupies only $\frac{2}{3}$ square foot of floor space) and sells for about two-thirds its price. The principal performance difference between the two is in the deep bass extension of their powered subwoofers.

The BP 2002 is a columnar speaker, with a glossy black "piano finish" top plate and bottom edge trim (cherry end caps are available at added cost). Like the BP 2000, the BP 2002 has a heavily braced cabinet made of $\frac{3}{4}$ -inch, 1-inch, and 1 $\frac{1}{2}$ -inch high-density fiberboard bonded to foam damping pads. The cabinet, covered on all four sides (except for a jack/control panel on the back) by a black cloth "sock" that can be removed for access to the drivers, is fitted with adjustable feet to simplify leveling.

Also like the BP 2000 and several earlier Definitive Technology speakers, the BP 2002 is a *bipolar* system. It has two midrange/tweeter complements at the top of its slender cabinet, one on the front panel facing forward and the other on the back panel facing rearward. In each case, the 1-inch aluminum-dome tweeter is close to and below the 5 $\frac{1}{2}$ -inch-cone midrange driver. The front and rear drivers radiate in phase, in contrast to *dipolar* speaker systems, whose front and rear drivers are out of phase with each other.

Although the two pairs of drivers are identical, their enclosure volumes are different and their crossover networks have different slope characteristics. The result is said to be a smoother overall frequency response and improved blending with the subwoofer output. The signals from the rear drivers reflect from the wall behind the speaker, enhancing the sense of spaciousness. Definitive Technology recommends positioning the speaker at least 8 inches from the wall behind it.

Each BP 2002 has a powered subwoofer built into its base, with a 12-inch driver on the side of the cabinet, near the bottom. The subwoofer enclosure is vented through a rectangular port at the bottom rear of the cabinet. Although the BP 2002's can be set up with the side-mounted woofers facing each other (the left and right speakers are otherwise identical), the manufacturer recommends setting them up with the woofers firing outward, which is what we did for our tests.

The subwoofer is driven by an inter-

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TEST REPORTS

nal 125-watt amplifier, which switches on automatically when a signal is applied and shuts off a few minutes after it is removed. The lower third of the enclosure's rear panel contains a level control for the subwoofer and three pairs of dual binding posts for the speaker inputs (high-, middle-, and low-frequency), which are normally paralleled by jumpers so that the system can be driven by a single stereo amplifier. The jumpers can be removed for biwiring or triwiring the system.

The BP 2002, in addition to its music-playing capabilities, is designed to serve in a home-theater system in conjunction with Definitive Technology's center and surround speakers, which were not part of our test. Added bass flexibility is provided by a line-level (RCA-jack) input to the subwoofer



amplifier, which allows it to be driven directly from a preamplifier output, and another jack with an adjacent bass-level control knob for use in home-theater systems that have a low-bass output.

We made our room-response measurements of the BP 2002 system with several settings of the subwoofer level control. Obviously, individual installations will differ according to the listening environment and personal taste. We obtained the most pleasing audible balance (and flattest room response) with the subwoofer level set to approximately its 10 o'clock position. This yielded an averaged and smoothed response in our room of ± 5 dB from 20 Hz to 20 kHz. With the subwoofer level set to 12 o'clock the bass output was 5 to 10 dB stronger below 100 Hz — very impressive but somewhat larger than life.

Our quasi-anechoic MLS frequency-response measurement, which is

valid at frequencies above a few hundred hertz, was flat within ± 2 dB from 500 Hz to 20 kHz at distances of 1 to 3 meters (on-axis). This measurement showed moderate tweeter resonances at 15 and 19 kHz and a 2-dB dip at 2.6 kHz that may have been a crossover effect.

The tweeter's horizontal dispersion over a ± 45 -degree range was good, with a drop of only 8 dB in the 10- to 20-kHz range compared to the on-axis response. The close-miked subwoofer response, including the contribution of the port, was within ± 2 dB from 100 to 35 Hz and down 6 dB at 30 Hz. The upper limit of its frequency range appeared to be about 120 Hz at -6 dB.

The BP 2002 is a relatively efficient speaker. It has a rated sensitivity of 92 dB sound-pressure level (SPL) at 1 meter with a 2.83-volt random-noise input. The nominal impedance is given as 8 ohms, but we measured a minimum of 3 ohms between 150 and 400 Hz, a smooth rise to 31 ohms at 20 Hz, and a broad peak of 8 ohms at 2 kHz, presumably related to the crossover between the high-frequency and midrange drivers. From 4 kHz to 20 kHz, the impedance remained between 6 and 8 ohms. Although a 3-ohm minimum impedance might present a problem for some amplifier/speaker combinations (because it could require a high-current output from the amp), the BP 2002's high efficiency allows it to deliver a high output level with only moderate amplifier power demands.

We measured a sensitivity of 91 dB for the BP 2002 system. It was not particularly meaningful to measure the subwoofer distortion, which was audibly (actually *inaudibly*) low, since its output level normally has no fixed relationship to the overall signal applied to the other drivers and is set by ear for the most pleasing sound balance. The system easily generated a clean, full-range output at room-shaking levels, and with no signs of strain, playing a variety of music.

The slim profile of the BP 2002 (only 7¼ inches wide) not only makes it relatively unobtrusive but provides a wider angular coverage in the horizontal plane than a similar system with a wider front panel. Clearly, Definitive Technology has achieved its goal of creating a relatively compact and affordable speaker with the basic virtues of its flagship BP 2000 system and without any significant sacrifice of performance or styling. □



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Ensemble II

Ensemble II is our best value high-performance speaker system. It uses the same satellites as *Ensemble*, but with a single subwoofer cabinet that holds two 6 1/2" woofers in an acoustic suspension enclosure.



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Home Theater Technology says "Ensemble IV produces a level of sound quality that is so much bigger and better than you'd expect from an inexpensive system that it's almost ridiculous." **\$249.99**

The Outdoor

Our all-weather speaker is called *The Outdoor*. It has the natural, accurate, wide-range sound that Henry Kloss designs are known for. We don't know of any all-weather speaker that sounds better. Free-standing (shown), **\$299.99pr.** In-wall version, **\$349.99pr.**



Center Channel Speakers

Cambridge SoundWorks manufactures two speakers specifically for use as center channel speakers in Dolby® Pro Logic® home theater systems. Both are magnetically shielded so they can be placed near a TV or computer

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Inc. Magazine



Center Channel

Center Channel Plus



monitor. *Center Channel* is identical to an *Ensemble* satellite (but with magnetic shielding). **\$159.99.** *Center Channel Plus* uses an ultra-low, ultra-wide design that is ideal for placement above (or, with optional support stand, below) a TV monitor. It is, we believe, the finest center channel speaker available. **\$229.99**

Surround Speakers

Cambridge SoundWorks makes two "dipole radiator" surround sound speakers. Dolby Laboratories recommends dipole radiator speakers for use as surround speakers. *The Surround* has high power handling capacity and is often selected for "high end" surround sound systems. **\$399.99 pr.** The smaller *The Surround II* is arguably the country's best value in a dipole radiator speaker. **\$249.99 pr.**



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Slave Subwoofer

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The Surround II



The Surround



Powered Subwoofers

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CIRCLE NO. 6 ON READER SERVICE CARD



PHOTOS BY JOCK P. LEUNG

Niles SI-1200 Twelve-Channel Power Amplifier

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Niles Audio Corporation is primarily known as a manufacturer of in-wall loudspeakers and related products used for custom installations of home audio and A/V systems. Its new SI-1200, which Niles calls a System Integration Amplifier, is a unique product, containing twelve separate power amplifiers rated to deliver (simultaneously!) 25 watts per channel into 8-ohm loads, from 20 Hz to 20 kHz, with less than 0.13 percent total harmonic distortion (THD). The amplifiers can also be bridged to form six channels, each rated for 50 watts into 8 ohms with 0.1 percent distortion.

As befits an amplifier capable of delivering 300 continuous watts, the SI-1200 is relatively large and heavy, comparable to typical two-channel power amplifiers with similar total output ratings. Its steel cover and bottom plate are extensively perforated, and Niles says that no fan is needed in normal installations.

The front panel of the SI-1200 contains only a rocker-type power switch, which connects the amplifier to AC power, with a small red LED indicator above it. A nearby green LED indi-

cates that the amplifier circuitry has been activated, which can also be done via a signal-sensing circuit from a remote point. There is a pair of red LED's, one for each DC fuse, to indicate if one of these has blown.

The rear of the amplifier is fully populated by an imposing array of twelve pairs of binding-post speaker terminals suitable for lugs, wire ends, or single banana plugs. Unfortunately, they are too widely spaced to accept dual banana plugs. Above each speaker terminal is a gold-plated phono-jack input connector, a small level-adjustment knob, and a bridging switch to convert that pair of channels to mono.

Also located above each speaker terminal is a group of miniature Bus-Matrix switches that are used to assign that channel's output to the desired in-

put source, either the dedicated input from the plug below it or a left, right, or mono signal from a common program source fed to the amplifier's Main Bus. For example, the switches can be set to provide surround sound in the master bedroom, stereo in the den, and mono in the powder room. The connection versatility of the SI-1200 is limited only by the available program sources and the wiring from the amplifier to the speakers.

Installation versatility is further enhanced by the individual level adjustments for each of the twelve channels and by the three turn-on modes. In addition to the manual rocker power switch on the front panel, the rear-panel selector can be set to turn on the amplifier automatically when a program signal is present (Music Sense) or when an external control voltage is applied.

Other rear-apron features include the Main Bus signal inputs (standard RCA jacks), two 15-ampere fuse holders, a Ground Lift switch to minimize hum caused by ground loops, and Cascade Bus outputs that allow the SI-1200 to be daisy-chained with other amplifiers for greater total power or coverage of more remote areas.

Removing the cover of the SI-1200 reveals a single circuit board containing all twelve amplifier sections, in two rows of six. Each power-output stage is a single integrated circuit mounted on one of the two large heat sinks. A multitude of cables join the sections to the connectors and controls

DIMENSIONS: 17 inches wide, 5½ inches high, 15 inches deep

WEIGHT: 30 pounds

PRICE: \$1,000

MANUFACTURER: Niles, Dept. SR, 12331 S.W. 130th St., Miami, FL 33186; telephone, 1-800-289-4434

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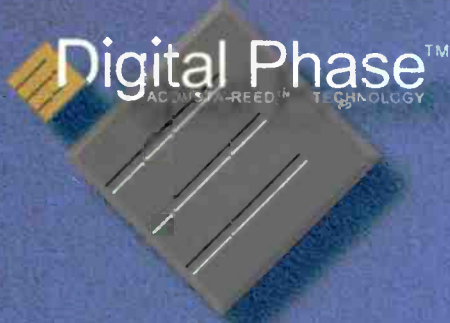
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on the rear apron of the amplifier. The power supply, which occupies about 40 percent of the area inside the SI-1200, is based on a large, shielded toroidal transformer.

Although we did not use the SI-1200 for a multiroom setup, we did confirm its essential performance as an audio amplifier by testing all twelve of its channels two at a time. Disregarding the "low" nominal power rating of each channel for the moment, it was soon clear that the SI-1200's basic design was sound (pun intended). Its ratings are conservative on the evidence of our two-channel measurements. Considering each two-channel module by itself, performance in the major characteristics of power output, clipping and dynamic headroom, distortion, noise, and frequency response was first-rate.

In an actual installation, the effective power is likely to be considerably greater than our steady-state measure-

ments might suggest (on the assumption that all twelve channels are not likely to carry the same program at high levels). In two-channel operation, the amplifier clipped at close to 40 watts per channel (approximately the dynamic power in our tests). Also, the distortion of each amplifier module was very low, measuring only about 0.01 percent at most power levels up to the clipping point (at 1 kHz). In the worst case (delivering 25 watts per channel into 8 ohms at 20 kHz), the distortion was a mere 0.08 percent.

And one should not forget that the SI-1200 was never designed to fill the role of a two-channel stereo amplifier. Many of its features are not needed in a conventional home music system, for which its exceptional versatility would amount to overkill.

Still, the possibility of having twelve high-quality, conservatively rated 25-watt power amplifiers in a single compact package for \$1,000 (only \$83 per channel, or \$166 per stereo pair) is intriguing. In addition to its intended role as the nucleus of a multiroom music system, the versatility and compactness of the SI-1200 would be hard to match with more conventional components.

The instruction manual for the SI-1200 is especially important given that the amplifier is such an unusual product. To Niles's credit, it is a very good manual, clearly and unambiguously presenting the amplifier's control layout, some of its many possible applications, and the functions of each of its special features.

All in all, the Niles SI-1200 is one of the most interesting amplifiers we have tested, as well as being a first-rate performer and a good value. Who could ask for anything more? □

MEASUREMENTS

All measurements are per channel, with two channels driven into 8 ohms.

OUTPUT AT CLIPPING
(at 1 kHz) 40 watts

CLIPPING HEADROOM
(re rated power) 2 dB

DYNAMIC POWER 40 watts

DYNAMIC HEADROOM 2 dB

DISTORTION AT RATED POWER
(25 watts) 0.011%

SENSITIVITY
(for 1 watt into 8 ohms) 29 mV

NOISE (re 1 watt, A-wtd) -83.5 dB

FREQUENCY RESPONSE
20 Hz to 20 kHz +0, -0.09 dB

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10-50 FEET

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GROUND LEVEL

Driver hits Play and Pioneer car speakers and subwoofers immediately respond. Passengers feel compelled to tear off shirts and mosh in backseat.

TEST REPORTS



PHOTOS BY JOCK & TELING

Bose Lifestyle 901 Music System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

About thirty years ago, an unconventional loudspeaker was developed by Dr. Amar Bose, a professor of electrical engineering and acoustics at M.I.T. The Bose 901 (which I reviewed here in September 1968) aroused considerable interest and controversy at the time because it departed radically from traditional speaker-design practice.

The novelty of the Bose 901's de-

sign arose from its five-sided yet distinctly triangular shape and its sound, both of which were clearly different from contemporary box speakers — and still are. Over the past three decades, the Bose 901 has undergone numerous refinements and improvements while retaining the original design concept. It remains the premier model in the Bose speaker line to this day.

Essentially, Dr. Bose designed the Model 901 to produce in the listening room approximately the same ratio of direct to reflected sound that exists in a typical concert hall. To accomplish this, the Bose 901 uses nine identical 4½-inch cone drivers (the original 901 had slightly smaller drivers), eight of which radiate to the rear while the ninth is centered on the front panel, facing the listening area. All of them carry the same signal, with no cross-over networks. The rear-radiating drivers are in two groups of four; each group is angled about 30 degrees from the perpendicular axis to the wall behind the speaker, one to the left and

one to the right, thus forming a “V”-shaped rear section. Three air vents, which Bose describes as an “Acoustic Matrix with three reactive air columns,” extend an inch or two from the rear of the cabinet.

The result of this unusual driver configuration is that about 89 percent of the output is reflected from the wall behind the speaker, imparting a slight time delay relative to the 11 percent that reaches the listener on a direct path. Of course, the actual delay in the reflected sound is a function of the location of the speakers in the room. Bose suggests placing them at least 2 feet or more from any sound-absorbent furnishings, 2 to 4 feet from the side walls, and with the rear panel ideally about 16 inches from the wall behind the speaker.

To compensate for the losses inherent in the reflection process, the original Bose 901 had a separate active

DIMENSIONS

Speakers: 21 inches wide, 13 inches deep, 31 inches high (with pedestals)
Music Center: 15½ inches wide, 8 inches deep, 2½ inches high

WEIGHT

Speakers: 52 pounds each
Music Center: 6 pounds

FINISH

Speakers: high-gloss black acrylic end caps, black grille cloth, and black anodized-aluminum pedestals
Music Center: brushed aluminum

PRICE: \$4,200

MANUFACTURER: Bose, Dept. SR, The Mountain, Framingham, MA 01701; telephone, 1-800-444-2673



The Music Center with the supplied remote control and AM antenna

equalizer that was inserted in the system amplifier's signal path. That function is now handled by the integral 100-watt-per-channel amplifier that powers the Lifestyle 901 system.

In recent years, Bose has added several Lifestyle music systems to its product line. Initially, these consisted of ultra-compact satellite speakers with a separate powered bass module and a unique Music Center incorporating a preamp, an AM/FM tuner, and a CD player or, more recently, a six-disc CD changer.

The new Lifestyle 901 system combines the control center of the Lifestyle 20 system (reviewed here in March 1996) with a pair of powered Model 901 speakers to create a rare amalgam of elegant styling, operating ease, and high-quality sound.

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The Music Center is a sleek, low-profile component, only 2½ inches high, finished in brushed aluminum with rounded front and rear edges. The right third of its front "panel" is a display window, black when the unit is off, that presents the full operating status of the system in highly visible green characters. It contains an AM/FM stereo tuner that can store up to twenty-five AM and twenty-five FM station frequencies for instant recall and a six-disc CD changer. Lifting the hinged front panel of the Music Center reveals a six-disc magazine that is ejected by pressing an adjacent button.

Although the Music Center's CD changer does not have the extensive programming capability offered by many stand-alone CD players (you cannot reorder tracks, for example), it does provide a random-play mode affecting all the discs in the magazine. The player can also select or skip any disc (or track) in the magazine, but it lacks the usual fast-forward/reverse scanning mode.

The Lifestyle 901 system includes a remote control, using UHF radio signals instead of infrared, that can operate the system without being in the same room as the Music Center (its range is said to be 65 feet). Like the

main display, the remote is a model of clarity, with crisp black letters and symbols on a white background. Most of its buttons are duplicated under the hinged front panel of the Music Center, where there are a couple of additional buttons that are used to program the tuner presets.

The rear panel of the Music Center contains sockets for its power supply

can be adjusted to control only the speakers in the secondary zone.)

Each speaker is attached to a pedestal, made of black anodized aluminum, that places the top of the enclosure 31 inches above the floor. The top and bottom plates of the speaker cabinet are made of medium-density fiberboard finished in a piano-like high-gloss black acrylic; the drivers are

The Bose Lifestyle 901 system combines a control center/tuner/CD changer with a pair of powered speakers in a rare amalgam of elegant styling, operating ease, and high-quality sound.

(a small separate unit), the supplied AM and FM antennas, a set of tape-recording inputs and outputs, inputs for one aux and two video sources, and multipin jacks for driving speakers in two different areas (zones) of a house. A second powered speaker system can be operated and controlled from the Music Center, with either the same or separate program sources in the two zones. (A separate remote-control unit is available from Bose that

concealed by a black cloth grille. The support column of the left speaker contains all the amplifier components, and on the rear of that column are the connectors and controls for the system. They include center-detented bass and treble tone controls (which are *not* accessible via the remote) and a system power switch, which can be left on at all times since the Music Center controls power to the system. The left speaker pedestal also has connectors for the cable carrying the audio signals from the Music Center and for sending the right-channel program to the right speaker. The Lifestyle 901 system includes all necessary interconnecting cables.

For this test, we evaluated the powered Model 901 speakers driven through the aux input of the Music Center. We were unable to place the speakers at the recommended 16-inch distance from the wall behind them (about 26 inches was the best we could do), but the other suggested placement criteria were satisfied. The room response, averaged for the left and right speakers, was measured from a point 12 feet from the left speaker, on its axis and about 30 degrees off the axis of the right speaker. The smoothed room response, averaged for both speakers, was within ±5 dB from 400 Hz to 16 kHz. Below 400 Hz the response showed the effects of room resonance (rather large variations in output readings).

As past experience has demonstrated (and as these measurements confirmed), defining the "frequency response" of a speaker that depends on both direct and reflected sound is considerably less exact than measuring

MEASUREMENTS

CD CHANGER

MAXIMUM OUTPUT (tape out) 2.44 volts

FREQUENCY RESPONSE (20 Hz to 20 kHz)
de-emphasis off +0.2, -0.1 dB
de-emphasis on +0.1, -1.1 dB

CHANNEL SEPARATION

100 Hz -130 dB
1 kHz -66 dB
20 kHz -33 dB

NOISE LEVEL (A-wtd)

de-emphasis off/on -83 dB (both)

DISTORTION

at 0 dBFS* 0.014%
at -20 dBFS* 0.145%

LINEARITY

at -60 dBFS* -0.13 dB
at -90 dBFS* -7.8 dB

EXCESS NOISE (with/without signal)

16 bits (EN16) 8.1/5.7 dB
20 bits (EN20) 25.2/23 dB

PITCH ERROR (in cents**)

. 0

DEFECT TRACKING

Pierre Verany test disc 3.0 mm

IMPACT RESISTANCE

. A

CUEING TIME

Disc 1 to Disc 2 12 seconds
Disc 1 to Disc 6 12 seconds

* decibels referred to digital full-scale

TUNER SECTION

All data for FM only except frequency response

SENSITIVITY (50-dB quieting)

mono 18 dBf
stereo 36 dBf

NOISE (at 65 dBf)

mono -75 dB
stereo -71 dB

DISTORTION (THD+N at 65 dBf)

mono 0.22%
stereo (mostly pilot-carrier leakage) 2.1%

CAPTURE RATIO (at 65 dBf)

. 1.5 dB

SELECTIVITY

alternate-channel 76 dB
adjacent-channel 11 dB

PILOT-CARRIER LEAKAGE

19-kHz -70 dB
38-kHz -70 dB

HUM (60/120/180 Hz)

. -73 dB

CHANNEL SEPARATION

100 Hz 37 dB
1 kHz 36 dB
10 kHz 34 dB

FREQUENCY RESPONSE

FM 20 Hz to 15 kHz +0.5, -0 dB
AM 40 Hz to 2.9 kHz +0.3, -6 dB

** one-hundredths of a musical semitone

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TEST REPORTS

the response of a conventional forward-firing system (and even *those* measurements are not necessarily easily interpreted). The unpredictable effects of multiple reflections, always a problem in speaker measurement, are a basic limitation in establishing numerical response ratings for the Lifestyle 901 system. Even "quasi-anechoic" measurements, such as the MLS system we use for conventional response testing, do not solve the problem, although they do give some idea of the overall response contours. This is probably one of the reasons Bose does not give out any numerical frequency-response data for its speakers.

The best way for me to describe the sound of the Lifestyle 901 system is to say that it was smooth and notably lacking in "edginess" despite a strong response up to the 16- to 20-kHz range. The stereo imaging, unlike that of some conventional speakers, was not of the "pinpoint" variety (which could hardly be expected given the uncertainties introduced by an undefined reflection delay from the 901's rear drivers). The bass was powerful and strikingly clean down to about 30 Hz, and we found that the system could easily deliver uncomfortably loud levels without audible distortion.

With some music, the Lifestyle 901 sounded a bit on the heavy side. But the tone controls on the left speaker pedestal provide about ± 6 dB of adjustment, which should be adequate for achieving a balanced response in

most setups. We experimented with these controls and found their center-detented positions to be just about right for most music.

We were curious about the stereo imaging qualities of the Lifestyle 901 (especially in our less than ideal installation), but the Delos "Surround Spectacular" demo/test CD (DE3179) put any doubts to rest. The imaging test tracks (produced by STEREO REVIEW's technical editor, David Randa) delivered clear, unambiguous localization of the test-tone position.

**The Lifestyle 901
system was smooth and
notably lacking in
"edginess," and the bass
was powerful.**

Although the system doesn't necessarily sound like other speakers, it will hold its own with the best of them.

The Bose Lifestyle 901 system is very simple and straightforward, which may disappoint people who thrive on numerous control knobs, operating modes, and buttons. But for sheer elegance and an ease of operation years ahead of many conventional systems, it is in a class by itself. Best of all, the system sounds as good as it looks! □



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for the money.”

- KWN, Editor
The Sensible Sound, Issue #54

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CIRCLE NO. 59 ON READER SERVICE CARD

Listening Tests

Surround

Audiophiles rate three

Shootout!

home-theater speaker systems

by Tom Nousaine

There's no denying that home theater and surround sound have moved audio into the family mainstream. Not too long ago, many an audiophile's biggest problem was convincing other family members to spend precious household income on hi-fi gear. Now, the family often encourages investment in a home theater, and the audiophile's No. 1 problem is competing with them to get a few hours on the system just to listen to *music*. What a turn of events!

As with conventional stereo, the speakers are a critical element of any surround setup, and where much of the system budget is likely to be spent. Three fronts, two surrounds, and a powered subwoofer add up quickly, and it's not unusual for

the demanding audiophile to shell out \$2,000 or more just on the speakers. So, to get a taste of what's available around that price, STEREO REVIEW asked three respected manufacturers — B&W, Cambridge SoundWorks, and M&K — to send me their best surround-sound speaker system under \$2,500. I then put this trio to a blind listening test with a panel of audiophiles to see how well they compared to a topnotch stereo reference system and, most important, to each other.

The Experiment

Surround-sound systems bring a new dimension to judging speakers. Although the main left and right front speakers still operate as a stereo pair, the center and surround channels have entirely different functions and require some additional listening and measurement skills.

For this test, the listening panel in-

cluded five audio enthusiasts, all experienced listeners ranging in age from 31 to 52. Following a training session and a dry run, the panelists rated each surround system relative to a high-quality stereo satellite/subwoofer "anchor" system composed of a pair of two-way bass-reflex monitors with a matching 12-inch powered sub. The anchor system, listed at \$1,750, was from a manufacturer other than the three being tested to prevent any coloring of the results. Using a stereo anchor provided a reliable reference against which each surround setup could be tested, and it emulated a common shopping situation in which the owner of a high-quality, two-channel stereo system upgrades to home theater. This procedure also allowed me to gauge the acceptance of surround sound in general against a two-channel stereo system of similar or better quality.

Using both movie scenes and Dolby-encoded music tracks, each surround system was evaluated in three areas. "Timbral accuracy/spectral balance" described a system's ability to reproduce acoustic instruments, natural sounds, and voices with clarity and realism. "Ambience reproduction" referred to a system's ability to provide a natural and spacious ambient field of the venue portrayed in the program material, such as a concert hall or a forest. And "localization" described the system's ability to place voices, instruments, or sound effects accurately in the sound field and, where applicable, to track the movement of sounds properly.

For each criterion, the test systems were given a numerical rating on a scale of +5 to -5, with the stereo anchor system assigned an arbitrary score of 0. Thus, a score of +2 indicated that the listener found the test system better than the anchor, and a score of -2 meant he found it worse. Following the listening tests, I measured the output of each subwoofer to further gauge the full extent of its dynamic capabilities.

The listening sessions were held in a 22 x 12-foot living room with a 51-inch rear-projection TV set located in the center of a short wall. All speakers, including the anchor, were draped with acoustically transparent cloth to hide their identities. Listeners were given no direct input as to type, cost, or topology of the three test systems or



**CAMBRIDGE
SOUNDWORKS**

Ensemble Satellites
Ensemble Woofer Modules
Center Channel Plus
Surrounds
Powered Subwoofer

B&W

DM602 Speakers
CC6 Center Speaker
DS6 Surrounds
AS6 Powered
Subwoofer

M&K

S-85 Satellite/
Surround Monitors
S-85C Center
Speaker
V-75 Powered
Subwoofer

Listening Tests



B&W 600 SERIES SYSTEM

L/R MAIN: DM602 speaker \$550 pr
CENTER: CC6 center-channel speaker \$350
SURROUND: DS6 THX-certified dipole surround \$600 pr
SUBWOOFER: AS6 powered subwoofer \$699
TOTAL SYSTEM COST \$2,199

MANUFACTURER'S SPECIFICATIONS

L/R MAIN: frequency response, 52 Hz to 20 kHz ± 3 dB; sensitivity (1W/1m), 90 dB; impedance, 8 ohms; power handling, 100 watts; dimensions, 19 $\frac{3}{8}$ x 9 $\frac{1}{4}$ x 12 inches (H x W x D); weight, 21 $\frac{1}{2}$ pounds.

CENTER: frequency response, 78 Hz to 20 kHz ± 3 dB; sensitivity (1W/1m), 89 dB; impedance, 8 ohms; power handling, 120 watts; dimensions, 6 x 17 $\frac{3}{4}$ x 10 $\frac{7}{8}$ inches (H x W x D); weight, 13 $\frac{7}{8}$ pounds.

SURROUND: frequency response, 85 Hz to 8 kHz ± 3 dB; sensitivity (1W/1m), 89 dB; impedance, 8 ohms; power handling, 100 watts; dimensions, 9 $\frac{3}{4}$ x 15 $\frac{1}{4}$ x 7 $\frac{1}{4}$ inches (H x W x D); weight, 9 $\frac{3}{8}$ pounds.

SUBWOOFER: frequency response, 30 to 140 Hz ± 3 dB; amplifier, 100 watts; dimensions, 20 x 17 $\frac{3}{4}$ x 17 $\frac{1}{8}$ inches (H x W x D); weight, 52 $\frac{3}{4}$ pounds.

WARRANTY: Five years, parts.

MANUFACTURER: B&W, Dept. SR, 54 Concord St., North Reading, MA 01864.

the anchor. The test systems were installed one at a time using identical speaker positions for all channels. The main left and right speakers were on stands arrayed across the front with the center speaker, which was placed atop the TV set. The surrounds were mounted directly to the sides of the main listening couch at an elevation of 6 feet. The left/right anchor speakers were on stands just to the inside of the main left/right test speakers and cross-fired to enhance the stereo image; they never moved during the evaluation. All subwoofers were placed in the right rear corner, except for the anchor system sub, which was located in the left front corner.

For the listening sessions, panelists were assigned seats in one of three locations: the center of the main listening couch (the "sweet spot"), which was 12 feet from the screen and 6 feet from the rear short wall; the end of the couch (slightly off-center), and the "cheap seats," which were wing chairs

along either side wall. Listeners kept the same seat assignments for the entire 2 $\frac{1}{2}$ - to 3 $\frac{1}{2}$ -hour session, leaving the room only to allow setup of the next test system.

Programs included 2 $\frac{1}{2}$ -minute excerpts from the Harrison Ford thriller *Clear and Present Danger*, both in Dolby Pro Logic and Dolby Digital (AC-3), the U2 *Rattle and Hum* stadium concert from a Dolby Digital laserdisc, and Dolby Surround-encoded excerpts of Copland's *Fanfare for the Common Man* from Track 9 of the Delos "Surround Spectacular" test disc and the *allegro pesante* from Track 1 of the Delos CD "Macal Conducts Glière." All were played on the Marantz AC-3-capable LV520 laserdisc/CD player and processed by the Yamaha RX-V2090 Dolby Pro Logic receiver with matching DDP-1 AC-3 decoder. The initial order of the system comparisons was determined by a coin flip

and was rotated for subsequent listening sessions. Program order was also originally assigned by a coin flip and subsequently alternated in order.

Switching between the stereo anchor and the current test system was conducted by the test administrator, and segments were not concluded until each listener had completed his ratings. Listeners were not allowed to discuss the systems during the sessions, although full details were disclosed upon completion.

An AudioControl 3050 spectrum analyzer was used to match the level of speakers within a surround system and to balance the subwoofer's bass output to the rest of the system. Levels were also matched between the test system and the anchor and rematched when switching from Dolby Pro Logic to AC-3 program material. After the listening sessions, I measured the output of each subwoofer below 80 Hz, where you need solid performance to achieve convincing dynamic impact.

The Systems

Two of the surround-sound suites, the B&W and M&K systems, contained six pieces: the main left and right speakers, a magnetically shielded center-channel speaker, a pair of surround speakers, and a powered subwoofer. The Cambridge SoundWorks system was an eight-piece array with two separate cabinets for each of its main left and right speakers, as described below. All three systems had in common banana-jack input terminals and a subwoofer with a 12-inch driver, an adjustable crossover, a two-position phase switch, a volume control, and both line- and speaker-level inputs.

B&W 600 Series System

B&W is best known among audiophiles for the Matrix 801 reference speaker, which has found its way into recording studios around the world. The system tested here, with a suggested retail price of \$2,199, is based on the recently revised 600 Series, which offers several different stereo monitors and, for the first time, a matching center speaker, a subwoofer, and a dipole surround for home theater.

The main left/right speaker is the DM602, a two-way speaker with a 19 $\frac{3}{8}$ -inch-tall bass-reflex cabinet. It uses a 7-inch Kevlar cone woofer and a 1-inch aluminum-dome tweeter. The woven Kevlar cone, which was developed by B&W for the Matrix and other speakers, is said to reduce cone res-

onances that can muddy the sound. Like all the 600 Series monitors, the DM602 has sculpted edges on the front baffle, rounded clamping rings for each driver, and rounded edges on the grilles, all to reduce edge diffraction. Flared cabinet ports control port noise. B&W rates the speaker's low-frequency limit as 52 Hz \pm 3 dB or 43 Hz \pm 6 dB.

The CC6 bass-reflex center speaker uses a pair of 5-inch Kevlar cones flanking the same metal tweeter used in the DM602. The 6-inch-high by 17 $\frac{3}{4}$ -inch-wide speaker uses the horizontal topology popular today. It's rated to deliver bass down to 78 Hz \pm 3 dB.

Following the principle that it's best to use similar drivers in all channels, B&W has given the DS6 dipolar surround speaker the same 5-inch Kevlar woofer found in the CC6, mated with a pair of 3-inch paper midrange/tweeter cones. Among the three test systems, the DS6 is the only THX-certified surround speaker. Its sealed cabinet is made of black (or white) plastic and is designed to be hung on a wall; the cabinet's shape, with its protruding baffle and uneven bottom, makes it a bit awkward for a shelf or a stand.

The AS6 subwoofer, with its 12-inch, long-throw paper cone, has a 20-inch-tall cube-like cabinet vented with two ports. Its built-in amplifier delivers 100 watts continuous power and has a "soft-limiting" circuit to prevent hard clipping. The low-pass crossover is adjustable from 40 to 140 Hz, and a high-pass filter for feeding satellites is fixed at 80 Hz. Low-frequency response is given as 30 Hz \pm 3 dB.

Except for the two plastic surround speakers, all the B&W cabinets are constructed from wood finished in black-ash vinyl. Each has an attractive, tough-looking black composite baffle embossed with a nice honeycomb pattern, as well as plastic snap-on grilles wrapped in black fabric.

Cambridge SoundWorks Ensemble System

Cambridge SoundWorks offers several possible variations for home theater systems. The one we tested is based on the Ensemble, the company's top stereo satellite/woofer system. With a total package price of \$1,930, it is the least expensive of the three surround-sound speaker suites chosen for our shootout.

The Ensemble stereo speaker sys-

tem, which reproduces the main left and right channels, is a four-box affair. There are two 8 $\frac{1}{8}$ -inch-high satellites, each having a 4-inch midrange and a 1 $\frac{3}{4}$ -inch cone tweeter with an integral $\frac{5}{8}$ -inch dome at its center. Two matching main left/right woofer modules each have an 8-inch long-throw driver mounted in a slender, internally braced enclosure measuring 21 inches tall by 4 $\frac{1}{2}$ inches deep. Cambridge says the woofer modules can be tucked away almost anywhere, which allows plenty of placement flexibility. I put them against the side walls next to the satellites, a position that usually enhances bass performance.

The satellites have a two-position midrange tone control that boosts frequencies between 600 Hz and 12 kHz by 2 dB in the "increase" position. A three-position high-frequency control

offers a "normal" setting and either a 2-dB boost or cut above 3 kHz. I used the "normal" settings for both controls in this installation.

The Center Channel Plus is unusually wide and slim even for a center speaker, measuring just 4 inches high and 25 inches wide; it can sit on the TV set or directly below it with an optional stand that supports the TV. The speaker uses the 1 $\frac{3}{4}$ -inch cone/dome tweeter found in the Ensemble, flanked by four horizontally placed 3-inch cone midranges.

The aptly named Surround has a dipole design that places a single 4-inch midrange on the face of each speaker and a 3 $\frac{1}{2}$ -inch cone radiating from each side of the cabinet. The Surrounds are sold as a matched pair and have left and right designations since certain drivers in each speaker are



CAMBRIDGE SOUNDWORKS ENSEMBLE SYSTEM

L/R MAIN: Ensemble dual satellite/woofer system.....	\$600
CENTER: Center Channel Plus	\$230
SURROUND: Surround dipole surround	\$400 pr
SUBWOOFER: Powered Subwoofer.....	\$700
TOTAL SYSTEM COST	\$1,930

MANUFACTURER'S SPECIFICATIONS

L/R MAIN: sensitivity (1W/1m), 85 dB; impedance, 6 ohms; power handling, 200 watts; dimensions, 8 $\frac{1}{8}$ x 5 $\frac{1}{4}$ x 4 inches (satellite, H x W x D), 21 x 12 x 4 $\frac{1}{2}$ inches (woofer module, H x W x D); weight, 4 $\frac{3}{4}$ pounds (satellite), 16 $\frac{1}{2}$ pounds (woofer module).

CENTER: impedance, 6 ohms; power handling, 100 watts; dimensions, 4 x 25 x 6 $\frac{3}{8}$ inches (H x W x D); weight, 11 $\frac{3}{8}$ pounds.

SURROUND: impedance, 6 ohms; power handling, 100 watts; dimensions, 8 $\frac{1}{8}$ x 5 $\frac{1}{4}$ x 5 $\frac{1}{4}$ inches (H x W x D); weight, 6 pounds.

SUBWOOFER: amplifier, 140 watts; dimensions, 27 x 15 $\frac{1}{2}$ x 12 inches (H x W x D); weight, 56 pounds.

WARRANTY: Seven years, parts and labor (two years for the Powered Subwoofer); 30-day money-back guarantee.

MANUFACTURER: Cambridge SoundWorks, Dept. SR, 311 Needham St., Newton, MA 02164. Telephone for direct sales, 1-800-367-4434.

Listening Tests



M&K S-85 SYSTEM

L/R MAIN: S-85 monitor \$695 pr

CENTER: S-85C center-channel speaker \$350

SURROUNDS: S-85 monitor \$695 pr

SUBWOOFER: V-75 powered subwoofer \$625

TOTAL SYSTEM COST \$2,365

MANUFACTURER'S SPECIFICATIONS

L/R MAIN: frequency response, 87 Hz to 20 kHz ± 2 dB; impedance, 4 ohms; power handling, 10 to 200 watts; dimensions, 10½ x 6¼ x 8¼ inches (H x W x D); weight, 9 pounds.

CENTER: frequency response, 87 Hz to 20 kHz ± 2 dB; impedance, 4 ohms;

power handling, 10 to 200 watts; dimensions, 6¼ x 10¼ x 8¼ inches (H x W x D); weight, 9 pounds.

SURROUND: frequency response, 87 Hz to 20 kHz ± 2 dB; impedance, 4 ohms; power handling, 10 to 200 watts; dimensions, 10½ x 6¼ x 8¼ inches (H x W x D); weight, 9 pounds.

SUBWOOFER: frequency response, 20 to 125 Hz ± 3 dB; amplifier, 75 watts; dimensions, 18½ x 15¼ x 21 inches (H x W x D); weight, 42 pounds.

WARRANTY: Five years (three years for the V-75 powered subwoofer).

MANUFACTURER: M&K, Dept. SR, 10391 Jefferson Blvd., Culver City, CA 90232.

phased differently. Each of the Surrounds and Ensemble satellites has a slot on the back of its cabinet that allows it to be hung on the wall.

The Cambridge powered subwoofer is designated — what else? — the Powered Subwoofer. Unlike most subs, which are cubic in shape, this speaker is basically a larger version of the rectangular woofer modules of the Ensemble stereo speakers. The sealed acoustic-suspension enclosure houses a 12-inch long-throw driver and a 140-watt amplifier with active equalization intended to help the sub reach below 30 Hz (Cambridge does not publish frequency-response specifications for any of its speakers). Its selectable crossover is adjustable for cutoff at 55, 80, 100, or 140 Hz. An optional Slave Subwoofer (not used for this test), which piggybacks on the Powered Subwoofer's amplifier but is otherwise identical, costs \$300. Connecting it to the Powered Sub bumps the

amp's power output to 200 watts; the combination is claimed to generate more than 100 dB of below-30-Hz bass in a 3,000-cubic-foot room.

The Ensemble satellites and the Surrounds come in a tough charcoal-gray Nextel finish, while the Ensemble woofer modules, the Center Channel Plus, and the Powered Subwoofer are finished in black vinyl. The Ensemble and the Surrounds can be ordered in white as well. All speakers have fixed wire grilles except the Center Channel Plus, which uses a snap-on plastic frame wrapped in fabric.

M&K S-85 System

Miller & Kreisel, popularly known as M&K, has a reputation for high-quality, no-nonsense speakers, and it was building earth-shaking stand-alone subwoofers long before home theater became fashionable. The company has taken the identical-driver topology to an extreme in this surround suite by

using exactly the same driver complement in all five basic channels. The left/right main and surround duties are all handled by identical S-85 monitors. The S-85C center-channel speaker appears to be identical as well, although the rear-panel label and the grille logo have been rotated 90 degrees to accommodate laying the speaker on its side.

The total suggested retail price for the system, with a V-75 powered subwoofer, is \$2,365. Even at that price, it is the only setup among the three test systems that has conventional front-firing surround speakers.

The front cabinet faces of all the S-85 speakers are angled by a little more than 10 degrees from one side relative to the other. The mains and surrounds are placed with the faces of the speakers angled in toward the main listening area. Similarly, the S-85C center speaker can be placed either below or above the TV set with the face aimed at a centered listener. Each of these 10½-inch-tall speakers (or 6¼-inch-tall, for the center speaker) contains a 5¼-inch polypropylene cone woofer and a 1-inch soft-dome tweeter. Frequency response is rated at 87 Hz to 20 kHz ± 2 dB.

The S-85 and S-85C also offer adjustable filtering and tonal balance. By connecting the speaker cables to the appropriate two binding posts (of four that are on the back panel), the user can select either full-range response or low-cut filtering, and either "normal" or "bright midrange timbre" tonal balance. Low-cut filtering rolls off the bass below 80 Hz and can help keep the woofer from being overtaxed by very high-power amplifiers. On the S-85C speaker, the built-in low-cut filter allows you to run a Dolby surround-sound processor in the Wide (full-range) center-channel mode, rather than the processor's Normal mode, which is customarily used to restrict the deep bass sent to small center-channel speakers. M&K says this arrangement is preferable because using the processor's Normal center-channel mode may negatively affect channel separation between the left, center, and right speakers.

Similarly, listeners can select the "bright midrange timbre" tonal balance to help optimize the sound in highly absorptive rooms or when the speakers are mounted on or near room surfaces. The tonal-balance settings can also be used to gain a closer match with non-M&K speakers. In our test

No matter where you are, you're there.

Musical truth.

Close your eyes.

Open your ears and the speakers disappear. You become at one with the music. Effortlessly transported to the expanded soundstage, precisely pinpointing each performer. Now, the transformation is complete.

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Energy PRO-series speakers

CIRCLE NO. 5 ON READER SERVICE CARD

ENERGY
LOUDSPEAKERS

Sound as a performance art.

Listening Tests

Audiophile Listening-Panel Results

All scores are on a scale of -5 to +5, relative to a high-quality two-channel satellite/subwoofer system assigned a value of 0. Numbers are the average score from all listeners, with lowest and highest scores given by any panelist shown in parentheses.

	TIMBRAL ACCURACY/ SPECTRAL BALANCE	AMBIENCE REPRODUCTION	LOCALIZATION
B&W	1.7 (0.7, 2.4)	1.7 (1.2, 2.0)	2.1 (2.0, 2.4)
CAMBRIDGE	-0.2 (-1.0, 1.5)	0.3 (-0.3, 1.3)	0.5 (-0.7, 1.3)
M&K	1.1 (0, 1.7)	2.1 (2.0, 2.2)	1.3 (1.0, 2.8)

system, I used the "normal" tonal setting for all the S-85 speakers, and the low-cut filtering option for the center and surround channels.

The V-75 subwoofer has a 12-inch long-throw driver and a 75-watt amplifier in a fairly tidy 18½-inch-tall box. The amp features a proprietary "Active Headroom II Maximizer" circuit that is said to provide full output from the amp and wide dynamics without clipping. The low-pass crossover is continuously variable from 50 to 125 Hz, and a fixed high-pass for satellites is set at 80 Hz. The low-frequency limit in an "average room" is given as 20 Hz \pm 3 dB.

The cabinets of the satellites, the center speaker, and the subwoofer are very sturdy and have a black-lacquer bead finish and fabric-wrapped particleboard grilles. These speakers look like they could be tossed down several flights of stairs with no ill effect.

Test Results

Several interesting observations can be made from the results of the listening tests. First, the B&W, Cambridge SoundWorks, and M&K systems were pretty evenly matched in overall performance, both to one another and to the stereo anchor system. With the scores from all listeners averaged (see table at top of page), the largest deviation from the anchor by any system for any of the sonic criteria was just 2.1 points of an allowable \pm 5 points. Nevertheless, the range of scores from all panelists for any system and criterion (given in parentheses) indicates that there were significant differences of opinion in some areas.

Another general observation is that a lower score for timbral accuracy/spectral balance was reflected in lower scores for ambience reproduction and localization. It seems that timbral ac-

curacy and spectral balance are still the touchstones for loudspeaker design.

Finally, the surround systems' scores for all sonic criteria increased for listeners located away from the sweet spot (see "Surround vs. Stereo?," page 76). A higher score doesn't mean that a given surround system sounded better off-axis than it did from the sweet spot. What it does mean is that, as a listener moved off-center, the difference between the stereo pair and the surround system became greater because the sound of the stereo anchor deteriorated more markedly. In other words, the anchor was simply unable to retain its

noted the "excellent small details," while yet another said the system had "more air and more energy at the frequency extremes" than the stereo anchor system. One more panelist called the B&W system "smooth, natural, and detailed."

The M&K system, meanwhile, was also cited for having "greater frequency extremes," "clearer vocals," and "more sense of air" than the anchor. But one panelist also found the M&K "a mite too sizzly," and another thought it "clean, but too bright."

The panelists were generally critical of the Cambridge SoundWorks Ensemble test system's timbral accuracy/spectral balance. One listener found the system "dry" and "lacking in involvement," while another panelist thought it was "a little harsh." Still another heard what he thought were "honky mids" and "dull treble."

Ambience Reproduction and Localization

Ambience reproduction and localization are distinctly different but related characteristics of a surround-sound system. Just as the front soundstage of a two-channel stereo setup has width, height, and depth, the quality of any surround system can be judged in terms of the completeness of its front-to-back ambient coverage as well as

Subwoofer Dynamics

Sound-pressure level with less than 10% THD.

	SPL AT 25 Hz	MAX. SPL/Hz	AVG. SPL 25-50 Hz
B&W	86 dB	99.8 dB/50	94.2 dB
CAMBRIDGE	95 dB	104.2 dB/31.5	99 dB
M&K	90 dB	103.9 dB/50	98.1 dB
ANCHOR	91 dB	102.3 dB/50	94.3 dB

quality of image and timbral accuracy in off-axis locations as well as the surround format. Surround's allure of better sound for a wider audience seems to be well grounded in fact.

Timbral Accuracy/Spectral Balance

In the critical areas of timbral accuracy and spectral balance, the B&W 600 Series system was the winner, beating the runner-up, the M&K S-85 system, by 0.6 point. One panelist noted the B&W system's "great balance," "rock-solid bass," and "best vocals." Another

its accuracy in placing and tracking sounds in that sound field.

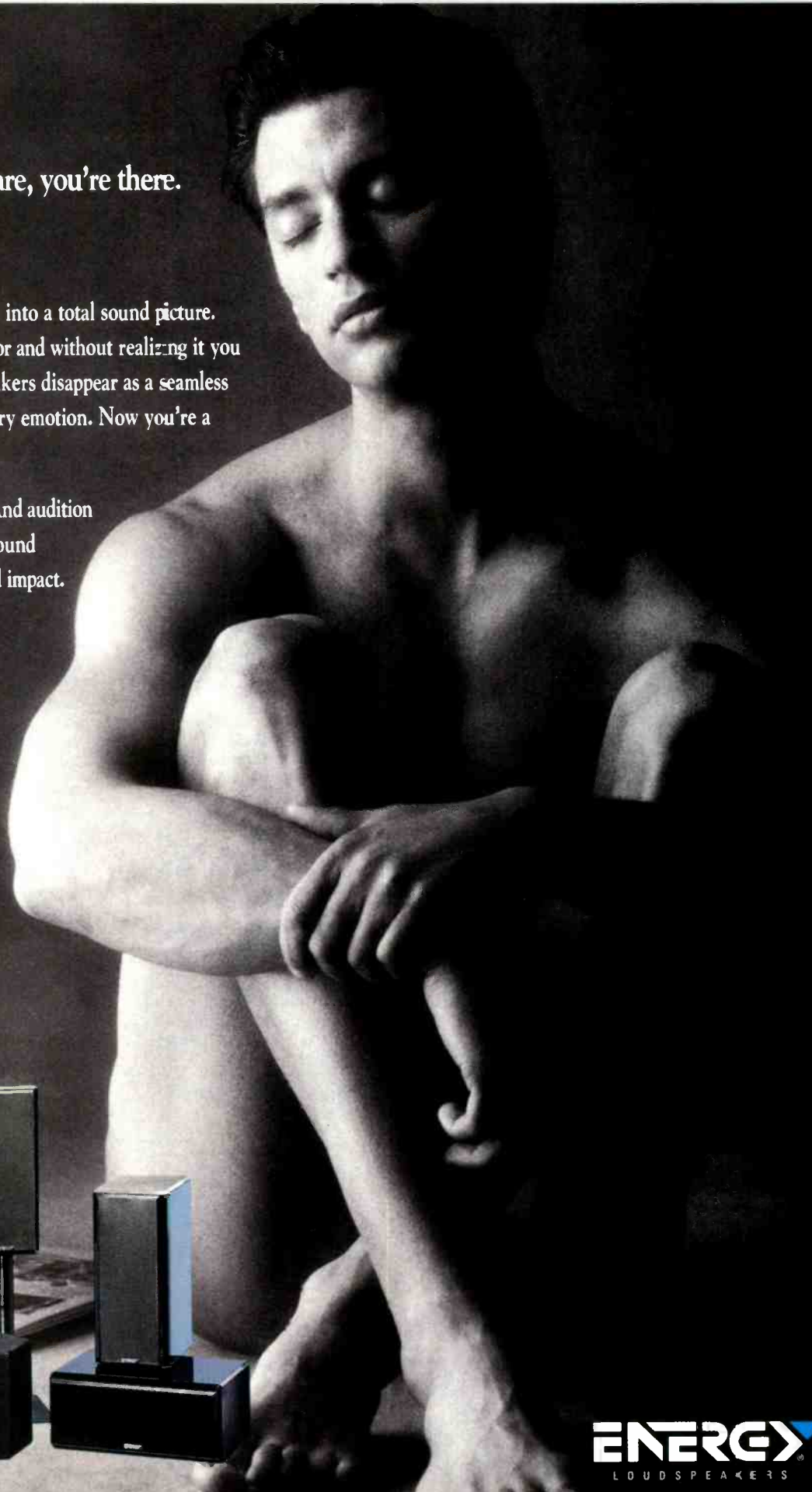
A good surround system provides a spacious and even ambient sound field, with the back timbrally matched to the front, and it should make you feel as though you are, say, in the middle of a big meadow being portrayed on the screen or inside a stadium full of U2 fans. This is hard to do well, and with lesser systems you will notice tell-tale gaps or unevenness in the sound field. A good system also tracks and places sounds with spatial and directional accuracy. In a lesser system,

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Listening Tests

sounds may drop out unexpectedly, jump from the front to the surrounds, or even change direction unnaturally.

Only if a system handles both ambience reproduction and localization correctly can you achieve the "you are there" feeling that lets you forget you're listening to electronic equipment and immerses you in the program. Hence, it's helpful to look at these criteria together.

The listening panel slightly favored the M&K system in these areas, scoring it the best for ambience reproduction and close behind the B&W system for localiza-

tion. One of the panelists described the M&K's "good image across the front and good depth," called it "open and spacious," and said "I felt like I was there" at the U2 concert "with the crowd all around me." In terms of localization, another noted the M&K's "good center image on vocals and dialogue." One panelist heard "good placement of off-center and off-screen sounds" with the M&K, and another found that jets "flew straight" in movie effects. The same panelist, who was sitting in one of the wing seats, noted "only a little near-side buildup and minor effect-jumping."

As noted, the B&W system also per-

formed well in these areas. A listener observed its "very open and natural, wide, spacious, and deep" sound field, while another said that, compared with the stereo anchor system, it had a "much wider and deeper soundstage." On localization, where the B&W surround suite edged out the M&K, a panelist described how in one movie scene a jet "goes right through me with no hesitation," and another said there was "excellent localization, especially in front."

The Cambridge SoundWorks system, while judged to be better for ambience reproduction and localization than the anchor, came in well behind the other test systems. One panelist noted an unnatural "jump on the fly-by" during a movie jet effect.

A Family Affair

Unlike the typical audiophile music system that tends to be a hobby for one person, a home theater system is a family affair that sees a lot of traffic from everyone in the household. Nevertheless, when it comes time to upgrade from a two-channel system to surround sound, it's usually the family audiophile who goes out to do the shopping. But sound can be a very subjective thing. Should the audiophile assume that the system he brings home will satisfy the whole family?

Hoping to answer that question, I invited a panel of "average consumers" to evaluate, under identical conditions, the same surround speaker systems reviewed by the audiophile listening panel. This ersatz "family" of six listeners included four women ranging in age from 18 through their mid-40's and two men ages 17 and 36. While they received the same training session and dry run as the audiophiles, none had any previous experience evaluating speakers or more than passing exposure to home theater.

As their scoring indicates, the "family" panel agreed with the audiophile panel that the B&W 600 Series system had the best timbral accuracy/spectral balance and also rated it highly for both ambience reproduction and localization. But these consumers rated the Cambridge SoundWorks Ensemble test system right up there with the others — in fact, preferring it over the M&K S-85 system, which they rated not much better than the stereo anchor system for timbral accuracy/spectral balance and placed last for ambience reproduction.

Why? It's impossible to draw any conclusions from the limited comments written on the score sheets. But what *is* clear is that the consumer scores are less extreme than those of the audiophiles, suggesting the "family" panel may have heard fewer differences between the stereo anchor and the surround test systems — or they may have simply been less enthusiastic about the good sound they heard and less critical of any faults. Put another way, the numbers bear out that career audiophiles are simply more opinionated about sound than average consumers. — T.N.

"Family" Listening-Panel Results

All scores are on a scale of -5 to +5, relative to a high-quality two-channel satellite/subwoofer system assigned a value of 0. Numbers are the average score from all listeners, with lowest and highest scores given by any panelist shown in parentheses.

	TIMBRAL ACCURACY/ SPECTRAL BALANCE	AMBIENCE REPRODUCTION	LOCALIZATION
B&W	1.2 (0.8, 1.8)	1.1 (0.6, 1.3)	1.3 (1.0, 1.7)
CAMBRIDGE	1.1 (0.4, 2.1)	1.1 (0.7, 1.7)	1.5 (0.8, 2.0)
M&K	0.2 (-2.0, 1.5)	0.8 (-1.3, 2.7)	1.3 (-0.3, 2.2)

Subwoofer Dynamics

If the Cambridge system fell behind the others in the listening tests, it blew them away on dynamics, as it clearly had the best subwoofer of the pack (see table on page 72). While all the systems delivered 25 Hz with less than 10% distortion, the Cambridge played significantly louder at lower frequencies. The M&K sub was next, with decent if not spectacular performance, and the B&W sub trailed it by several decibels.

Some general comments about the three subwoofers: Because they are designed with enough gain to allow setup with either line- or speaker-level inputs, the subs all tended to hum when set to higher volume levels. They also tended to telegraph their location with mechanical noises or distortion when pushed to the limits. Several panelists noted the effect as an overall limitation without regard to any specific system.

Conclusions

Declaring a winner of this surround shootout is a little more complex than simply averaging the scores for each system in the different areas rated and giving the nod to the highest score. For one thing, most audiophiles would agree that timbral accuracy/spectral balance should carry more weight than the other two categories. The measurements for subwoofer dynamics that were conducted outside the subjective listening tests must also be taken into account, as should the price/value equation.

Given all these considerations, the B&W 600 Series system is the winner. It was the favorite in the impor-



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Surround vs. Stereo?

Is stereo in fact dead? It's a question often asked in this new era of multichannel home theater, even in the pages of this magazine. And it is likely to be an unsettling question for some readers.

Interestingly, the average age of my audiophile listening panel was 45 years old. My suspicion is that many hi-fi enthusiasts became interested in audio during the Golden Age of Stereo in the 1960's, '70's, and early '80's and are still psychologically married to two-channel stereo. Indeed, I often see friends tenaciously clinging to stereo as somehow being more "natural." At least two of my panelists held this belief prior to these listening sessions.

Afterward, however, everyone who participated on the audiophile and "family" panels agreed that the differences between the surround test systems were far less dramatic than the difference between the stereo anchor and the test systems, and even reticent audiophiles seemed to become surround-sound converts. The message: If you are not already listening to multichannel surround, you will most likely be happier with a surround system — at least, any of the systems tested — than you are now with your two-channel stereo setup.

The scores also confirmed that surround systems of roughly similar cost (\$1,930 to \$2,365) were generally superior to a high-quality two-channel system (\$1,750) in virtually every respect. And the average scores for all the systems accumulated by listening position (see table below) dramatically show that the surround systems not only provided better sound but did so for more than one person at a time.

Most people don't know (or have long forgotten) that when stereo was first demonstrated at Bell Labs, it was a *three*-channel format. Speakers for left, center, and right channels were found to be the smallest practical number that could provide acceptable front imaging. Stereo was ultimately developed in two channels mainly because the most practical media at the time — LP records — could support only two channels, not because two-channel reproduction was optimal.

But that has changed. While most music is still released in two channels, playing stereo recordings through an audiophile-quality surround processor set to an enhanced ambience mode, or even to Dolby Pro Logic, is a viable, even preferred, option to listening to two speakers. In any event, having a surround system gives you the option of using whatever reproduction method you prefer for any source. Best of all, it allows you to enjoy a whole genre of multichannel music. More and more surround-encoded music CD's are being released all the time. And I should warn you that when you add in a video monitor for true home theater, you'll find literally hundreds of opera, classical, jazz, and popular performances now available on VHS tape and laserdisc. — T.N.

Surround vs. Stereo: Analysis by Listening Position

All scores are on a scale of -5 to +5, relative to a high-quality two-channel satellite/subwoofer system assigned a value of 0. Numbers are the average performance by listening position for all three surround test systems, as recorded by all listeners. Note that higher scores for off-axis listening positions do not indicate better sound, but rather that the surround systems, relative to the stereo anchor, were better at maintaining their timbral accuracy/spectral balance, ambience reproduction, and localization away from the sweet spot.

	TIMBRAL ACCURACY/ SPECTRAL BALANCE	AMBIENCE REPRODUCTION	LOCALIZATION
SWEET SPOT	0.5	1.0	1.1
OFF-CENTER	0.7	0.7	1.3
WING SEATS	1.7	1.8	2.0

tant area of timbral accuracy/spectral balance, edged out the competition in localization, and performed respectably in ambience reproduction. In other words, it was the most tonally accurate system with excellent spatial performance, and its median \$2,199 price tag suggests good value.

Second place goes to the compact M&K S-85 system, which performed well, was the most rugged, and took up the least amount of space. But it also costs more than the others, and though the listeners rated it favorably for ambience reproduction and localization, many similarly priced systems have dipole surrounds.

The Cambridge SoundWorks Ensemble test system takes third place on the basis of its scores in the listening trials. Nonetheless, it was still nearly equal to the excellent stereo anchor system for timbral accuracy/spectral balance, and it was preferred to the anchor in ambience reproduction and localization. It had the best subwoofer in the test group by a fair margin and was also the least expensive system, costing \$435 less than the M&K setup and \$269 less than the B&W. And it should be noted that another listening panel brought in to hear the systems (see "A Family Affair," page 74) rated the Cambridge considerably better than did our panel of audiophiles.

A few closing notes about shopping for a surround-sound system. All the panelists agreed that differentiating these systems was much easier with movies like *Clear and Present Danger*, which have big contrasts in the types of sound fields portrayed from scene to scene, highly dynamic material that taxes surround-system limits, and plenty of moving sounds. Before you start shopping, familiarize yourself with scenes from a favorite movie.

When auditioning a surround system, it may also be a good idea to ask the salesman to turn down the subwoofer so that you can avoid being distracted by bombastics and other special effects while you're trying to get a feel for how the system sounds. Most dealers will crank the subwoofer anywhere from 3 to 6 dB relative to the midrange for demonstration purposes, and that's probably how you'll prefer it in your home. But unless you're testing dynamics, that's not always the best way to conduct your own in-store surround shootout. □

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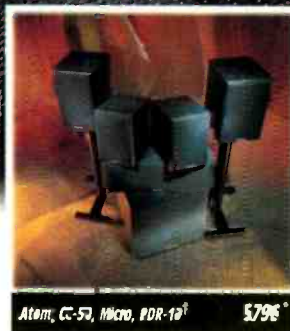
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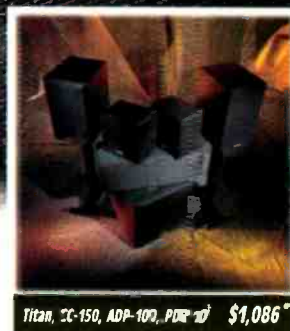
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In-Walls

BY THOMAS YOUNG

Close your eyes and travel back in time to your high-school days. Remember those round, perforated speakers mounted high overhead that crackled out the principal's morning address? Well, back then that was the primary application for "in-wall" speakers: high-volume, low-fidelity sound reinforcement. You can open your eyes now.

Today things are different. Sure, in-wall speakers are still used for sound reinforcement, but a new category of high-performance in-walls has evolved, providing the foundation for "unobtrusive audio" design.

Such design addresses the common desire to minimize the visibility of audio equipment in the home and simplify its usage. The problem is that traditional components, such as rack electronics and, especially, speakers, tend to dominate a room. That may not be an issue for the family audiophile, but it can be for members of the household who have different aesthetic sensibilities or different space priorities.

Manufacturers have responded to this conflict by producing "architectural" or "designer" audio equipment that can be built right into the struc-

Choosing and
using in-wall
loudspeakers
for music and
movies



The Sonance T2000 (\$275 a pair) features a 6½-inch woofer and a ¾-inch, pivoting tweeter that can be aimed at the listening area.



Circular speakers may be better for ceiling installation than rectangular in-walls. The Boston Acoustics Model 335 (\$250 a pair), with a 5¼-inch copolymer woofer and a ¾-inch dome coaxial tweeter, mounts in a 6¾-inch hole.



Triad's THX-certified Inwall Gold/10 LCR (\$1,100 each) has two 6½-inch woofers and a 1-inch fabric dome tweeter with a dispersion lens — all mounted on a pivoting baffle.

ture of a house or apartment so that it's effectively out of sight. In the case of speakers, this usually means "hiding" them in the walls, ceilings, or floors.

Why In-Walls?

In-wall speakers are offered by a large number of manufacturers in a plethora of designs and styles, many intended for specific applications — including home theater. They can be used almost anywhere music reproduction is desired, but a great many of them wind up in kitchens, dining rooms, bedrooms, home offices, and other locations where people use them for background music. In these settings, traditional audiophile criteria — such as smooth frequency response, accurate imaging, and high power-handling capability — might not be top-priority considerations.

But those of us who turn to in-wall speakers for use in a primary audio system or home theater demand high performance in all of those areas. Actually, what we really want is to have the attributes of good freestanding speakers without having to fill a room with boxes and wires. And in-wall speakers are uniquely suited to deliver just that.

Of course, many enthusiasts harbor the opinion that in-walls are poor cousins of their freestanding counterparts. After all, if one of the most important elements of a speaker is its cabinet design, how could a bunch of open-backed drivers stuffed into a wall sound any good? In reality, there is some truth to this argument, but the situation is not quite so simple. Like other audio components, in-wall speakers have advantages and disadvantages. Nonetheless, when they're properly made and installed, with some attention to system and room design, they can provide excellent sound quality.

One disadvantage of installing an open-back speaker in a wall is that you don't really know how it's going to sound until it's in place. In other words, it is difficult to control the performance of a speaker when the size and resonance of its enclosure, in this case a cavity behind the wall, are largely unknown. Most manufacturers

of in-wall speakers compensate for this by using drivers that have special characteristics, like stiff suspension or reduced voice-coil travel. A few others have chosen simply to offer in-wall speakers with integral sealed enclosures. The difference in sound? It depends on the manufacturer and the speaker. We suggest that you listen to both types of speaker before you buy.

It should also be noted that in-wall speakers differ from freestanding models in another significant way: You can't move in-walls around in the room to fine-tune their response the way you can reposition conventional speakers. Once the speakers are in the wall, there's no experimenting with location.

Advantages? Sure. Besides being unobtrusive, in-wall speakers are relatively free of "edge-diffraction distortion," a form of coloration that occurs when the sound coming from a speaker is diffracted by the edges of its cabinet. Since in-walls have no cabinet edges to speak of, this distortion is greatly reduced.

In-Wall Variations

The standard in-wall speaker is a relatively simple affair. It consists of a baffle or plate that holds the drivers and crossover, a frame, and a painted metal grille. The whole assembly is designed to be securely mounted in a hole cut in the wall or, if the room is under construction, on a frame that is fastened to the wall studs. The actual mounting technique differs according to the manufacturer, but generally in-walls are either clamped directly to the back side of the wall surface or mounted on a frame or brackets secured to the wall studs.

Most in-wall speakers are two-way systems that use conventional cone and dome drivers, with a single woofer for bass and midrange frequencies and a tweeter for the highs. Dividing the signal is a passive crossover that can be as basic as a single capacitor or as complex as the intricate multipole designs in expensive freestanding speakers.

As noted, a smaller number of in-wall speakers have been designed with an integral "back box" that essentially gives the speaker an acoustically sealed enclosure. Companies such as Cambridge SoundWorks, RBH Sound, and Triad offer sealed in-wall speakers. Taking this design approach a little further, In-Wall Audio makes a line of in-wall speakers that are not only



In-wall speakers, like this Boston Acoustics Model 381 (\$500 a pair), are usually installed one of two ways. For existing walls, mounting tabs behind the baffle (or, in this case, a mounting frame) can be tightened

from the front to hold the speaker in place (photos 1 and 2). For installation in new construction, an optional bracket that mounts directly to the studs is available (photos 3 through 5).

designed to perform like large, freestanding speakers, but almost look like conventional towers or bookshelf speakers. These tall but narrow rectangular speakers are installed between the wall studs and are thus completely enclosed by the finished walls.

Many manufacturers offer in-wall subwoofers for bass reproduction. Most are standard open-back designs with one large driver and a low-pass crossover that limits the input signal to just the bass frequencies. Audio Electronics Systems, or AES (a speaker company based in Marblehead, Massachusetts, not the Audio Engineering Society), offers a nice variation: a dual-voice-coil woofer that accepts signals for both the right and left channels. Another subwoofer variation is offered by MTX with its "in-floor" speakers. The FS8A (\$240) and the FS10A (\$200) are designed for placement in the floor (or low on a wall) and fire through a thin, unobtrusive grille.

Some in-walls feature pivoting tweeters. Since high frequencies are more directional than lower frequencies, these speakers allow the installer to optimize the tweeter's radiation pattern by aiming it toward the main listening area. AES, Apogee, Martin-Logan, MTX, Parasound, Sonance, and Triad are a few companies that make in-wall speakers with adjustable tweeters. Another option for the discriminating listener is high-performance ribbon tweeters, available in in-wall models from Infinity, a/d/s/, Apogee, and Martin-Logan.

In-wall dipole surround speakers are also becoming a popular option for home-theater applications. These speakers fit into frames mounted in the wall, protruding just a few inches so that the drivers can fire in opposite directions. Only a handful of companies

make these at the present time. Triad offers an in-wall version of its THX-certified OnWall Silver dipole speaker (\$1,000 each), and Snell Acoustics has the SUR800 (\$1,399 each). A more affordable but still audiophile-quality alternative is the Atlantic Technology 254.1SR surround speaker (\$399 a pair), which can be mounted either in or on a wall.

One other variety of in-wall speaker is intended for that very special place in the home where we could all use some good music once in a while, but where, unfortunately, most speakers dare not tread. Everyone knows that bathrooms are frequently clouded with steam, so they're an inappropriate place for audio gear, right? Well, not absolutely. Some manufacturers, including N.E.A.R. and MTX, now offer in-wall speakers that thrive in humid

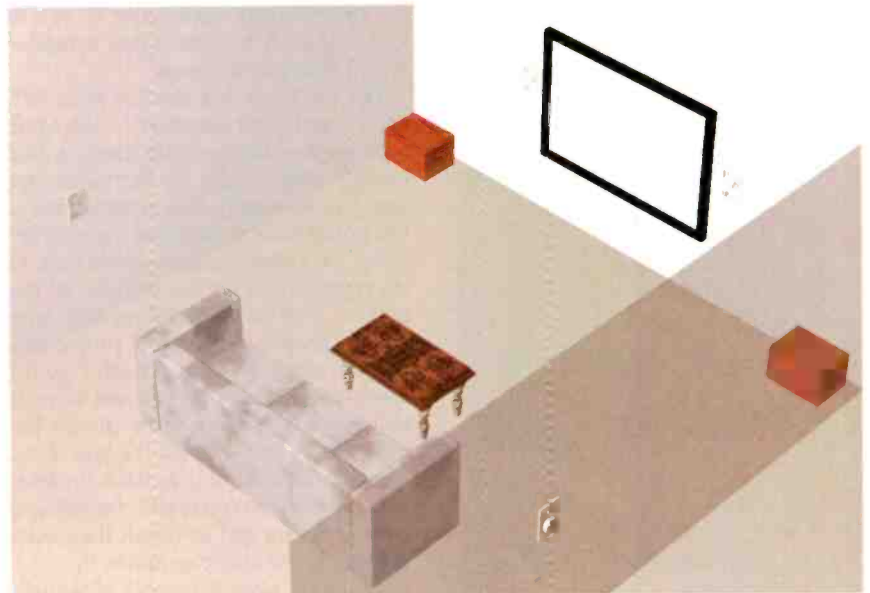
environments; they can even be put right in the shower stall. How's that for singin' in the rain?

Positioning In-Walls

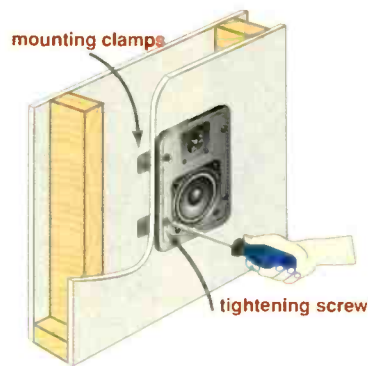
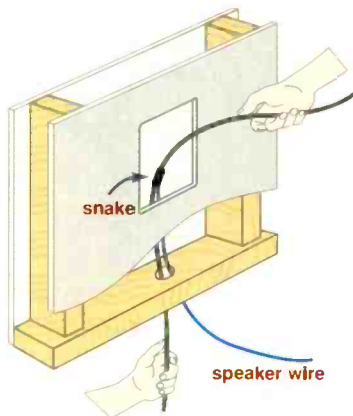
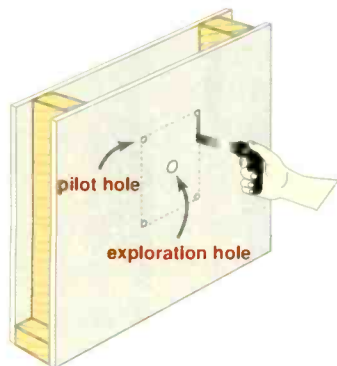
The placement of any speaker, whether freestanding or in-wall, can affect the quality of sound in the listening environment. And, as we mentioned before, the ability to experiment with placement of in-wall speakers is limited. So you'll want to get it right the first time around.

If you are installing in-wall speakers in a room primarily for background music, their location can be driven by aesthetic criteria. Still, you may want to consider a few basic rules of thumb to optimize the quality of their sound.

First, if you can, place the speakers somewhere around ear level or slightly higher. It is best for the listeners to re-



Speaker placement is critical for in-wall home theaters. A typical arrangement finds the main left and right speakers flanking the screen, with the center speaker above or below it and the surrounds placed to the sides and high above the listening area. Freestanding or in-wall/in-floor subwoofers can often be placed in corners.



Once you've chosen the location for an in-wall speaker, drill an exploration hole and probe the wall cavity with an electrician's snake. If the space is clear of obstructions, the cutout can be drawn and pilot holes drilled to facilitate a keyhole saw (left, and Step 3 in text). To run a speaker wire from below, drill a hole in the appropriate

stud and carefully maneuver the snake to the cutout. Then, attach the speaker wire to the bottom end of the snake with electrician's tape and have a helper pull it out from above (center, Step 6 in text). Finally, connect the wire to the speaker and mount it to the wall (right, Step 7 in text).



Hidden behind the grille of Parasound's CS/S250A (\$149 a pair) are a 5¼-inch woofer and a 1-inch dome tweeter. The speaker measures 7½ x 11 inches.



Its shallow cabinet permits the Atlantic Technology Model 254.1SR dipole surround speaker (\$399 a pair) to be recessed in a wall using an optional kit.

ceive a substantial proportion of the sound directly from the speaker, as opposed to sound reflected off room surfaces. Second, try to keep the speaker away from perpendicular walls. If you put a speaker near an acoustically reflective surface, the sound bouncing off the wall can interfere with the directly radiated sound waves, causing wave cancellations that could degrade the sound quality. Finally, you can optimize the stereo effect by positioning the speakers symmetrically in the room.

Unlike placing in-wall speakers for background music, placing them for a primary audio system or home theater is quite critical, especially if you're building an A/V system that complies with THX specifications.

For the front, it's ideal to have left, center, and right speakers of the same type aligned horizontally along a line through the middle of the video image. Unfortunately, this arrangement is not possible in most home theaters because the center speaker would have to go right smack in the middle of the picture. For those building high-end home theaters with front projectors, several manufacturers do offer perforated, acoustically transparent screens that allow a speaker to be placed behind the picture. But for the rest of us, the default position is to flank the television or video screen with the left and right speakers and to install the center speaker either above or below it.

There are several schools of thought about the type and placement of surround speakers, but the most popular approach is to have them flanking the audience seating area well above the

listeners' ear level. (Tom Nousaine's article on surround-speaker placement in the April STEREO REVIEW explored this subject in depth.)

Doing It Yourself

Audio manufacturers generally design their in-wall speakers for easy mounting in both new construction and existing structures. The mounting part of the job is well within the realm of the average do-it-yourselfer.

The challenging part, however, is not the speaker mounting but the required preparation. Preliminary prep work varies greatly depending on the building structure and on whether you are installing the system in a new building as it is being constructed or in an existing building.

The major advantage of installing in-wall speakers during the construction phase is that you can "prewire" the speaker cables into the walls. That saves an enormous amount of time compared with snaking cables through the structure after it's been built. The general prewiring method starts with visiting the site just after the framing is completed and deciding roughly where you want the speakers to be mounted in each room. From the spot where you plan to put your audio equipment, you can then snake the speaker wire along the inside of the wall to the spot where the speaker is to be mounted, passing the cables as you go through holes you've drilled in the center of the studs.

The cavity behind the wall between any two studs is called a stud bay, and most installers let a long piece of speaker wire hang down free from the

top of each bay where a speaker is to be mounted. The length guarantees flexibility in choosing the final speaker location once the walls are completed. Also, drawing a map of the room indicating the distances from the wires to the nearest reference walls makes finding your buried wires (and studs) much easier when you come back later to install the speakers.

The process of installing in-wall speakers in an existing building can range from being a simple exercise, not much worse than in a new building, to a great deal of work. You may want to assess the work involved if you plan to install speakers in an older house. In particular, if the structure you're retrofitting is less than fifty years old, the walls will most likely be made from gypsum-based wallboard, which is easy to cut with a drill and a keyhole saw. But if the house is older, you may find plaster-and-lath wall construction. Cutting a hole in this material is tricky because it is often old and dry, so it may crumble when you cut through it. Either way, remember that professional installers do this kind of work all the time and know all the shortcuts and tricks of the trade. If you proceed carefully, you can probably achieve the same results, but it will take you more time than a pro.

Step-by-Step Installation

It's useful to follow a typical in-wall speaker installation from start to finish. In our example we're installing an in-wall speaker in a first-floor room and snaking the wires up from the basement. There are more complex variations, of course. Each situation is different depending on where the audio electronics are located, whether the room is situated on the ground floor or on an upper floor, whether there is easy access from above or below the room, and certain other factors. But the steps of a basic installation will give you an idea of what's involved.

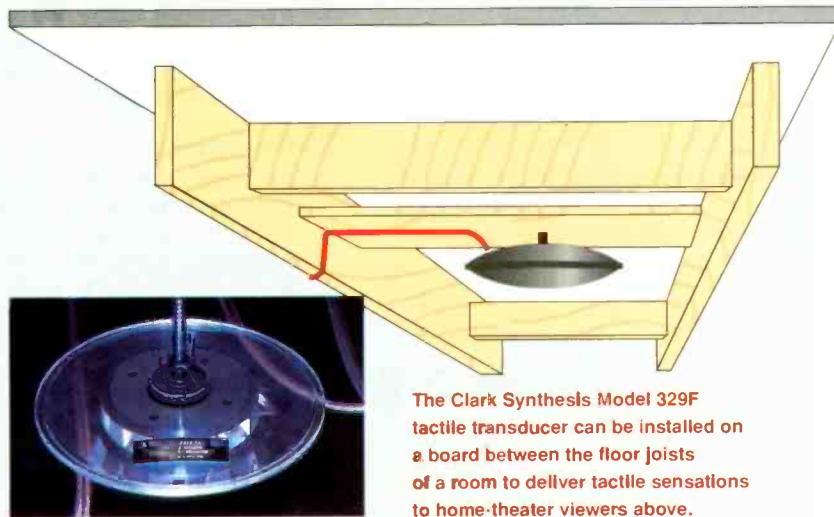
Step 1 **Decide where you want the speakers.** As noted, placement is dictated by whether the speakers are for background audio or for primary listening or home-theater use.

**In-walls can
render superb
sound quality**

Jurassic Couch

IN CASE you missed it, a new type of sound-reproduction device is beginning to show up in the home: the "tactile transducer." These devices, which are used in commercial flight simulators to impart motion cues, are now being used to generate low-frequency tactile sensations in home theater.

Tom Fenner of Clark Synthesis, a Littleton, Colorado, manufacturer of tactile transducers, explains that "with a conventional home-theater system, when you watch the tyrannosaurus in *Jurassic Park* stomp into view you miss the very important tactile impact of this huge animal as it approaches you. Sure, you



The Clark Synthesis Model 329F tactile transducer can be installed on a board between the floor joists of a room to deliver tactile sensations to home-theater viewers above.

can turn up your subwoofer volume and rattle the whole room. But with a tactile system the effect is more natural; you can listen to the film's soundtrack at normal volumes and still feel the footsteps."

The feeling Fenner refers to comes from the direct stimulation of seating surfaces and the floor via low-frequency tactile drivers. They are typically bolted directly to the wooden frames of couches and seats and are driven by dedicated amplifiers. For the ultimate tactile home-theater system, you can actually attach them directly to the floor joists underneath the room. The more powerful tactile transducers are often configured that way, and they guarantee a very palpable feeling whenever dinosaurs and other large creatures lurk around your room.

Tactile transducers are manufactured by just a handful of companies. RBH Sound of Layton, Utah, makes one called the FX-80 Subsonic Transducer that can be attached directly to your chair or couch; it's available alone (\$149 each) or in kits of two or four transducers with an amplifier (\$599 and \$899, respectively). Aura Systems in El Segundo, California, offers its Bass Shaker (\$239 a pair) in a complete kit with two transducers, a power amplifier, cables, and mounting instructions (\$329); the car audio manufacturer Alpine sells a similar transducer called the Bass Engine (\$260 a pair with an outboard level control). Finally, for the discriminating home-theater owner, Clark Synthesis will begin offering its Model 329F high-performance transducer this fall. Shaped like an 8-inch-diameter flying saucer, the unit will be sold separately (about \$500) or in kits of either one or two transducers with a matching amplifier (\$900 and \$1,400, respectively). And if you're after the ultimate experience, the company offers special floor panels that pass more tactile energy than traditional hardwood flooring.

— T.Y.



The Vortex (\$1,095 a pair) from In-Wall Audio uses a 36-inch-tall and 3½-inch-deep sealed enclosure for performance similar to that of a conventional speaker.

Draw a map to help find your buried wires



MTX's FS10A subwoofer (\$280), with a 10-inch driver in a 27½-inch-long cabinet/frame, installs in a floor. Frequency response is rated 40 to 100 Hz ±3 dB.

Step 2 Find out what's behind the wall where the speakers are to be located. The standard method employed by custom-installation professionals is to tap horizontally across the wall surface and listen for the dull thud that indicates the presence of a stud. You can also use an electronic stud finder. Once you have the approximate location of the studs, drill a ½-inch exploration hole halfway between the studs, being careful to stop as soon as the drill perforates the wall. This hole allows you to insert a metal electrician's snake into the wall cavity and verify where the studs are located by probing around. (Electrician's snakes are available at many hardware stores.)

Step 3 Cut the speaker mounting hole. Once you know where the wall studs are located, you can put the speaker's paper template (supplied with most in-wall speakers) against the wall and draw the cutout pattern. If you're installing a square or rectangular speaker,

it's usually wise to check the level of the cutout drawing with a standard carpenter's bubble level. Before you actually begin to cut the hole, be sure to double-check all your measurements — it is far better to find an error now than after the tools have had their way. If everything looks right, begin by carefully drilling ½-inch pilot holes in all four corners of the speaker-template tracing. Then, using a keyhole saw, slowly cut from corner to corner and remove the cutout wall section.

Step 4 Drill a hole up into the stud bay. Since our example involves installing an in-wall speaker in a first-floor room and snaking wires up from the basement, the first part of this step is pinpointing the location on the basement ceiling that corresponds to the stud bay where the speaker is being installed. This is usually done by taking several measurements in the room above from your cutout to the adjoining walls on either side, and then applying them to the basement ceiling. Be extra careful with these measurements; if you goof, you can find your-

self drilling into carpets or hardwood floors. Take a deep breath. With an extra-long, ½-inch-diameter drill bit, carefully drill up into the stud bay. When the drill perforates the surface above, remove it.

Step 5 Use an electrician's snake to find the speaker cutout from below. Now, take another deep breath. This step can be frustrating unless you snake wires for a living, like a custom installer or electrician. Insert the electrician's snake into the hole you drilled into the stud bay. The object is to twist and probe your way up the wall section until the end of the snake appears in the speaker hole you cut earlier. Have an assistant upstairs look into the speaker cutout and watch for the snake.

Step 6 Use the snake to pull the wires up and through. Once you have successfully pushed one end of the snake from the basement to the cutout, you can tape the speaker wires securely to the other end (use electrician's tape) and have your assistant up above pull them through the cutout.

Step 7 Mount the speaker in the wall. You can now cut off the excess speaker wire (be sure to leave a few extra feet for installation ease) and strip the ends to reveal approximately ¾ inch of bare copper conductor. These wires are terminated on the speaker binding posts (be sure to observe proper polarity!) and fastened tightly. Now go ahead and mount the speaker in the cutout, following the manufacturer's suggestions carefully. When you are finished, call for someone to come into the room. Exclaim, "I did it myself! Whaddya think?"

So there you have it. As you can see, in-wall speakers are not radically different from their freestanding cousins, and installing them does not have to be a difficult job. Just plan carefully and measure twice before cutting. If you're going about it for the first time, also consider enlisting a trusted helper, someone who can provide guidance and encouragement along the way — and pick up the tools you've thrown against the wall. □

Thomas Young is president of *The Cinema Source*, a home-theater catalog company based in Burlington, Massachusetts.



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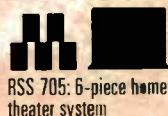
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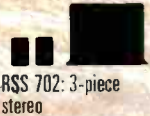
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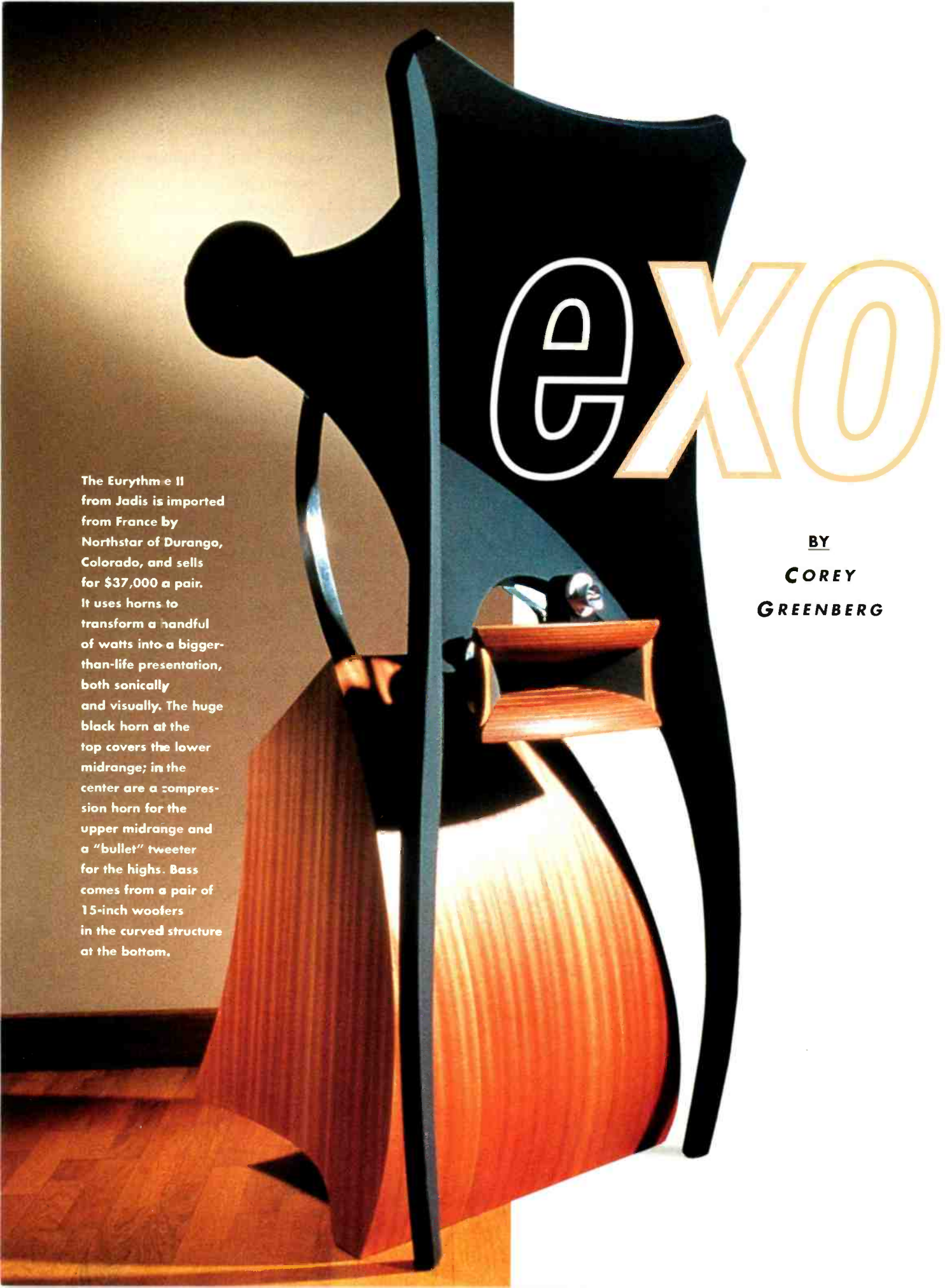
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EXO

The Eurythm e II from Jadis is imported from France by Northstar of Durango, Colorado, and sells for \$37,000 a pair. It uses horns to transform a handful of watts into a bigger-than-life presentation, both sonically and visually. The huge black horn at the top covers the lower midrange; in the center are a compression horn for the upper midrange and a "bullet" tweeter for the highs. Bass comes from a pair of 15-inch woofers in the curved structure at the bottom.

BY
**COREY
GREENBERG**

AUDIOPHILES AND HUMOR GO TOGETHER

like tar and tuna, but

there's one surefire rib-tickler that never fails to slay audiophile audiences:

"Hi-fi speakers come in all shapes and sizes — *as long as you want a rectangular wooden box!*" Still, that old

joke does have some truth in it:

Walk into a big A/V store, and you'll see rows and rows of near-

ly identical-looking speakers. But

in the rarefied air of high-end au-

dio, some of today's most respected designers are tossing tradition aside as

they literally change the face of loudspeaker design. From the lollipop looks

of the Avantgarde "horns" to the snail-shell shape of B&W's Nautilus,

their speakers are edge-of-the-art designs whose off-beat appearance is the direct result of sonic engineering, not weirdness for weirdness's sake. These speakers represent the passion of designers pushing the loudspeaker envelope to its limits.

Avantgarde Acoustic Profile Trio

Horn-loaded speakers aren't exactly a bold new idea. I mean, Paul W. Klipsch was building his legendary Klipschorns back in the Forties! But after AR's acoustic-suspension speakers turned the course of modern speaker design toward smaller, sealed bookshelf models, big ol' horn systems pretty much fell by the wayside for the next few decades as far as the "in" thing went. Oh, you could still buy a pair of Maytag-size horns from Klipsch, but you'd have to endure the wide-mouthed guffaws of your audiophile buddies who were sporting the latest pint-size minimonitors.

Well, if there's one thing that's constant in high-end audio, it's that yesterday's guffaw is tomorrow's huzzah. The current audiophile fascination with flea-powered tube amplifiers has turned the tide for big horn speakers — suddenly they're among the coolest (and most efficient) speakers you can own! And of all the horn-come-latelies to hit the market, one of the most radi-

cal-looking (and expensive, at \$37,990) is the Profile Trio from Germany's Avantgarde Acoustic, a three-horn system that "delivers as much sound with 10 watts of power as an average speaker would with 640 watts, if it could handle it."

Imported by New York-based Audio Note USA, the nearly 6-foot-tall, bright blue Trio looks like a psychedellic movie prop, not something you'd expect to hear Professor Longhair barreling out of. But, as Audio Note manager Herb Reichert explains, the round horns overcome some of the sonic limitations of traditional horn-loaded speakers. "When I first heard the Profile Trio Compacts [a smaller version that's only \$35,990 a pair], I could not have been more amazed. There were absolutely no remnants of 'horn sound.'"

"The more a horn tends toward the rectangular shape of traditional horns, the more it will produce sound with a 'honky' or cupped-hands coloration," Reichert continues. "Public-address horns are rectangular because they want to spray the whole auditorium with sound. High-fidelity horns should be round so that they can launch a perfect hemispherical wave front — where the energy is in phase and of equal amplitude at any point on the front. Any horn that is not round will sound more colored than the equivalent round horn."

As for the construction of the Trio's

**A few speakers
guaranteed
to catch your eye
and your ear**



The upper-frequency drivers in NHT's flagship Model 3.3 system (\$4,300 a pair) are mounted on the 7-inch-wide front panel, which is angled in toward the listener to enhance imaging. Bass is delivered by a side-mounted 12-inch woofer.

you've got 38,000 clams burning a hole in your Hag-gars, by all means check out the Avantgarde horns.

NHT Model 3.3

The 42-inch-tall Model 3.3 (\$4,300 a pair), NHT's flagship design, is a four-way speaker with a side-mounted 12-inch woofer whose unconventional looks and stunning sound took audiophiles by storm when it was introduced three years ago. Much deeper (31 inches) from front to back than they are wide (7 inches), the sharp-edged NHT's are designed to be pushed right up against the wall so they jut into the room. And they make a visual statement, that's for sure! Forget about putting grandma's doilies and potted geraniums on these black beauties — they are speakers you bow down and sacrifice goats to in hopes of appeasing your not-quite-as-enamored-of-big-speakers-in-the-living-room better half.

Designer Ken Kantor is well aware of the love 'em or hate 'em reaction people have to the NHT 3.3's distinctive appearance. "According to most customer feedback," he says, "if we are designing for cosmetic reasons, we have a lot more to learn! In fact, the 3.3's shape is entirely driven by acoustical goals — 100 percent." Kantor goes on to point out that the

speaker baffle that works best at the lower frequencies will not be ideal for the high frequencies, and vice versa. "A little minimonitor can get by in a cubelike enclosure, and so can a subwoofer. But the wider the bandwidth of your speaker, the more you run into the limitations of a conventional box. I can't think of a single thing that a plain box does sonically that you can't do better with alternative shapes, and this is especially true when you are building a full-range speaker."

It all has to do with the age-old problem of achieving the imaging of good minispeakers with the bass response of big subwoofers. Says Kantor: "Minimonitors do well in the mids and highs; big baffles help the bass and lower mids. And with a little creative cabinetry, you can have both. Consider the front of the 3.3 as a narrow minimonitor on a stand, automatically located away from the walls for the best imaging. At the same time, the side of the speaker makes a great large-baffle bass launcher. The funny thing is, you have this big, 20-Hz monster, and the total amount of listening room used isn't much more than a minimonitor on a stand positioned a few feet out into the room. But with the 3.3, we aren't wasting the space behind the speaker stand."

The NHT 3.3's front panel is angled in so that the upper drivers are toed-in toward the listener. Says Kantor: "The angle provides four direct, measurable, and audible benefits. 1) By crossing the speakers' radiating axes and controlling their radiation pattern, moving closer to one speaker brings you more on-axis to the opposite speaker. This stabilizes stereo imaging for a wider range of listening posi-

horns. Avantgarde embraces plastic as a legitimate alternative to metal or wood. "If I make a bell out of any material and strike it," Reichert says, "it will ring with a sound recognizable as the resonant character of that material — wood will sound like wood, metal like metal, plastic like plastic, and so on. Wood horns sound warm, slow, dull, and opaque. Metal horns sound bright. But plastics store much less energy than the wood or metal and have the least resonant character of any material used to make speakers to date."

What about bass? After all, you would need a truly gargantuan horn to reproduce serious lows. The Trio system includes two conventional powered subwoofers *per channel* to reproduce frequencies below 120 Hz, the point at which the system's 37½-inch "bass" horns start to roll off; each sub contains a couple of 8-inch drivers, a 60-watt amp, and a crossover. So if

sons, we have a lot more to learn! In fact, the 3.3's shape is entirely driven by acoustical goals — 100 percent." Kantor goes on to point out that the

Horns resounding from Germany's Avantgarde Acoustic: from left, the Profile Duo (\$17,990 a pair), Profile Trio Compact (\$35,990 a pair), and Profile Trio (\$37,990 a pair). All three systems have conventional subwoofers (not shown with Trios).





The crown jewel of England's B&W Loudspeakers is the Nautilus, a \$35,000-a-pair four-way system whose unique enclosure is said to eliminate cabinet diffractions and resonances.

tions. 2) By directing sound toward the listening position and away from room boundaries, the audible effects of wall reflections are reduced. 3) Nonparallel cabinet surfaces break up internal standing waves. And 4), adjusting the azimuth angle from which the speaker output arrives at the listener's head is a natural way to reduce interaural cross correlation, thus providing more precise stereo imaging and better reproduced spaciousness." A mouthful, to be sure, but one listen to the NHT 3.3's driven by high-quality electronics and you'll be spoiled for most speakers at any price.

B&W Nautilus

Without a doubt, the prize for the most way-out-looking speaker on the planet goes to B&W's awe-inspiring Nautilus. There are plenty of speakers on the market that'll snap a double take out of you, but these \$35,000-a-pair B&W's pull a triple! Just look at 'em! If you've seen wilder speakers, I want to hear about it. What's most surprising about the Nautilus isn't its appearance, but that such an out-of-this-world-looking speaker comes from England's B&W, one of the world's most staunchly conservative speaker manufacturers.

The ultimate tribute to B&W's founder, the late John Bowers, the

Nautilus is a no-holds-barred speaker system with a pair of custom crossovers that divide the musical spectrum into four bands, assigning one to each of the system's four drivers. "The Nautilus was a result of John Bowers's commitment to a single goal, to achieve the most transparent reproduction of musical sound by whatever means his firm's ingenuity could devise," explains B&W's Chris Browder. "After John's untimely death and almost ten years of research and development, the Nautilus emerged as the realization of his dream."

The snail-like shape of the Nautilus's 42-inch-tall cabinet was reached after a long line of evolutionary prototypes. Browder again: "Nautilus is truly a speaker design where form follows function. It was produced without commercial compromise and with no constraints on

development time or cost. The engineers at B&W studied many forms through its evolution and found that the nautilus shape eliminated cabinet diffractions and all internal resonances. After extensive research, the GRP [glass-reinforced plastic] cabinet was determined to best address the requirements of a rounded design and high rigidity. The beautiful fit and finish of the Nautilus is a standard for all B&W products."

If you're wowed by the smooth, glossy curves of the Nautilus (by the way, the finish is "midnight blue," not black) but can't quite see your way to dropping that kind of long green on a pair of speakers, B&W's innovative design technology trickles down to a new line of suitably offbeat two-way speakers called the Blue Room Minipods. Looking more like midget Michelin men rendered in brightly colored high-gloss plastic than any speaker you've ever seen, the \$800-a-pair Minipods offer the same triple-take looks as the Nautilus at a much more affordable price.

Carver AL-III Plus

Carver's AL-III Plus (\$2,000 a pair) is a fine example of a hybrid speaker that successfully marries the transparency of ultralight ribbon transducers with the extension and power of dy-

namic woofers. The 6-foot-tall AL-III uses a conventional box-mounted 10-inch cone woofer to handle the low end, while frequencies above 150 Hz are reproduced by a sheet of thin plastic suspended between two opposing magnetic fields. As with all planar speakers, the sound is radiated both fore and aft in dipole fashion, adding a sense of ambience that some listeners, particularly fans of classical music, find addictive.

"The appearance of the A-III Plus is very much a case of form following function," explains designer Jim Croft. "The 48-inch full-range dipole ribbon is baffled by a 14-inch-wide [oak] panel to give acoustical boundary support [to avoid dipole cancellation in the lower midrange] down to the correct frequency. The downward-firing subwoofer is crossed over to the dipole ribbon to extend the bass. The driver fires down to provide a more nearly omnidirectional radiation pattern through the crossover region and to blend as effectively as possible with the dipole ribbon."

Of the many difficulties designers



Carver's 6-foot-tall AL-III Plus (\$2,000 a pair), finished in hand-matched oak, marries a ribbon transducer for the higher frequencies (above 150 Hz) with a 10-inch cone woofer for the bass.



Undoubtedly the world's biggest and most expensive home speaker system, the Genesis I from Genesis Technologies creates a wall of sound using two 7½-foot towers per channel. For a cool \$90,000 you also get 4,000 watts of amplification.

have had in mating planar and dynamic drivers in a single loudspeaker system. Croft says it's more a matter of crossover design than of driver incompatibility: "The main problem with any of the dipole/monopole hybrids is not to make a woofer fast enough to keep up with a ribbon or electrostatic element, but to have the crossover transition be as seamless as possible. Dramatic shifts in radiation patterns around the crossover frequency are the biggest causes of sonic discontinuity and the sonic effect of a 'speed' difference between a ribbon and a cone/box-type woofer. Our downward-firing woofer combined with careful crossover shaping provides one of the best hybrid transitions we've heard."

Croft points to its essentially boxless construction as a major reason for the AL-III's success. "The dipole rib-

bon itself is a boxless design that has the well-known advantages of a properly designed dipole," he says. "Those advantages include the elimination of enclosure resonances and standing waves, and the cancellation of lateral room modes that result from the natural acoustic null that exists to the sides of any dipole device.

"If we were to mount the ribbon in a standard box, a number of undesirable things would happen. Due to the lightweight and acoustically transparent nature of the ribbon, any internal box resonances would be transmitted right through the diaphragm, resulting in a very audible, and nasty-sounding, group of delayed resonances. The dipole system would now be a monopole, and the favorable room interaction advantages over conventional box-type systems would no longer ex-

ist. The energy buildup at the cabinet edges would be much higher, and cabinet diffraction would cause time-dependent frequency-response irregularities. All of these effects add up to a speaker that would have obvious colorations and sound very boxy. Spatially it would lose much of its open sound field, and the room modes would be much more apparent."

Genesis Technologies Genesis I

Essentially an updated version of the legendary Infinity Reference System (IRS) speaker that Arnie Nudell designed while at Infinity, the company he co-founded back in 1968, the towering Genesis I from Genesis Technologies is Nudell's attempt at recreating the dynamics of a full symphony orchestra without audible strain. Standing 7½ feet tall and weighing in at a whopping 1.2 tons (including dedicated electronics that deliver 4,000 watts of power!), the \$90,000 Genesis I is certainly the biggest and most expensive loudspeaker system ever sold on the consumer market. It comprises two towers per channel, one with six servocontrolled woofers and one with twenty midrange drivers and a 5-foot ribbon tweeter mounted on a baffle made of rock-hard Corian.

Nudell, who formed Genesis Technologies in 1990, claims that the Genesis I's size and shape are critical to its sonic performance: "The cosmetics are almost totally dictated by sonic principles. It's probably a perfect example of 'form follows function' — or, as I like to put it, 'form exhibits function.' Obviously, once the form is discovered and implemented, the woodwork and finish are cosmetic."

The mid/tweeter tower's wide front panel, which mates American rosewood and Corian, was carefully designed to create the desired sound-dispersion pattern, according to Nudell. "Since the Genesis I has such high resolution capabilities, any and all ways of stabilizing the launch of sound waves from the drivers are desirable. Obviously the same can be said for the crossover, since airborne modulation of certain crossover components can be audible. Therefore, if the front baffle and the crossover enclosure of the Genesis I were not made of thick layers of Corian, a slight but noticeable difference in sound could be perceived."

The Genesis I speaker system is always a big attraction at consumer-electronics trade shows, where A/V deal-



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ers and journalists can be found in the Genesis suite listening to what their favorite CD's sound like on the world's biggest home hi-fi speakers and suffering from extreme tower envy.

Jadis Eurythmie II

A wild-eyed horn design from the French company Jadis, one of tube audio's most upscale manufacturers, the Eurythmie II was conceived as an ultra-high-efficiency speaker for use with the low-power single-ended triode amps made by Jadis and others. The fierce-looking Eurythmie II (\$37,000 a pair) can transform a handful of watts into a bigger-than-life presentation, both sonically and visually.

It does so by using a huge horn for the lower midrange (the big black mouth on top), a compression horn for the upper midrange, and a Fostex bullet tweeter for the highs. Bass is delivered by a pair of 15-inch woofers in the Eurythmie's arched base. Jadis also provides a pair of outboard cross-

overs, complete with controls for adjusting the horns' output.

The Eurythmie's exotic looks were mandated by sonic considerations rather than one too many bottles of Merlot, according to Frank Garbie, director of sales and marketing at the importer, Northstar, based in Durango, Colorado. "The appearance of the Eurythmie speaker is due to sonic quality," he says. "Only the color and finish are cosmetic. If the crossover and drivers were in a traditional rectangular wooden cabinet, the sound would be completely compromised. Most of the problems associated with traditional speakers result from resonances that cause distortion and inaccuracies in musical reproduction."

Garbie has great respect for the Eurythmie II's French design team, Jean Bernard Gabet and Jean Phillip, calling them "true Buckminster Fuller-type architects." Interestingly, extensive research into the design of horn speakers led the Jadis team to a different conclusion from the Avantgarde designers. "Jean Bernard Gabet and Jean Phillip examined horn technology and concluded that a properly designed horn system cannot be round but rather must be rectangular. And the Eurythmie features wooden horns because nonwood construction would introduce unnatural colorations that would alter its timbre and tone."

Martin-Logan Monolith III

A pioneer in the electrostatic-loudspeaker field, Martin-Logan has always offered designs that feature beautiful cosmetics as well as astonishingly natural sound, and the flagship Monolith III (\$9,000 a pair) is no exception. The 6-foot-tall Monolith offers a perfectly clear view into the sound — literally. Because the transducer for frequencies above 100 Hz is a single sheet of clear plastic suspended between two electrostatically charged screens, you can see right through it (lows are handled by a conventional woofer in the base of the speaker). It's more than a little disconcerting to hear a roomful of intensely lifelike sound and see nothing but a couple of these big yet largely transparent speakers.

"Even though to many it looks like a decorative front, the Monolith's electrostatic screen is actually a very specifically designed transducer," explains designer Gayle Sanders. "Sound quality drives the whole design. It has always been Martin-Logan's design

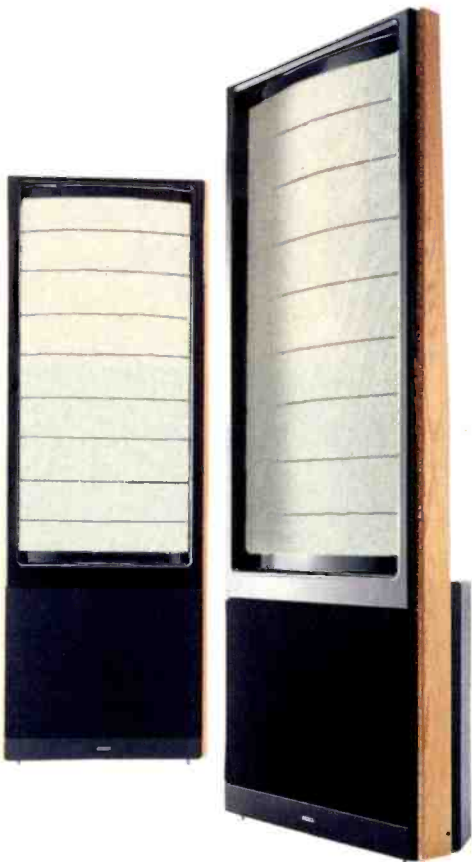
philosophy to design a no-compromise loudspeaker first, and then house it in a well-designed package."

The electrostatic panel used in the Monolith III as well as other Martin-Logan speakers is curved "to insure that the high frequencies are dispersed evenly throughout the room," according to Sanders. "If it were a flat panel, there would be such a narrow beam of high frequencies that only one person sitting dead center on the couch would hear any highs. If the panel were narrower, it wouldn't have to be curved, but the size of the transducer would have to be very large to reproduce the long wavelengths of low-bass frequencies. The Monolith's electrostatic panel operates from 100 Hz to 20 kHz in a phase-coherent way without a crossover, so it is unencumbered by all of the problems of typical two- or three-way loudspeakers. A dynamic 12-inch sealed-system woofer does a great job handling the bass from 100 Hz down."

Like other manufacturers of planar-type speakers, Sanders is adamant that the airy, transparent sound quality of his designs would suffer if he was forced to mount them in a conventional wooden box. "If you were to put our ESL transducer in a sealed box a number of things would happen. Since the back wave is now absorbed, the sense of ambience and openness our speakers create would be significantly subdued. More important, the compliance of the air in the sealed box would raise the resonant frequency of the transducer, and instead of being able to extend down to 100 Hz, it would operate only down to 500 or 1,000 Hz and roll off dramatically below that point."

Like the other designers I spoke with, Sanders believes that state-of-the-art engineering and a beautiful appearance can go hand in hand: "Martin-Logan was initially founded on the idea of creating a practical electrostatic loudspeaker system, and it's our belief that housing the product in a beautiful cabinet and making it simple to operate is not in conflict with state-of-the-art design. At Martin-Logan, as much energy is put into the aesthetics as the engineering."

Like a Detroit concept car, these exotic-looking speakers offer a glimpse of what tomorrow's speakers may look and sound like. But unlike the Dodge Squee-Gee, you can hear all of these speakers for yourself by visiting a few specialty audio shops and asking for a demo. □



More than transparent sound: Martin-Logan's 6-foot-tall Monolith III (\$9,000 a pair) reproduces frequencies above 100 Hz by a clear sheet of plastic between electrostatically charged screens, bass by a conventional woofer.



As virtually every speaker manufacturer rushes to deliver "home theater" speakers to the marketplace, M&K amasses nearly twenty years of experience in the field—dating back to Hollywood screening-room installations in the 1970s.

M&K engineers have spent well over a decade studying the varied aspects of surround

sound—including encoding and decoding; soundtrack recording; and the differences between reproducing sound in theaters and in homes.

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ble timbre-match with your existing speakers—even if they are not M&Ks.

M&K Center Channel Speakers

Beware of inexpensive "center channel" speakers. In Pro-Logic, the center channel speaker is driven the hardest, and often reproduces as much sound as the left and right speakers combined.



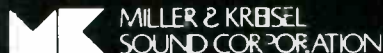
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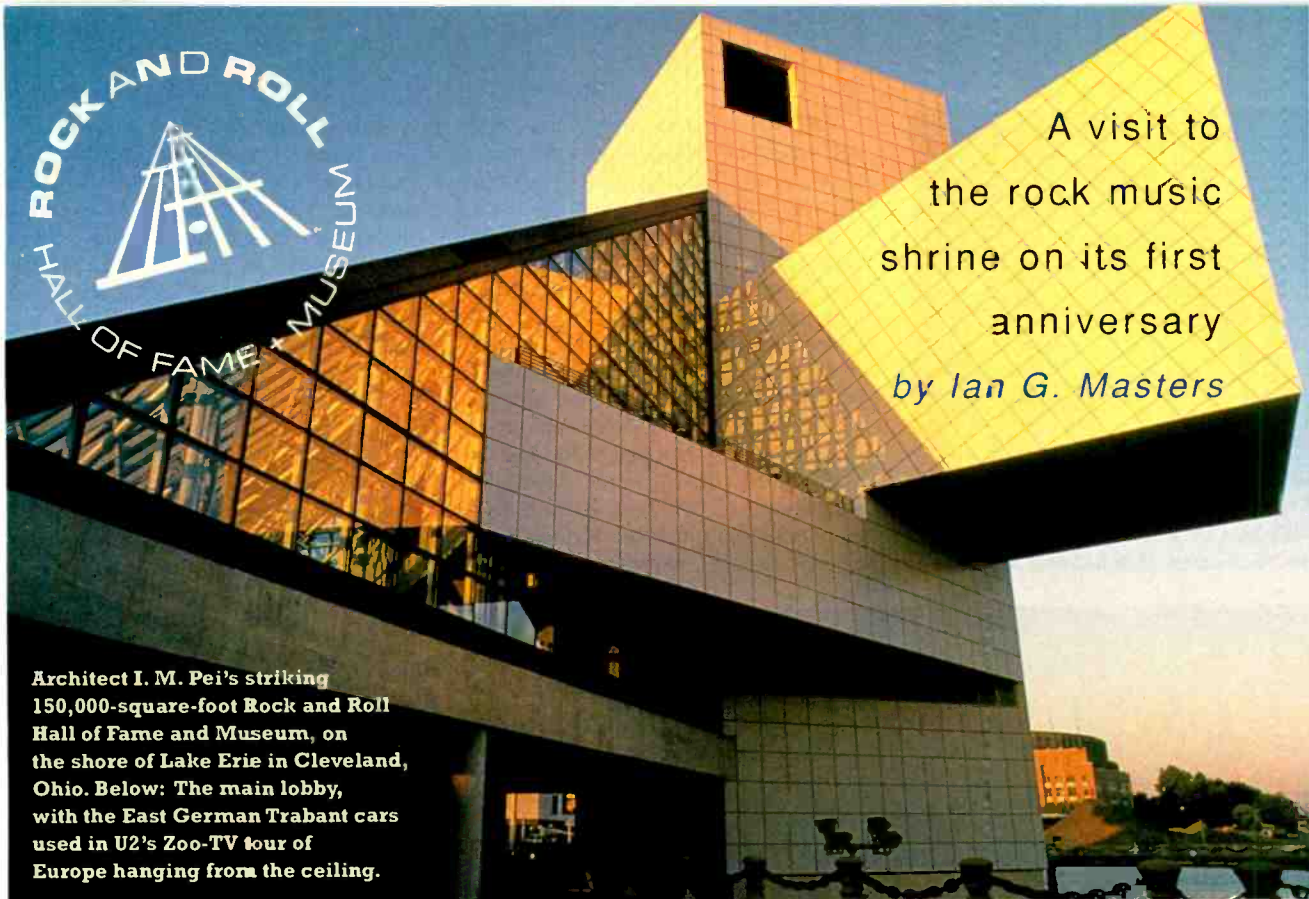
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A visit to
the rock music
shrine on its first
anniversary
by Ian G. Masters

Architect I. M. Pei's striking 150,000-square-foot Rock and Roll Hall of Fame and Museum, on the shore of Lake Erie in Cleveland, Ohio. Below: The main lobby, with the East German Trabant cars used in U2's Zoo-TV tour of Europe hanging from the ceiling.

Rockin' in Cleveland

When I was a teenager, the adults in my life were at some pains to instill in me a knowledge of and appreciation for "good" music. They succeeded in that, I suppose, but I also found guilty pleasure in becoming a devoted fan of the newfangled rock-and-roll. That my elders considered it not only an awful noise but also something that might rot my brain and turn me into a juvenile delinquent — maybe even a pervert — merely added to the appeal.

The best part was scanning the AM radio dial late at night to find distant stations that played new songs before the local stations got them. My regulars, as I recall, were WABC in New



York, WBZ in Boston, and WCFL in Chicago. I don't specifically remember listening to any stations in Cleveland, but it was there that DJ Alan Freed claimed to have coined the term "rock and roll," or at least to have detached it from its earthy meaning in black argot and applied it to the music of my generation.

Time passed, spotty little boys like me grew up, and, inevitably, rock became respectable. For proof, you need only look at that imposing monument on the shores of Lake Erie, right in the heart of Alan Freed's old stomping ground: the Rock and Roll Hall of Fame and Museum, a striking \$92 million edifice designed by the renowned architect I. M. Pei, which celebrates its first anniversary this Labor Day.



A modest bit of outerwear: George Clinton's Dr. Funkenstein jacket, from the Parliament/Funkadelic display.

As its name says, one of the building's primary purposes is to house rock's Hall of Fame, which inducted its first members ten years ago. The Hall itself is an austere circular room on the top floor of the six-level building; wall plaques bear the inductees' signatures and vital statistics, and a series of video displays runs snippets from their careers. It's a surprisingly formal atmosphere given the anarchy of the music, but it's appropriate — how else to pay homage to the gods of rock? What draws many people to Cleveland's North Shore Harbor, however, is not so much the Hall of Fame as the museum downstairs.

Take the escalator up a level, and you come to a floor devoted to how rock has interacted with various media over the years. One rather sad note is struck here by a short video devoted to the memory of Alan Freed, whose contribution early on had a lot to do with the existence — or at least the location — of the museum. After a few years as a trendsetter in the early 1950's, however, Freed was implicated in the payola scandals of the end of that decade, and it ruined his broadcasting career. He died before he could come to trial.

But the exhibits are mostly upbeat, ranging from a comprehensive look at early rock radio and DJ's, with recorded samples, to the impact of MTV and music videos in general. Along the way there are presentations describing how TV and rock got along (Hi, Ricky! Hi, Monkees!) and how rock changed the face of movies (with results ranging as far and wide as the Beatles' animated feature *Yellow Submarine* and the Band's concert film *The Last Waltz*), as well as a large area devoted to rock-and-roll magazines. I got the biggest charge out of seeing the recreated Sun Records control room, where Sam Phillips made all those early Elvis and Jerry Lee Lewis records, and the original equipment that Phil Spector used to create his famous "Wall of Sound." Truth to tell, none of the equipment in either display looks like anything that could change a culture.

Up another flight are the museum cafe and a theater (still under construction) that's intended to "provide a number of unique interactive experiences that will allow the viewer to experience the most current developments in the world of rock." Probably just as well; the facility as it stands is pretty much focused on the past. Then again, it *is* a museum . . .

On the fourth floor you come to a large theater bearing the name *It's Only Rock 'n' Roll*, where you can see a continuously running film called *Rock Is . . .*, a 20-minute tour de force by Bill Couterie that nicely summarizes the impact of rock music on our society. An amusing segment has U2's Bono claiming that every successful rock group must have one big nose — think Ringo Starr, Pete Townshend, and Bono himself. More sobering footage includes Townshend lamenting the loss of so many friends to the excesses of rock life.

Up one more level, you'll find a ful-



Entrance to the *Mystery Train* theaters in the Ahmet M. Ertegun Exhibition Hall, where visitors are introduced to the museum by a pair of multiscreen videos tracing the roots of rock-and-roll and its evolution over the decades.



Immense "teacher" dominates the exhibit that commemorates the Berlin performance of Pink Floyd's "The Wall."

You approach the building from across a wide plaza that, with cooperation from Lake Erie, can be a fairly windswept expanse. But the invigorating walk allows visitors to appreciate the full scope of Pei's angular facade. Once inside, you find yourself in a large glass entrance lobby featuring a series of small cars suspended from the ceiling. They are Trabants, the smoky East German horrors, hung like a giant mobile to commemorate a tour several years ago by the Irish band U2.

The other main virtue of the entrance level is the museum store. You might expect a souvenir-pen-and-T-shirt emporium, and certainly it is. But this shop is run by HMV Records, and its main stock in trade is CD's and tapes. This is Valhalla for serious collectors of oldies, so it might be prudent to put off your visit until you've seen the rest of the building. Otherwise you might never get out of the store.

TOP AND CENTER: HAN STATA PHOTOGRAPHY; BOTTOM: PETER VAN DER PHOTOGRAPHY. FROM THE COLLECTION OF THE ROCK AND ROLL HALL OF FAME

If You Go

The address of the Rock and Roll Hall of Fame and Museum is 1 Key Plaza, Cleveland, OH 44115 (telephone, 216-781-7625). It's located at North Coast Harbor, where East 9th Street ends at the Lake Erie shore.

Admission is \$12.95 for adults and \$9.50 for children (4 to 11) and seniors (55 and over). You can book tickets at Ticketmaster or by calling 1-800-493-ROLL. Some area hotels offer packages

that include admission to the Hall of Fame; call 1-800-321-1004.

All tickets come with specific admission times to keep the traffic manageable. Once you are inside, however, there is no limit to how long you can stay.

If you can't make it to Cleveland in person, you can get a reasonable flavor of the museum by visiting its site on the World Wide Web at <http://www.rockhall.com>.

ly functioning studio for visiting radio broadcasters who want to originate their shows from the museum. The rest of this level is the Hall of Fame lobby, a sort of decompression chamber in reverse designed to prepare you for the holy of holies: the Hall of Fame itself. In this anteroom, you can watch videos of the induction ceremonies before ascending a central spiral staircase to the Hall. After a tour of the walls there, an elevator whisks you back down to the lobby level and, conveniently, the store.

So far, our itinerary has taken us through a lot of material about rock and its relationship with the rest of the world, and it does have a fairly academic feel to it. But what about the true rock buff — the guy who goes to the Hard Rock Cafe to look at the Strats? The museum's designers were obviously aware that the memorabilia would draw the crowds, so they arranged the museum in such a way that, even before you begin your ascent to the Hall of Fame, you can go down a level from the entrance lobby to the Ahmet M. Ertegun Exhibition Hall.

Ertegun, who co-founded Atlantic Records, was a prime mover in the establishment of the Rock and Roll Hall of Fame and is co-chairman of its Board of Trustees; it's in the hall named for him that you'll find the good stuff. Wanna see Jim Morrison's Cub Scout uniform or John Lennon's "Sgt. Pepper" jacket? They're here. How about Roy Orbison's shades, Paul Simon's handwritten lyrics for *Graceland* (on a yellow legal pad), Grace Slick's white leather Woodstock dress, or Keith Moon's report card ("shows promise in music")? They're here too.

When you enter Ertegun Hall, you are ushered first into the *Mystery Train* theaters, in which multiscreen films outline the roots of rock and its development through the years. Rock's early influences can also be traced in an adjacent display called "Rock of Ages."

As you proceed around the perimeter of the approximately circular hall, you can participate in interactive displays that relate artists to those who influenced them, check out recordings of the 500 most influential songs in rock, or consult a database containing information on hundreds of performers. There's an exhibit devoted to the



A patchwork velvet jacket worn by Jimi Hendrix.



Rock stars have never been shy about wearing extreme costumes, as this sample from the main exhibit area illustrates.

horror with which rock-and-roll music was originally greeted by parents and moralists, and a hilarious display of rock costumes and the effect they had on fans, including such items as Madonna's cone bra from the *Blonde Ambition* tour and Kiss bassist Gene Simmons's codpiece. Seven cities that are important to rock history are featured as well, from Memphis to Detroit to Seattle, spanning styles and decades. One minitheater runs a filmed oral history of rock, with quotes representing musicians from Carl Perkins to Bruce Springsteen; another features the fans. There are displays devoted to one-hit wonders, to the various tours of the Rolling Stones, and to the influence that blues, R&B, and soul have had on rock over the years.

The main exhibit area in the center of the hall is an open space with free-standing displays devoted to individ-



The "butterfly" dresses of the Supremes, as featured in a 1968 television special.

ual artists like Elvis Presley, the Beatles, Neil Young, and Michael Jackson, including many of their possessions and costumes, all of it dominated by an immense multiscreen video wall showing performances. Everywhere throughout the large hall are records, clothes, letters, and other memorabilia of rock's greats.

You'll have no doubt, after wandering around this remarkable institution, that rock-and-roll has become a mainstream pillar of our culture. But, you know, I still think it was more fun having to sneak a listen when my parents weren't around. Today, they would probably enjoy the Rock and Roll Hall of Fame and Museum as much as I did. □

Hall of Fame

Since the first members were inducted into the Rock and Roll Hall of Fame in 1986, more than 130 rock movers and shakers have been honored, including songwriters (Jerry Leiber and Mike Stoller), broadcasters (Alan Freed, Dick Clark), producers (Sam Phillips, Phil Spector), record-company executives (Berry Gordy, Ahmet Ertegun), and early influences (Bessie Smith, Les Paul). Lifetime achievement awards have been given to John Hammond and Nesuhi Ertegun.

But most inductees have been rock performers. For instance, the new members for 1996 include artists as diverse as David Bowie, the Shirelles, Jefferson Airplane, Velvet Underground, Pink Floyd, Little Willie John, and Gladys Knight and the Pips. Also named, as early influences, are folk singer Pete Seeger and DJ Tom Donahue, the father of free-form FM rock programming.

The complete list:

Paul Ackerman, Allman Brothers Band, Animals, Louis Armstrong, LaVern Baker, Hank Ballard, the Band, Dave Bartholomew, Ralph Bass, Beach Boys, Beatles, Chuck Berry, Bobby "Blue" Bland, Booker T. and the M.G.'s, David Bowie, James Brown, Ruth Brown, Byrds, Johnny Cash, Ray Charles, Leonard Chess, Charlie Christian, Dick Clark, Coasters, Eddie Cochran, Sam Cooke, Cream, Creedence Clearwater Revival, Bobby Darin, Bo Diddley, Dion, Willie Dixon, Fats Domino, Tom Donahue, Doors, Drifters, Bob Dylan, Duane Eddy, Ahmet Ertegun, Nesuhi Ertegun, Everly Brothers, Leo Fender, Four Seasons, Four

Tops, Aretha Franklin, Alan Freed, Milt Gabler, Marvin Gaye, Gerry Goffin and Carole King, Berry Gordy, Bill Graham, Grateful Dead, Al Green, Woody Guthrie, Bill Haley, John Hammond, Jimi Hendrix Experience, Holland, Dozier & Holland, Buddy Holly, John Lee Hooker, Howlin' Wolf

Impressions, Ink Spots, Isley Brothers

Elmore James, Etta James, Jefferson Airplane, Elton John, Little Willie John, Robert Johnson, Janis Joplin, Louis Jordan

B.B. King, Kinks, Gladys Knight and the Pips

Leadbelly, Led Zeppelin, Jerry Leiber and Mike Stoller, John Lennon, Jerry Lee Lewis, Professor Longhair, Frankie Lyman and the Teenagers

Bob Marley, Clyde McPhatter, Van Morrison

Rick Nelson, Roy Orbison, Orioles,

Johnny Otis

Les Paul, Carl Perkins, Sam Phillips, Wilson Pickett, Pink Floyd,

Platters, Doc Pomus, Elvis Presley, Ma Rainey, Otis Redding, Jimmy

Reed, Little Richard, Smokey Robinson, Jimmie Rodgers, Rolling Stones

Sam and Dave, Pete Seeger, Shirelles, Simon and Garfunkel,

Sly and the Family Stone, Bessie Smith, Soul Stirrers, Phil

Spector, Rod Stewart, Supremes

Temptations, Big Joe Turner,

Ike and Tina Turner, Vandellas, Velvet Underground

T-Bone Walker, Dinah

Washington, Muddy Waters,

Jerry Wexler, Who, Hank Williams, Jackie Wilson, Stevie Wonder

Jimmy Yancey, Yardbirds,

Neil Young

Frank Zappa



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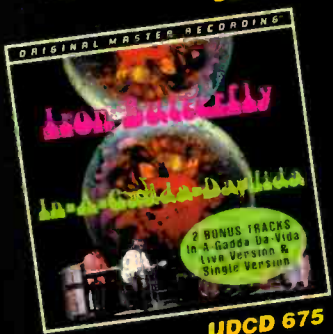
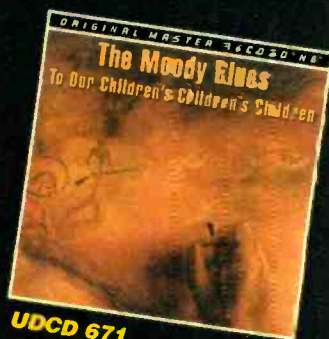
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BEST OF THE MONTH

**STEREO REVIEW'S
CRITICS CHOOSE THE OUTSTANDING
CURRENT RELEASES**



MARINA CHAVEZ/AMERICAN

Droge and Sinners Wear It Well

The music of Pete Droge and the Sinners is analogous to an old flannel shirt: It's not flashy or fashionable, but you can slip it on at any time and feel right at home. So while "Find a Door," Droge's second album, may seem unpretentious to a fault compared with trendier fare, it feels comfortably in tune with the rhythms of day-to-day life as most folks live it. Like the work of such obvious forebears and in-

fluences as Neil Young and Tom Petty, Droge's back-porch ruminations unfold over chunky guitar chords and a bedrock rhythm section. His conversational mid-range ambles atop it all like a figurative hiker surveying the emotional scenery of his life, less worked up than seasoned by hard knocks and rough terrain.

"Find a Door" isn't exactly chockablock with uptempo rockers (there's only one, the sly *Brakeman*), but it catches you up

in its leisurely gait, making for good, companionable listening. Fans of Neil Young circa "On the Beach" — especially that album's opening track, *Walk On* — will recognize the approach: craggy guitar, loping rhythms, and a familiar voice conveying home truths with a casual honesty. Take *Mr. Jade*, Droge's opening track, in which he tells a rich man who seems to have it all that he's missing the most essential piece of the puzzle: "If you ain't got love that's gonna last a lifetime / You ain't got it made." Subtly deployed horns act like air pumped on burning embers, coaxing the song to glow. *Wolfgang* takes a poppier turn, its sweet melody gliding along on a slide guitar played in a manner that recalls George Harrison.

Although Droge sounds a trifle wistful and world-weary on "Find a Door," the album is ultimately about finding the grace and good sense to accept things as they are. Musically, what's most appealing about it is its lack of clutter. Droge's songs are sturdy enough to stand on their own without ornamentation. Words and music fit together perfectly, and the economical playing attests to Droge's well-placed confidence in his material. Indeed, his greatest gift seems to be a knack for not overreaching. Such songs as *Out with You*, *Sooner Than Later*, and *Dear Diane* have fetching melodies, low-key arrangements, jangly (remember that word?) folk-rock guitars, a rustic bounce, and a beguiling down-home demeanor.

"Find a Door" won't exactly change your life, but its modest pleasures certainly will make it better for a little while.

Parke Puterbaugh

PETE DROGE AND THE SINNERS:

Find a Door.

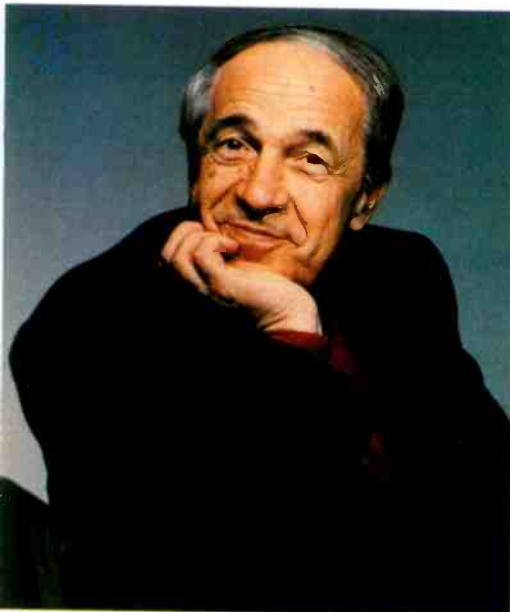
Mr. Jade; Wolfgang; It Doesn't Have to Be That Way; Dear Diane; Brakeman; You Should Be Running; That Ain't Right; Find a Door; Out with You; Sooner Than Later; Lord Is Busy. AMERICAN 43085 (43 min).

Boulez's Bartok Thrills Again

Pierre Boulez's digital recordings of Bela Bartok's orchestral works with the Chicago Symphony on Deutsche Grammophon constitute one of the most distinguished projects of the CD era. He has just the right temperament for the music, which is by turns cerebral, mocking, and passionate, and the virtuosic Chicagoans are deeply in sympathy with him. Boulez has recorded most of these pieces before, but the new recordings are especially thrilling in their vivacity and intense coloration.

The latest disc in the series leads off

BEST OF THE MONTH



JORG RICHARD/DEUTSCHE GRAMMOPHON

Pierre Boulez: *miraculous Mandarin*

with a complete performance of that strange little pantomime ballet *The Miraculous Mandarin*, which squeezes more sex and violence into half an hour than anything on prime-time TV. It concerns a group of pimps who force a prostitute to lure a series of men up to her room: the third of these is the mandarin, whom the pimps try to murder. He is proof against all their machinations, however: when they hang him from the light fixture, he "glows with a greenish-blue light," represented musically by the eerie, wordless wailing of the chorus. He finally dies when the girl accepts his embrace.

The playing throughout is at once powerful and exquisitely nuanced. The winds are particularly fine: The clarinet soloist in the third movement strikes a judicious balance between Goodmanesque swing and edgy modernist lament, while the strings swirl around him in a rich, ominous nimbus that explores the whole range of plucked and bowed sounds.

The Music for Strings, Percussion, and

Celesta is one of Bartok's greatest works, and it has never received a more masterly, haunting performance than this one. Scored for stereo before that technology was developed, it places two string orchestras (one for each channel) at opposite sides of the stage to engage in a delightful, antiphonal pizzicato conversation in the allegro movement. The piece concludes with brilliant, sun-drenched harmonies, pushed forward by danceable rhythms from the percussion, the celesta, and the piano (despite the title, the principal solo instrument).

All in all, this CD offers an excellent new account of these two powerful works, with superb sonics from Deutsche Grammophon's engineers. *Jamie James*

BARTOK: *The Miraculous Mandarin (complete); Music for Strings, Percussion, and Celesta.*

Chicago Symphony Chorus and Orchestra, Pierre Boulez cond.

DEUTSCHE GRAMMOPHON 447 747 (62 min).

Webb Wilder: Loud Music, Big Laughs

If you haven't already encountered Webb Wilder, let's simply state up front that he's one of the most, er, unlikely characters to have emerged from rock-and-roll at this or any other moment. Bespectacled and dressed in thrift-shop clothes, he could pass for Buddy Holly's slightly nerdy older brother. But when he starts singing in his trademark twangy baritone (which suggests a cross between a late-night televangelist and a game-show host), Wilder becomes the self-proclaimed Last of the Full-Grown Men, purveyor of a music that's a tough-as-nails synthesis of Sixties Brit-pop and its Big Star/Cheap Trick derivatives, surf instrumentals, "Exile on Main St"-era Rolling Stones, hard country à la Steve Earle, and rootsy New Wave bands like Rockpile. And, as you may have guessed, Wilder can be extremely funny; as self-mythologizing rock-biz constructs go, he's a lot closer to Bobcat Goldthwaite than to Ziggy Stardust.

"Acres of Suede," his latest (after a 1995 covers set), offers all of the above plus gobs of great guitars, here played mostly by the star himself, long-time producer/collaborator R. S. Field, and David Grissom (of John Mellencamp's band). At times the textures and interplay have an

almost compositional grandeur, a Nashville power-pop version of Tom Verlaine and Richard Lloyd's mesh with Television (*No Great Shakes*, *Carryin' the News to Mary*). Elsewhere, the players hark back to ferocious, vaguely psychedelic Yardbirds-style rave-ups (the minute-plus instrumental coda to the aptly titled *Loud Music*, which must be heard to be believed). Beyond that, as if that wasn't enough, is a brace of imitably goofy songs that make hash of Nick Lowe's dictum about the appalling lack of humor and realism in contemporary music. Highlights include the mutant rockabilly ode *The Olde Elephant Man* ("He became the toast of London town / because a pachyderm slapped his mama down"), the Ventures-on-Ecstasy romp *Rocket to Nowhere* ("This galaxy is too small for me"), and *Scattered, Smothered, and Covered*, a delirious bachelor-pad seduction rap that quotes from the Count Five's garage classic *Psychotic Reaction* and thus offers a sneaky aural metaphor for our culture's recent sexual mores.

In short, it adds up to another terrific album from Webb Wilder. Frankly, if this guy didn't already exist, somebody — probably Wilder himself — would have to invent him. *Steve Simels*

WEBB WILDER: *Acres of Suede.*

The Olde Elephant Man; No Great Shakes; Loud Music; Fall in Place; Flat Out Get It; Soul Mate; Scattered, Smothered, and Covered; Tell Me Why Charlene; Why Do You Call?; Carryin' the News to Mary; Lost in the Shuffle; Rocket to Nowhere. WATERMELON 1033 (48 min).

WYATT MACKEN/WATERMELON



Wilder: *Last of the Full-Grown Men?*

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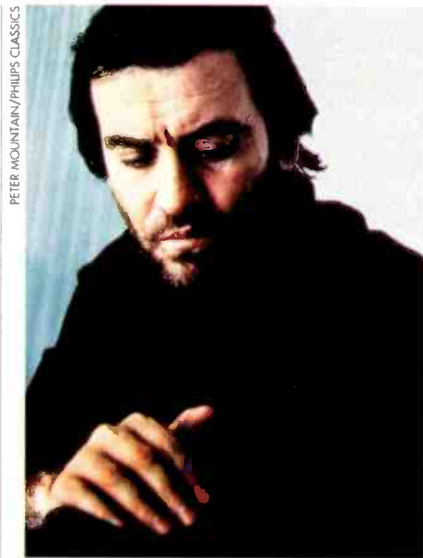


BEST OF THE MONTH

Gergiev and the Kirov Orchestra's Virtuoso Shostakovich Eighth

Valery Gergiev's Philips recordings of symphonic music with his Kirov Orchestra have tended to be somewhat less successful than his series of Russian operas with the same orchestra and the rest of the St. Petersburg company. The murky sonics that impaired his musically strong Rachmaninoff Second Symphony, however, are not a factor in his new account of the Shostakovich Eighth Symphony, which many listeners are bound to find all-surpassing in its powerful advocacy.

The Eighth, composed in 1943, is one of the most wrenchingly personal of all Shostakovich's works, its character and substance in large part determined by the dramatic and tragic events of the time. Gergiev does not play up the "chronicle" aspect, though; he seems to operate on the premise that the music need not be tied to its specific background, that its impact will be deeper and more lasting if its drama can be universalized, liberating the listener from the expectation or quest for specific images. The focus is on the work's musical substance, which is, after all, considerable.



Conductor Valery Gergiev

Comparisons with other recorded performances, in fact, have seldom seemed so thoroughly beside the point. It means little to observe that Gergiev is a tad

quicker here than some other conductor, or more expansive there. Everything simply moves at its own pace, without calculation or posturing, always with the most convincing natural momentum. The apparent citations of the theme from Tchaikovsky's *Manfred* Symphony in the two outer movements stand out with chilling (and mystifying) effectiveness. The "non troppo" ("not too much") part of the *allegro non troppo* marking is strictly observed in the second of the two linked fast movements, so that the effect is of some truly inexorable force rather than a mere virtuoso display.

But this is a virtuoso performance, in the very best sense, and an enormously powerful one in which straightforwardness and subtle restraint in the use of the orchestra's resources allow the listener to be drawn unresisting into the core of the work, rather than merely being impressed by its presentation. And the burnished-gold acoustics of the Haarlem Concertgebouw, every bit as warm yet radiantly clarifying as those of its famous Amsterdam namesake, happily enhance those very qualities in the performance itself.

Richard Freed

SHOSTAKOVICH: Symphony No. 8.

Kirov Orchestra, Valery Gergiev cond.
PHILIPS 446 062 (63 min).

NOW ON CD

POPULAR

BOW STREET RUNNERS.

SUNDAZED 6112. Originally released on B.T. Puppy in 1970, this much sought after album is one of the more mysterious artifacts of late psychedelia — no one seems to know who these guys were or where they came from. Fans of Farfisa organ and fuzz-tone take note.

EMERSON, LAKE, AND PALMER: Brain Salad Surgery.

RHINO 72459. The 1973 best-seller (cover art by *Alien* designer H. R. Giger), now with a bonus interview track with the band and lyricist Pete Sinfield.

FRENCH FRITH KAISER

THOMPSON: Live, Love, Larf & Loaf. SHANACHIE 5711. Originally on Rhino and out of print for nearly a decade, this features guitar greats Richard Thompson and Henry Kaiser, along with Brit avant-gardist Fred Frith and Captain Beefheart drummer John French.

THE SANDPIPER

(original motion-picture soundtrack). VERVE 531 229. From the 1965 Taylor-Burton



bomb, Johnny Mandel's lovely, influential jazz score, featuring *The Shadow of Your Smile*.

THE WHO: Quadrophenia.

MCA 11463. The Who's other (many say superior) rock opera, completely remixed and remastered with the participation of Pete Townshend.

CLASSICAL

BACH: Goldberg Variations.

Gustav Leonhardt (harpsichord). TELDEC 97994. "... this performance can be highly recommended" (December 1966).

BIZET: Carmen.

Morton Gould and his Orchestra. RCA VICTOR 68476. The gypsy and her

friends arranged for orchestra alone (by Gould), in 1960 "Living Stereo" sound.

BRAMMS: Symphonies

Nos. 1 and 2; Serenade No. 2; Haydn Variations. LONDON 448 197.

Symphonies Nos. 3 and 4; Serenade

No. 1. LONDON 448 200. Vienna Philharmonic. Istvan Kertesz cond. Both sets are two CD's for the price of one; the Fourth Symphony is "... a most satisfying reading" (June 1975).

NATHAN MILSTEIN: The 1953 Library of Congress Recital.

Nathan Milstein (violin); Artur Balsam (piano). BRIDGE 9066. The distinguished violinist and his frequent collaborator in a 1953 concert of Bach (Partita in D Minor), Beethoven ("Spring" Sonata), and Brahms (Violin Sonata No. 3).

VIVALDI: Guitar Concertos.

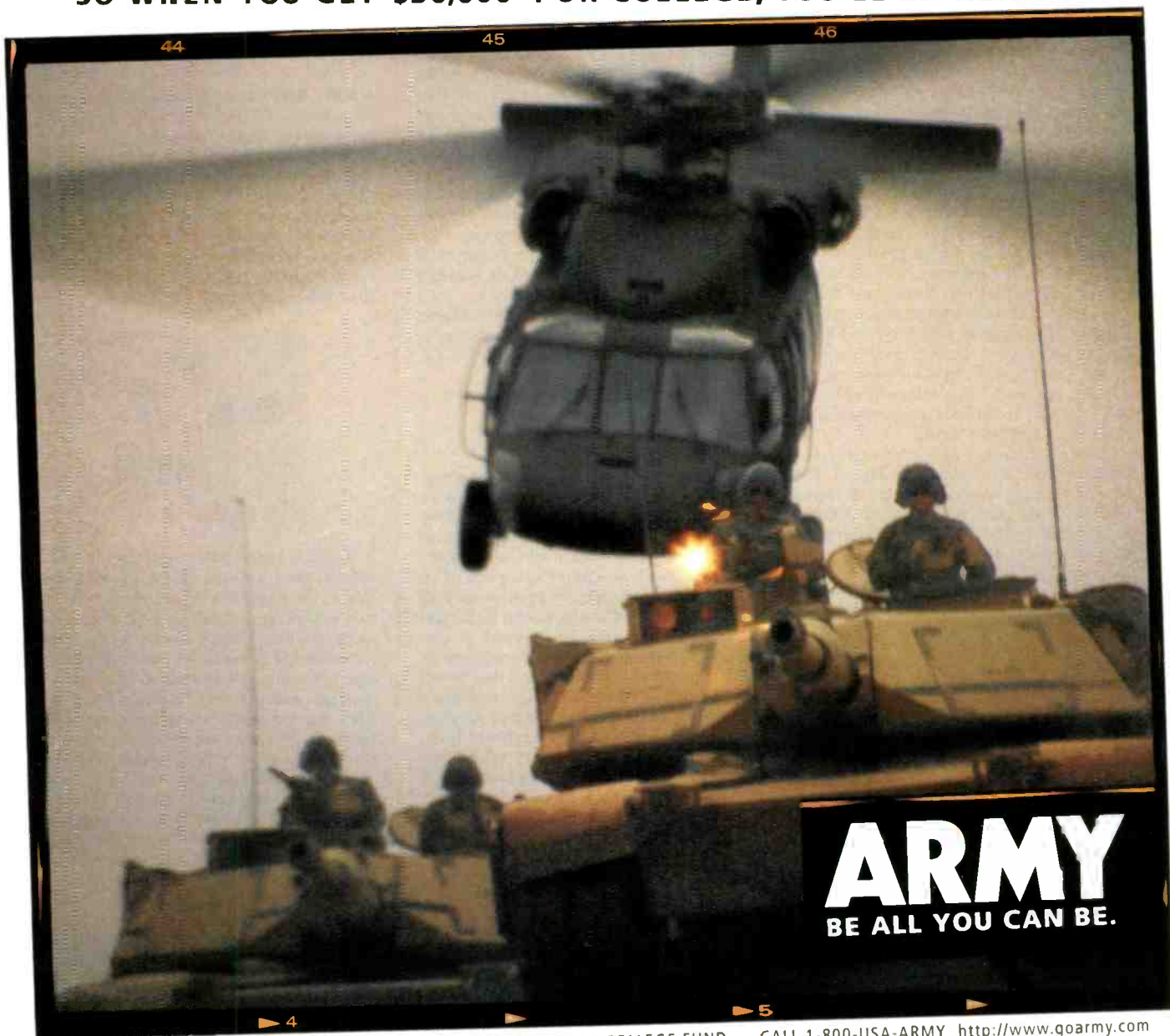
RODRIGO: Concierto de Aranjuez; Concierto Andaluz.

The Romeros (guitars); San Antonio Symphony, Victor Alessandro cond. MERCURY 434 369. "... crisp sound and ideal solo-orchestral balance" (July 1975).

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POPULAR MUSIC

NEW RECORDINGS REVIEWED BY CHRIS ALBERTSON, FRANCIS DAVIS,
PHYL GARLAND, RON GIVENS, BRETT MILANO,
ALANNA NASH, PARKE PUTERBAUGH, KEN RICHARDSON, & STEVE SIMELS

BAD RELIGION: The Gray Race.

ATLANTIC 82870 (39 min).

Performance: Single-minded
Recording: Full-frontal assault

Fifteen songs in 39 minutes works out to 2:36 per. which means that "The Gray Race" stays well within the formal bounds of hardcore. Whatever else you think about the genre that Bad Religion has flogged for a decade and a half, you've got to give the band points for perseverance, idealism, brains, and adrenaline. What's needed is more of a sense of humor and less stylistic rigidity. Then again, singer/lyricist Greg Graffin is entirely unamused about the state of the world, including such crises as the population bomb: "Ten billion people, all suffering / 10 in 2010," he sings, sounding a tragically unheeded warning.

Punk has always had its polemicists, from the Clash and Sham 69 to Fugazi. The risk is becoming so pedantic that you sound like an op-ed page set to music. Graffin risks sounding like a singing thesaurus as well, dropping words like *moiety* and *retinue* into his urgent songs. But he's so

much the opposite of the typical escapist entertainer that it's easy to forgive Bad Religion's peccadilloes and salute, if not embrace, its high-minded crusade. To the frisky stomp of a punk-rock kick drum and jackhammer guitar chords, Graffin seeks to enlist society's young misfits into a sort of punk Scout troop with its own credo: "Independent, self-contented, revolutionary / Intellectual, brave, strong and scholarly / If you're not one of them, you're us already / So come join us." Skeptic I may be, but I can only applaud Graffin and Bad Religion for attempting to be part of the solution in this very mixed-up world. *P.P.*

THE BLUE NILE: Peace at Last.

WARNER BROS. 45848 (45 min).

Performance: Trained
Recording: Good

The Blue Nile used to float my boat big-time. In fact, the group's first two albums, "A Walk Across Rooftops" (1984) and "Hats" (1989), are two of my all-time favorites, offering Paul Buchanan's hyperromantic vocals served on a rich bed of atmospheric soundscapes by keyboardist Paul Joseph Moore and bassist Robert Bell. Never had synth-driven pop seemed so naturally unnatural, so realistically expressionistic. Now, the Nile has receded, and Moore and Bell have apparently evaporated away. Instead of beautifully modulated arrangements filled with inventive keyboard work, we get repetitive, guitar-heavy riffing. Buchanan's voice still has a desperate charm, but the tunes are simple and the lyrics bald. I can only hope another high tide is coming for the Blue Nile. *R.G.*

PAUL BRANDT: Calm Before the Storm.

REPRISE 46180 (34 min).

Performance: Natural star
Recording: Good

Look up the phrase "rising star," and chances are you'll find a picture of Canadian newcomer Paul Brandt. At 24, he has almost everything working in his favor,

from songwriting talent to a distinctive voice. A baritone in a genre currently dominated by tenors, Brandt knows how to use the deepest part of his three-octave range to great advantage, dropping down for the seductive notes of his hit single, *My Heart Has a History*. With the chorus alone, he signals he's arrived.

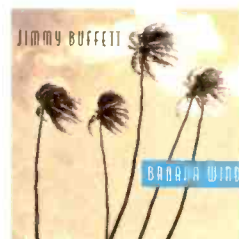
A former pediatric nurse, Brandt has seen enough real-life experience to imbue his commercial material with credibility, especially *I Meant to Do That*, a Garth Brooks-ish song about seizing the moment before it's too late. (One exception: *12 Step Recovery*, a puffy piece of line-dancing fare "suggested" by his producer, Josh Leo, who co-wrote it with Rick Bowles.) From the slip-and-slide rhythm of *One and Only One* to the stylish western-swing of *All Over Me* and the moving wedding song *I Do*, Brandt shows himself to be a thoughtful programmer, covering not only all the phases of love but most of country's sub-genres as well. For a radio guy, "Calm Before the Storm" is an impressive debut. Make room for a big one. *A.N.*

JIMMY BUFFETT: Banana Wind.

MCA/MARGARITAVILLE 11451 (68 min).

Performance: Sailors' delight
Recording: Very good

You don't have to be a Parrothead to enjoy "Banana Wind." Jimmy Buffett's umpteenth album. In fact, if your taste runs to his wilder side, you may be disappointed. But for those who like it best when he keeps the smart-ass stuff to a minimum, this album may be the old sailor's finest.



Buffett's lyrics tack to familiar themes: self-absorbed self-description (*School Boy Heart*), the island life (*Holiday*), and the rat race (*Overkill*), as well as a smattering of social politics. There's also a pretty good story-song in *Jamaica Mistaica*, about the time his seaplane was fired on in a case of mistaken identity. But "Banana Wind" is more about melody, arrangement, and execution. Buffett seems to be making more of an effort to actually write music (the title track is an instrumental), and his players decorate his trademark Caribbean caravans with big-band touches, including exquisite muted-trumpet solos between the steel-drum romps. One track, the seven-minute *Desdemona's Building a Rocket Ship*, is dark and moody island pop, set off with a Beatlesque bridge.

If you've never much liked Buffett's occasionally sophomoric forays, give him a second chance here. And don't miss the hidden bonus track, *Treetop Flyer*, which brings the blues home, Buffett style. *A.N.*



Dada: Sky's the limit!

ELVIS COSTELLO AND THE ATTRACTIONS: All This Useless Beauty.

WARNER BROS. 46198 (48 min).

Performance: Well . . .

Recording: Lush

Like nearly everything Elvis Costello has released in the Nineties, "All This Useless Beauty" is spotty but sporadically brilliant. Drawn mainly from songs he wrote for other artists, it's finely crafted, lovingly sung, and still a considerable letdown after 1994's "Brutal Youth," where he finally brought back his old punk-pop venom. This time he has become a maker of high-class piano ballads, and while most of the songs (save for *You Bowed Down*, a standard rant recorded by Roger McGuinn on his last solo album) are strong enough in their own right, they're less than overwhelming end to end.

It doesn't help that the usually impeccable Attractions are more subdued than usual, and a few of the arrangements misfire. *Distorted Angel* cries out for a complex treatment, but it's sunk by a twiddly and repetitive synthesizer riff. And *Starting to Come to Me*, which should be a lacerating putdown, is taken in an inexplicably jolly gallop with campy piano and background vocals. As for the sporadic brilliance, *The Other End of the Telescope* (first recorded, with less success, by co-author Aimee Mann) is quintessential Costello pop, while *Complicated Shadows* (first done by Johnny Cash) can only be described as grunge-ably. The tense standout *It's Time* gets a dramatic vocal and a hip-hop arrangement that's unlike anything Costello has attempted before. It's telling that the best moments all come when the former Declan McManus breaks out of the album's cocktail-lounge ambience. *B.M.*

DADA: El Subliminoso.

I.R.S. 34168 (57 min).

Performance: Sublime

Recording: Excellent

Dada is far too musically proficient to pass for, or be accepted as, an alternative band. In that sense, Dada is much like the Police, who unconvincingly slumped as New Wavers. If any sort of flaw has emerged over the course of Dada's three albums, it's the extent to which the group's lyrical grasp lags behind its musical reach. Some of the sophomoric conceits — which have sprung from a sensibility that owes more to TV, shopping malls, and suburban conformity than to books, classrooms, and informed trains of thought — are unworthy of the inspired and often brilliant musical settings into which they're cast. Maybe that's why group members are pictured lying on the grass behind a flock of plastic pink flamingos or drinking from a garden hose with a picket fence in the distance. Maybe that's why the lyrics tend to be filled with literal details about people or events (*Bob the Drummer*, *A Trip with My Dad*) of minor consequence.

Still, if you endeavor to hear the voices as instruments, Dada will take you on a truly heady musical trip. Overall, "El Subliminoso" is more consistent than "American

Highway Flower" (though it lacks a high point as bracing as *Gogo*), if not quite as eye-opening as the debut "Puzzle." Though a few songs are so fussily worked out that they tend to drag, Dada sparkles and shines in *Time Is Your Friend* (whose suite-like parts open up into a full-throttle, riff-heavy chorus) and *Sick in Santorini* (a roaring rocker with some wizardly playing by guitarist Michael Gurley). *Star You Are* is delineated in crystalline bursts of finger-picked acoustic chords, while Joie Calio's roiling bass underpins *You Won't Know Me*. Throughout, Phil Leavitt's whipcrack pulse, tasteful syncopations, and extremely musical drumming contribute to Dada's artfully transparent whole.

"El Subliminoso" is another virtuosic display by three guys who need only become as passionate about their words as they are about their music. *P.P.*

GO TO BLAZES:

Waiting Around for the Crash.

ESD 81162 (55 min).

Performance: Energetic ennui

Recording: Okay

Each of us has to decide for himself what is merely derivative and what is a fresh recycling of the Classic Rock vocabulary. Take the way that Go to Blazes combines snarly guitars with a shuffle beat in the track *Independence Day* — is that a Lynyrd Skynyrd retread or an invigorating way of communicating emotional ambivalence, or a little of both?

I've decided, for the most part, that although the fifth album by Go to Blazes may taste familiar, the old rock-and-roll wine

takes on a different kind of richness when it's decanted into these new bottles. Even if the guitar in *Win Again* recalls Neil Young and the rest of the band sounds like Crazy Horse, and even if the entire arrangement of *Nervous Type* sounds like a great lost track from "Exile on Main St.," these Philadelphians make it all work. That's largely because they combine their invigorating music with enervating slices of life. Time after time, their songs talk about wasted lives, about people who have so little to live for that they settle for each other. But these aren't characters out of *Slacker*. Rather, they verge on desperate. Even when they make a wry joke at their own expense — "I'm the guy who sits at the end of the bar / With my change in a puddle / My big plans have got me this far" — the worthlessness of it all simply cannot be denied. Ennui has never been given such an upbeat soundtrack. *R.G.*

KING'S X: Ear Candy.

ATLANTIC 82880 (50 min).

Performance: Back on track

Recording: Immediate

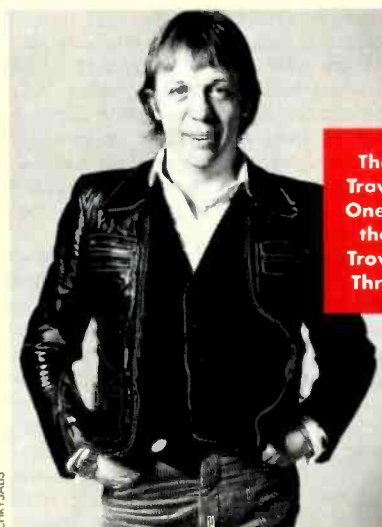
Last time we heard from King's X, we really didn't want to listen. After four albums of progressively hotter but not chart-burning hard rock, someone — the record company? the band's evil conscience? — told the group to dump sympathetic producer Sami Taylor and hire hip guy Brendan O'Brien. The result was 1994's "Dogman," and it certainly was one, man, a mostly lethargic and unfriendly metal mongrel. So I'm happy to report that "Ear Candy" is a delicious return to form.

IS IT A PERSON OR IS IT A BAND?

Look on the back of Robin Trower's early albums and you'll find a personnel listing that reads, "Robin Trower is: Reg Isidore (drums). James Dewar

(bass and vocals), Robin Trower (guitar)." Which is to say, "I'm not a solo artist, I'm part of a democratic band — but I'm still giving the band my complete name!" This dubious form of nomenclature is followed today by Polly Jean Harvey, who has indicated that "P J Harvey" refers to her band, not herself. *Please.* We'd like to applaud the forthrightness of Bob Mould, whose current album, *Bob Mould*, includes the pithy liner note "Bob Mould is Bob Mould."

Ken Richardson



CHRYSALIS

The "Robin Trower" with One Head vs. the "Robin Trower" with Three Heads



POPULAR MUSIC

The virtuosity of the band's third album, "Faith Hope Love," may be irretrievable by now, but the new record does show a King's X revived in its writing and freshly loose in its playing. Rockers like *The Train* and *Rain* hammer with welcome finesse, and ballads like *A Box*, *Mississippi Moon*, and the beautiful *Life Going By* summon melodies from a reserve that "Dogman" had us believe was completely exhausted. Furthermore, Arnold Lanni's co-production with the band, though visceral, never obscures the tunefulness.

"Ear Candy" is also notable for its skirmishes with religion. King's X has long made subtle celebrations of its Christian beliefs, but there are new doubts in the lyrics, some open to interpretation ("There is no room inside a box"), others unambiguous ("I questioned, I listened, I worshipped, how can I relate? I worked so hard at it... / I guess I lost my faith"). Still, there's a hint of resolution — "I had to run, I had to hide in the world outside / A better chance out there if God is everywhere" — and such honesty, put across in this album's heartening music, should be glory enough for the King's X devout.

As a matter of fact, if "Dogman" was among the worst failures of any established band, then "Ear Candy" certainly has to rank among the most satisfying comebacks of recent years. *K.R.*

MAXWELL'S URBAN HANG SUITE.

COLUMBIA 66434 (65 min).

Performance: Sweaty
Recording: Good

What we have here is the story of a seduction, taking us from first glance to marriage proposal and a little beyond, all set to a riveting, retro-R&B soundtrack. The subject is love and lust, and the approach is undeniably earnest — not the raunchy, use-'em-and-lose-'em attitude of the more aggressive school of today's hip-hopped-up music.

Maxwell's Urban Hang Suite loves to lay down tracks the old-fashioned way — with a band of studio musicians who know just

how to cook up a groove. Led by the economical guitar wizardry of Wah-Wah Watson, these folks pack plenty of energy and feeling into these steady tunes, sounding at times like such funk stalwarts of the past as Kool & the Gang and Sly & the Family Stone. The music seldom moves faster than a lope, and often slows to a sweaty crawl. The idea is to have everybody get drenched in the unbridled sensuality of the moment.

And Maxwell himself, the vocalist and primary songwriter, never fails to deliver. He can sound like a languorous version of Stevie Wonder, pushing and pulling his melismas. When his sexual temperature rises, he sounds like Marvin Gaye but without the scary desperation. Most of the time, though, he's his own sweet-voiced guy, dripping with sincerity. Even if he risks seeming naive, Maxwell knows what he wants, emotionally and musically. That confidence has enabled him to conjure an album that would not have sounded out of place two decades ago and that, remarkably, sounds fresher than anything else you'll hear in 1996. *R.G.*

METALLICA: Load.

ELEKTRA 61923 (79 min).

Performance: Loaded
Recording: Big

With Motörhead now past its peak and Soundgarden still approaching its own, Metallica stands proud as heavy metal's reigning band. Each of its albums has been a musical step forward, and "Load" is the most ambitious one yet, including first attempts at pop, along with blatant guitar-hero moves that work fine. Lyrically, Metallica still manages to avoid cliché even when dealing with rock's most tired topic, the hardships of being a rock star (heard in a good half-dozen songs here, notably *King Nothing*). And the band's social conscience endures, notably in *Cure*, an angry, AIDS-era song that nevertheless manages to hold out hope.

The real surprises on "Load" are the attention paid to songcraft and the major improvement in the vocals. Harmonies are used extensively for the first time. *The House Jack Built* sports a terrific hook, and *Mama Said* is a fully successful stab at country-blues à la mid-period Rolling Stones. The first single, *Until It Sleeps*, isn't too far from what R.E.M. has been doing lately, complete with a jangly tone in the guitar intro. Don't worry: It's not that Metallica has gone soft, just that the band has diversified.

Meanwhile, *Ain't My Bitch* and *Wasting My Hate* are thunderous bone-crunchers in the mold of Metallica's eponymous commercial-breakthrough album. *Bleeding Me* and *The Outlaw Torn*, at eight and nine minutes, bring back the epic lengths of earlier days — but instead of changing tempo every thirty seconds, they stand still long enough for guitarist Kirk Hammett to cut loose. And if the band wondered whether anyone would catch the Hendrix guitar quotes in the latter tune's fadeout... well, we did. *B.M.*

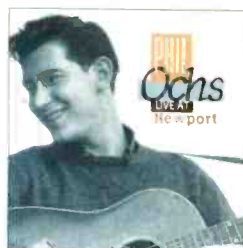
COCO MONTOYA:

Ya Think I'd Know Better.

BLIND PIG 5033 (49 min).

Performance: First there was Carlos
Recording: Excellent

Although it was only last year that Coco Montoya made his solo debut, "Gotta Mind to Travel," he had been a fixture on the blues scene for some time. That first album featured guest stars (John Mayall and Albert Collins, both of whom he had worked for), but his new one comes without celebrities, and frankly Montoya doesn't need any at this point. He is a fine singer — and you may consider it a compliment when I say that he sounds somewhat less polished here than on the earlier disc — but I am most impressed with his guitar work. Montoya is living proof that you don't have to be from the Deep South to get a grip on the blues, and when I hear how much he has improved in the few months that separate his albums, the future looks good. Favorite track? *Can't Get My Ass in Gear*... no, it's got to be the plaintive *Dyin' Flu*... or the ever-so-close-to-the-soil *Hiding Place*. Forget it, they are all worthy of your ears. *C.A.*



PHIL OCHS: Live at Newport.

VANGUARD 77017 (53 min).

Performance: Good sampler
Recording: Primitive

Phil Ochs wasn't so much a folk singer as a social activist armed with a guitar. Coming of professional age during the civil-rights struggle and the Vietnam War, he was a looming presence at the Newport Folk Festival, the most important event for his ilk in the Sixties. The recordings on "Live at Newport," dating from 1963, '64, and '66 and most of them previously unreleased, chart his creative course from Angry Young Man in *Ballad of Medgar Evers* to Protester with a Sense of Humor in *Draft Dodger Rag* to Populist Pacifist in the definitive Ochs song, *I Ain't Marching Anymore*. Finally, in the last period represented here, he turned into a Dylan-influenced ballad singer, as his songs grew longer (the satiric *The Party* runs more than eight minutes), more passive and brooding (*Cross My Heart*), and less political.

Ochs was a tragic figure: When the war was over and his music unfashionable, he went to Africa, where a beating wrecked his vocal cords. Soon he was a man out of step and out of work, and in 1976, at the age of 35, he hanged himself in his sister's house. That this album can bring back all the feelings of a troubled, highly frenetic era — and an exciting musical time — is testament to both his talent and his importance. *A.N.*

Unnatural Acts



POPULAR MUSIC

GP + THE EPISODES:

Live from New York, NY.
ROCK THE HOUSE/RAZOR & TIE
5051 (59 min).

Performance: Assured
Recording: Excellent live

Graham Parker's fourth live album (including the desirable 1992 import "Live Alone: Discovering Japan") is a nice bonus for fans, but it was recorded one tour too late. In 1994, Parker toured behind his Rhino anthology, "Passion Is No Ordinary Word," backed by the horn-driven Jersey bar band La Bamba and the Hubcaps. It was the liveliest ensemble he'd used in years, and the result — at least, on the night I saw — was among the performances of his career, combining the depth of his recent material with the sweaty soul of old.

"Live from New York, NY" was recorded a year later, after Parker had released the just-okay "12 Haunted Episodes" and returned to the semi-acoustic style he favors lately. His band this time is far too genteel, notably in *Protection*, which pales beside the barnstorming versions he used to play with the Rumour. But Parker's back catalog remains impressive, and this career-spanning set sheds light on some of his greatest non-hits, from *Crawlin' from the Wreckage* (a great rocker that he gave to Dave Edmunds but never recorded himself) to the Gulf War-inspired *Here It Comes Again*, which opens a political vein that Parker should explore further. The closing cover of Nirvana's *In Bloom* is less a generation-bridging gesture than a heartfelt version of a great song.

Parker's voice is notably craggier than it was a decade ago, and if the performances seldom catch fire, they maintain a steady simmer. Now if anyone's got a bootleg tape of those Hubcaps shows . . .

B.M.

FRED SCHNEIDER: Just . . . Fred.

REPRISE 46215 (37 min).

Performance: Fun
Recording: Loud

B-52's frontman Fred Schneider's second solo disc is one of those between-the-cracks albums that hasn't found its audience yet — which is a nice way of saying that it has already flopped. B-52's fans apparently don't know what to make of Schneider doing punk rock, and punk fans don't care. That's too bad, because both audiences would probably get a kick out of "Just . . . Fred."

Schneider certainly sounds like he's getting a kick out of working with the three young hopped-up bands who back him on different tracks. Each band pulls in a slightly different direction: Providence art-punkers Six Finger Satellite get him doing Sixties garage à la 13th Floor Elevators, the indie all-star band Deadly Cupcake plays loud arena-punk, and Shadowy Men on a Shadowy Planet do a triple-speed version of the old B-52's surf sound. Through it all, Schneider yelps, howls, and sneers like a guy well into his second shot at adolescence.

The mood is angrier than that of a B-52's album but not by much — not when the

one cover is Nilsson's profoundly goofy *Coconut* and the punk songs include lines like "What matters is anti-matter" and "Get out your high-heel Kleenex." *Whip and Lick* both prove that Schneider can drop the yuks and write a convincing twisted-love song, but the album's classic, *Sugar in My Hog*, finds him objecting in the strongest possible terms to . . . well, to someone putting sugar in his hog. By far the best song ever written on the subject, whatever that may be.

B.M.

MARTY STUART:

Honky Tonkin's What I Do Best.
MCA 11429 (38 min).

Performance: Deceptive
Recording: Good

It'll probably be another decade before Marty Stuart turns out an album to rival his 1992 masterwork, "This One's Gonna Hurt You." In the meantime, he continues to come up with solid and surprising records like "Honky Tonkin's What I Do Best." Surprising because often, on first listen,

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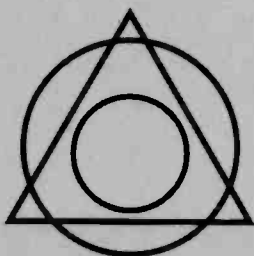
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they seem so simple (*Country Girls* is a three-chord exercise in hillbilly punk-rock). And also because he has the moxie to attempt something like *The Mississippi Mudcat and Sister Sheryl Crow*, a kind of mystical tall tale that begins with the sounds of bluegrass king Jimmy Martin's yelping coon dogs and then evolves into the saga of a sexual pickup (thrilling for its megawatt powerblues but a turnoff for Stuart's self-aggrandizing lyrics).

Stuart's vocal range is as narrow as a flower stem, his pitch is occasionally problematic, and his baritone is thin enough to read through. That said, he makes the most of his voice, singing a duet (again) with Travis Tritt in the unremarkable but infectious title track and surrounding himself with first-rate playing by guitarist Steuart Smith and fiddler Stuart Duncan. He's also getting better at setting a mood, especially with the rockabilly-on-steroids sound of *Rocket Ship* (which steals the countdown bass of *These Boots Are Made for Walkin'*), the slightly psychedelic *You Can't Stop Love*, and a hint of the Beatles in the melody and electric guitar riffs of *Thanks to You*. For a guy who sounds so simple, Stuart sure knows how to play it smart. **A.N.**

Collection

IN THEIR OWN WORDS 2: A BUNCH OF SONGWRITERS SITTING AROUND SINGING.

RAZOR & TIE 2824 (77 min).

Performance: Pearls and paste
Recording: Good

It worked well the first time, so they did it again: Vin Scelsa, New York radio guru, chats with singer/songwriters at the Bottom Line and entices some memorable (and some equally forgettable) performances out of the acts. This time, the roster includes Suzanne Vega (*Luka*), John Cale (*Paris 1919*), William Bell (*Born Under a Bad Sign*), Pete Seeger (*Get and Go*), and Patty Smyth (*Sometimes Love Just Ain't Enough*).

Often, such unplugged sessions seem heaven-sent, as in Bruce Cockburn's *Silver Wheels*. Other times, they prove that the performers need (a) a producer, as in the case of Vega, who nearly vegetates in the middle of her song, or (b) someone else to fully interpret their work (Bell, call your office). The program gets liveliest when several folks sing not their own tunes but favorites by others. Marcia Ball, for example, is fetchingly soulful in Randy Newman's *Louisiana 1927*, Don Dixon positively scorches the venerable *Fever*, and Jill Sobule turns in a hilarious version of Gloria Gaynor's disco melodrama *I Will Survive*.

Elsewhere, Billy Bragg is more entertaining in a mid-song rant about an anarchist soccer team than he is in the song itself (*To Have and Have Not*), General Johnson grows overwrought but powerful as a Pentecostal preacher in *Patches*, and David Johansen gets properly in-your-face in *Lookin' for a Kiss*. A mixed bag, and a lumpy one, but there are plenty of diamonds among the coal. **A.N.**



JAMES CARTER: Conversin' with the Elders.

ATLANTIC 82908 (78 min).

Performance: Fence-hopping
Recording: Quite good

Saxophonist James Carter is one of the most interesting players to hit the scene in recent years. A skillful technician with a robust tenor tone and an ability to generate considerable swing, he could easily settle into some emulation groove, but there is in him a rebel who wants to be heard.

A Jekyll-and-Hyde approach steers "Conversin' with the Elders," a series of dialogues with musicians who range from the sublime to the near ridiculous. Carter easily adapts to Lester Bowie's grotesque utterings in the opening *FreeReggaeIIBop*, adding a few of his own — and it works. I have never taken Bowie seriously as a musician, but this performance is sufficiently bizarre to appeal to my sense of humor. In *Airtied Valse*, however, he really demonstrates what a shallow trumpeter he is, and Carter's deliberate corn quickly wears thin. When it comes to surviving avant-gardists, I generally feel better about Hamiet Bluiett, although he, too, sometimes crosses the thin line between music and noise — a case in point being his squeaky-balloon treatment here of Anthony Braxton's *Composition #40Q*. Carter, whose own sense of humor borders on slapstick, takes the cue and throws in a bit of *Battle Hymn of the Republic*. The zaniness of Raymond Scott is evoked, but gimmick overshadow musical content — and it doesn't work.

Carter's dialogues with trumpeter Harry "Sweets" Edison and tenor saxman Buddy Tate are more conventional and honest. This is straight-ahead jazz, with former Basie sideman Edison exploding creatively in *Lester Leaps In*, eliciting a fine follow-up solo from Carter. In *Blue Creek*, Tate plays clarinet and Carter bass clarinet, creating a mood that saves an otherwise so-so performance. Meanwhile, pianist Craig Taborn, bassist Jaribu Shahid, and drummer Tani Tabbal are excellent throughout. **C.A.**

STEVE COLEMAN AND FIVE ELEMENTS: Curves of Life.

RCA VICTOR 31693 (78 min).

Performance: Guess you had to be there
Recording: Excellent

The ninth album by saxophonist Steve Coleman and Five Elements is also the group's first club recording. The idea was for the musicians to ignore that they were being recorded, and to simply follow prevailing vibes. One such vibe was to invite saxophonist David Murray to step up and squeal, as is his wont. His name may boost sales, but his presence here has no positive effect on the music. Other performers recruited from the audience, allegedly on im-

POPULAR MUSIC

pulse, are "lyricists" Black Indian and Sub-Zero, and someone named Kokayi. I take it that these are the rappers we hear in two tracks. *Drop Kick Live* (where they attempt a weak scat) and *I'm Burnin' Up* (where they go street and rap the trite fantastic).

Recorded during the same five-day booking at Paris's Hot Brass Club were performances by Coleman's other groups, Metrics and the Mystic Rhythm Society. One hopes those albums will be better; this one, except for Coleman's rendering of *The Gypsy*, is an exercise in tedium. **C.A.**

JEREMY DAVENPORT.

TELARC JAZZ 83376 (57 min).

Performance: Something's here

Recording: Good

The cover photo prompts skepticism: Is this forelocked twenty-something trumpeter/singer/songwriter supposed to be the new Harry Connick, a singing Brad Pitt, or a wholesome Chet Baker? Whatever. Jeremy Davenport's solos are entirely derivative of Wynton Marsalis, and his lyrics are too trivial to be taken seriously. But I suspect there's genuine talent here. His vocal interpretations of a handful of standards — including a gorgeously phrased *I See Your Face Before Me*, which I thought belonged exclusively to Johnny Hartman — show Davenport to be the most promising male balladeer to come on the scene since . . . well, since Connick. Here's hoping Jeremy matures better than Harry did. **F.D.**

RODNEY KENDRICK:

Last Chance for Common Sense.

VERVE 531 536 (57 min).

Performance: Archaeology

Recording: Good

Formerly Abbey Lincoln's accompanist, Rodney Kendrick has too much going on in his musical mind to remain in anybody's background. The pianist/composer's new album has short rhythm segments separating the main selections, so think of it as containing nine rather than the indicated sixteen tracks. Kendrick seems to be exploring the myriad paths of Charles Mingus and Thelonious Monk, showing a fondness for the former's impressionistic, organized chaos and the latter's whimsical jack-in-the-box approach. I happen to like both, so Kendrick gets no complaints from me — but this ain't all Mingus and Monk, for Kendrick applies African textures to the weave. He imbues it all with enough of himself to satisfy my demand for something not totally borrowed. The good supporting cast includes trumpeter Graham Haynes, alto saxophonist Justin Robinson, and, in a cameo, Dewey Redman. Abbey Lincoln's loss is our gain. **C.A.**

JAMES MOODY: *Young at Heart.*

WARNER BROS. 46227 (55 min).

Performance: Irresistible

Recording: Very good

James Moody is a veteran saxophonist whose albums rarely capture his full measure. But "*Young at Heart*" — a collection of tunes associated with Frank Sinatra, featuring the ebullient Moody with horns

and strings wittily arranged by Gil Goldstein — comes very close. Goldstein displays a keen awareness of Gil Evans's charts for Miles Davis and those of Nelson Riddle and Billy May for Sinatra. And Moody himself is irresistible, whether delivering the lyrics of the title song like Elmer Fudd with perfect pitch or slyly venturing outside the chords in *Come Fly with Me* and the album's many ballads. This is one of the year's best albums, and perhaps the nicest thing about it is that you needn't

be a stone jazz fan to enjoy it. Its appeal strikes me as instant and universal. **F.D.**

MARIA SCHNEIDER JAZZ

ORCHESTRA: Coming About.

ENJA 9069 (68 min).

Performance: Encouraging

Recording: Excellent

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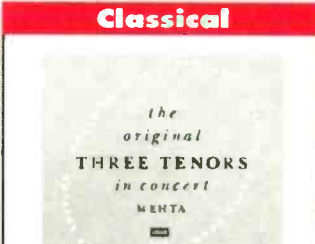
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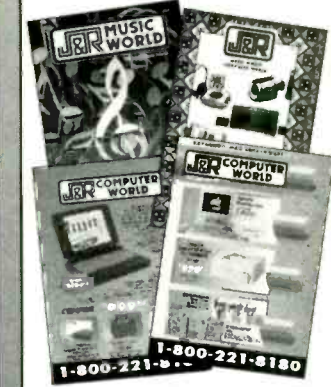
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QUICK FIXES

BEN-HUR (original motion-picture soundtrack).

RHINO 56826 (two CD's, 148 min). Overblown as it occasionally is, Miklos Rozsa's score for this 1959 epic remains one of the most impressive achievements in film music. This is the first appearance of the entire actual soundtrack, and, as usual, Rhino's treatment (outtakes, copious notes and photos, deluxe book format) is as much a joy as the music. S.S.

VISHWA MOHAN BHATT/ JERRY DOUGLAS:

Bourbon & Rosewater.
WATER LILY ACOUSTICS 47 (43 min). Free improvisations based on American country music and a little jazz with traditional Hindustani music produce an insinuating and heady mix. The plucked instruments (dobro and the guitar-like Mohanvina) blend well, the country-melody strains give Western ears something linear to follow, and the Asian component provides mystery, allure, and a touch of class. *William Livingstone*



JACKIE GLEASON:
How Sweet It Is! The Jackie Gleason Velvet Brass Collection.

RAZOR & TIE 2111 (51 min). Need another sign that the current lounge revival is out of control? Try this collection of the big band stuff that Gleason pretended to arrange and conduct in the late Fifties and early Sixties. The real action here is in the bonus tracks, including a nice mono version of the *Honeymooners* theme and a seemingly endless monologue (*To a Sleeping Beauty*) in which the Great One comes across as the creepiest parent since Norman Bates's mom. S.S.

JOHN HANDY:
Live at the Monterey Jazz Festival.

KOCH JAZZ 7820 (47 min). Nice to have this one on CD — the alto saxophonist's 1965 breakthrough, featuring his quintet's swelling performances of two of his very Mingus-like compositions. In its own time, this extremely popular album dramatized how quickly certain elements of free jazz were being absorbed into the mainstream. So much for historical

importance; what matters is that the music sounds as fresh as it did back then. F.D.

GHULAM MUSTAFA KHAN.

NIMBUS 5409 (75 min). In this recital of Hindustani vocal music, Ghulam Mustafa Khan sings elaborate lines over a fabric of droning tabla, harmonium, and tambura. We can't follow the narrative, but the varied exotic pitches and rhythms hold the listener's interest. W.L.



JEANNE MOREAU.

DRG 5567 (53 min). In which the great French New Wave actress and Thinking Man's Sex Symbol warbles twenty-one inexplicably perky cabaret songs. Trust me: If you don't speak the language, it will all seem surprisingly odd. S.S.

CLARA NUNES: ComVida.

HEMISPHERE 37233 (47 min). A great Brazilian exponent of the samba, Clara Nunes died in 1983. This tribute to her — "With Life" — consists of vocals by some of the most important current stars in Brazilian popular music edited seamlessly into Nunes's original recordings, resurrecting her work in a new focus. The result is sunny and beguiling. W.L.

SQUIRREL NUT ZIPPERS: Hot.

MAMMOTH 0137 (75 min; enhanced CD). The enhanced CD can be ideal for getting to know a developing band. Case in point: "Hot," which augments the Squirrel Nut Zippers' mod swing-jazz with a generous, attractive multimedia program of photos, video segments, song clips, lyrics, and National Public Radio interviews. Special guest images: Conan O'Brien and O.J. Simpson. Nice job. K.R.

TONIO K.: Romeo Unchained.

GADFLY 217 (45 min). **Notes from the Lost Civilization.**
GADFLY 218 (44 min). Back when the world was young (the mid-Eighties), these jeremiads from our most corrosively sane singer/songwriter struck me as masterpieces. Now, on CD at last, they still do, sort of. "Romeo Unchained" has a glossy production that dates it slightly, but it also has *I Handle Snakes*, still the finest heavy-metal treatment of its subject. The rootsier, more somber "Notes" boasts *You Were There*, a love song of ineffable poignancy. In sum: big guitars, big insights, great jokes. Buy 'em. S.S.

opening *El Viento* shows that she's the only one who has come close to capturing his sense of *duende* — to say nothing of the sense of rhythmic momentum that underlays Evans's music even at its most lush.

"Coming About" has its problems. Although the three-part *Scenes from Childhood*, the album's half-hour-long centerpiece, boasts moments of absolute beauty, it doesn't hold together as program music or as an extended work. And while Schneider's decision to let her soloists expand upon her compositional moods sounds good in theory, she often lets the solos go on too long: only guitarist Ben Monder and tenor saxophonists Rich Perry and Rick Margitza do her pieces real justice. For all of this, "Coming About" is an encouraging follow-up to 1994's "Evanescence." Schneider is keeping her mentor's legacy alive while rapidly developing her own voice. F.D.

LESTER YOUNG:

The Immortal Lester Young.

SAVOY JAZZ 78817 (45 min).

Performance: Still young
Recording: Excellent transfers

From Denon's recently resurrected, beautifully packaged Savoy Jazz label comes a reissue of "The Immortal Lester Young," a compilation of sides made with various star-studded groups and Earl Warren's big band during the latter half of the Forties, when Young was in splendid form and his style and tone inspired a new generation of tenor saxophonists. He did his most effective work with small groups, as in a session here featuring pianist Johnny Guarnieri's Swing Men. With trumpeter Billy Butterfield and clarinetist Hank D'Amico completing the front line, and the leader doing blatant but effective Basie imitations, these performances are typical of a time when great musicians were plentiful and even the most casual studio gatherings yielded memorable results. The real Count Basie appears on four tracks that also include guitarist Freddie Green from Basie's original All-American Rhythm Section — great stuff, especially *Jump, Lester, Jump*. The three Earl Warren sides were not on the original LP, and they are the least interesting of the CD's fifteen tracks, but Lester Young blew few notes not worth repeating. C.A.

BOBBY ZANKEL TRIO:

Human Flowers.

CIMP 103 (70 min).

Performance: Wow
Recording: Excellent

A spinoff from *Cadence* magazine, CIMP is an audiophile label dedicated to presenting venturesome improvised music. The choice CD among the first five releases teams alto saxophonist Bobby Zankel with pianist Marilyn Crispell and drummer Newman Baker. If the instrumentation recalls the Cecil Taylor Unit of 30 years ago, with Jimmy Lyons and Sunny Murray, so do the heady results: The three-way interplay is both ruminative and dynamic, lyrical but steel-ribbed. Crispell has never sounded better, and the unsung Zankel emerges as a soloist and composer to watch. F.D.

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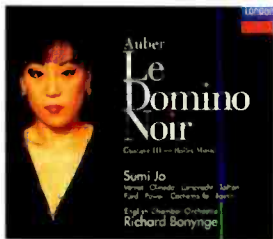
NEW RECORDINGS REVIEWED BY ROBERT ACKART,
RICHARD FREED, DAVID HALL,
JAMIE JAMES, GEORGE JELLINEK, AND ERIC SALZMAN

AUBER: *Le Domino Noir*; *Gustave III*, *Overture and Ballet Music*.

Sumi Jo (Angèle), Isabelle Vernet (Brigitte),
Bruce Ford (Horace), others: London Voices;
English Chamber Orchestra, Richard Bonyngne
cond. LONDON 440 646 (two CD's, 144 min).

Performance: Appropriately frothy
Recording: Bright

Parisian operetta is possibly the lightest
music ever written; properly done, it's
the musical equivalent of a meringue. At
their best these works give you a smile you
can't wipe off your face and make you want
to get up off your can-can and dance. Daniel-
François-Esprit Auber was a master of the
genre, turning out dozens of these frothy



concoctions for the Opéra-Comique with
his collaborator, the libretto machine Eugène
Scribe.

Auber's delightful *Le Domino Noir* received
more than 1,200 performances in Paris
between its première in 1832 and the start
of World War I in 1914. It opens at a
masked ball in old Madrid, where a young
nobleman (the tenor) falls in love with a
girl (the soprano) who is being pursued by
an avaricious old English lord (the baritone).
They blunder through three acts of
mistaken identities and other absurd ironies
until it is revealed that Angèle, the girl, is a
fun-loving novice nun. Not surprisingly, the
Englishman gets his comeuppance. Angèle
gives up her religious vows to marry the
boy, and their best friends fall in love with
each other, making for a double wedding.

Richard Bonyngne conducts an efferves-

cent performance by the English Chamber
Orchestra that is perfectly faithful to the
score. He has found an ideal Angèle in Sumi
Jo: Her flexible, golden-hued voice is well
suited to this material. Bruce Ford sings
the part of young Horace, Angèle's beloved,
with ardent, affecting warmth. The small
parts are also well cast, with Martine
Olmeda especially fine as the scheming
maid Jacinthe. The set is generously filled
up with the lilting overture and ballet music
from Auber's grand opera *Gustave III*, which
is primarily remembered today as the first
setting of the libretto by Scribe that Verdi
later used for *Un Ballo in Maschera*. J.J.

BACH: *English Suites Nos. 4 and 5*; *Tocatta in C Minor*; *Fantasia in C Minor*.

João Carlos Martins (piano).
CONCORD CONCERTO 42035 (50 min).

Performance: Bracing
Recording: Vivid

João Carlos Martins was one of the most
interesting of the young pianists (several
of them Brazilian) the Connoisseur Society
introduced on LP back in the 1960's. He recorded
Bach's complete *Well-Tempered Clavier*
and the six keyboard partitas then; now he
is making his way through all of Bach's
clavier music for Concord Concerto. His
high-voltage performances here may strike
some listeners as bracing and others as
merely breathless; my own vote is for
bracing. The fast sections tend to be very
brisk, and unusually robust, but never
become a scramble. The gigues are so
explosively festive that you may wonder
if they will wear well, but doubts tend to
disappear with repeated hearings. The
sarabandes are kept moving, too, and benefit
enormously in cohesiveness and dignity.
Most of the music here, in fact, makes
excellent sense, the one misfire being the
brief C Minor Fantasia, which does seem
uncomfortably driven despite Martins's
all but miraculous clarity at any speed.

The Bulgarian-made recording makes
the most of that clarity, giving the piano an

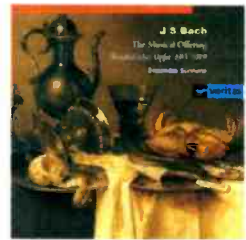
exceptionally realistic presence — though
the very close focus may add a smidgen of
relentlessness to the general impression of
refreshing vitality. The disc's only real
shortcoming, in fact, may be its short
playing time. R.F.

BACH: *The Musical Offering*.

Ensemble Sonnerie. VIRGIN 45139 (72 min).

Performance: Excellent playing
Recording: Okay

In 1747, Bach made a visit to the court of
Frederick the Great, who received the
venerable kapellmeister with due homage
and handed him a fugue theme on which he
improvised with great learning and
panache. Afterwards, Bach elaborated the



theme into a trio sonata for flute (the king's
instrument), violin, and continuo and a series
of complex fugues and puzzle canons, all
of which he printed — at his own expense!
— and dedicated to the king under the
title *The Musical Offering*.

The two monumental fugues, called "ricercars,"
seem to be intended for keyboard, although
the one in six voices is written out in full
score. The canons are mostly not written
out at all; it is up to the reader or the
performer to figure them out from the
enigmatic notation.

Ensemble Sonnerie, an excellent early-
instrument group consisting of three winds
and three strings, has made its own
arrangements of the canons and the six-voiced
ricercar, with mixed success. The best
performances are of the trio sonata and the
two ricercars as played by the group's
excellent keyboardist, the unforgettably
named Gary Cooper. The alternative
multi-instrumental arrangement of the
Ricercar a 6 seems languid and without
urgency, and yet it is only 45 seconds
slower than Cooper's taut performance!
Some of the canon realizations seem
almost unmusical. Another problem is
that everything is in the same key, and
despite the variety of the instrumentation,
there is a pervasive sameness to the
arrangements. E.S.

BEETHOVEN: *Overtures, Vol. 2*.

Nicolaus Esterhazy Sinfonia.
Bela Drahos cond. NAXOS 8.553431 (72 min).

Performance: Splendid
Recording: Very good

Although Vol. 1 has yet to appear, this
CD is a delightful (and budget-priced)
supplement to the thrice-familiar
Beethoven overtures in most collections.
The five here — *The Consecration of the
House*, *Name-Day Celebration*, *Leonore*
Nos. 1 and 2, and *King Stephen* — are
heard far less frequently than the other
six, and all of them

receive absolutely splendid performances. Bela Drahos, the conductor, is a former flutist. He has the winds especially on their toes, but the entire Esterhazy Sinfonia is a joy to listen to, with warmth of heart as well as considerable brilliance illuminating every item on the disc.

The most intriguing item for many listeners may well be one of the three filler pieces, the *Music for a Knightly Ballet* (*Ritterballett*) composed by the twenty-year-old Beethoven, still in Bonn, for a performance there in March 1791 by Count Waldstein and other aristocrats. Waldstein was actually named as the composer on that occasion, and there is little in the music to give Beethoven away. It's a bit kitschy, in fact, but rather adorable all the same: a good-humored sequence of characteristic pieces — a march, a hunting song, a romance, a war song, a drinking song, a German dance — linked by a recurring "German Song" whose genial strains finally yield to a robust coda. It's been recorded four or five times before, but never with so much unabashed relish, or quite so much polish.

The Funeral March that Beethoven provided for Duncker's play *Leonore Prohaska* (by orchestrating the slow movement of his Piano Sonata No. 12) and his Triumphant March for Kuffner's *Tarpeja* are less remarkable but interesting enough in the general context of his theater music, and they are as handsomely played and recorded as the rest of the program. *R.F.*

FAURÉ: Songs; Nocturnes Nos. 2 and 5. Sanford Sylvan (baritone); David Breitman (piano); Lydian String Quartet. NONESUCH 79371 (62 min).

Performance: Stylish
Recording: Excellent

Gabriel Fauré is one of those composers, gifted yet indisputably minor in accomplishment, who nonetheless — or perhaps for that very reason — attract passionate advocates. Sanford Sylvan, best known as a champion of American song, here offers a lovely recital disc of some of Fauré's best melodies, and it makes an admirable introduction to his haunting, sweetly idiosyncratic vocal music.

The disc revolves around two song cycles, *La Bonne Chanson*, perfumed settings of decadent poems by Paul Verlaine with accompaniment by string quartet, and *L'Horizon Chimérique*, composed in 1921, just three years before Fauré's death. Although the somewhat incoherent liner notes state repeatedly that the latter is a great composition, it is, in fact, a willfully strange, problematic work, with fantastical texts by a French poet named Jean de la Ville de Mirmont, who died at 24 as a soldier in World War I. Sylvan makes a persuasive case for these eccentric songs, infusing just the right measure of passion into his admirably fluid, conversational delivery.

The inclusion of two of Fauré's nocturnes for piano makes the disc more like a Parisian *soirée musicale*, with a mix of songs and instrumental interludes. Yet while David Breitman is a remarkably sympathetic accompanist, he doesn't really have much

of interest to say about these pieces. They are nicely played but lack the temperamental fire, stoked with generous doses of rubato, that would be needed to propel them. *J.J.*

FUCHS: Clarinet Quintet. WEBER: Clarinet Quintet.

Paul Meyer (clarinet); Carmina Quartet. DENON 78801 (55 min).

Performance: Top-drawer
Recording: Very good

Robert Fuchs (1847-1927) was both a prolific composer and a much sought after teacher of counterpoint. Among his most celebrated pupils — Mahler, Hugo Wolf, and Sibelius — only the last outlived him. His Clarinet Quintet, written in a charmingly lyrical post-Brahmsian musical language, is beautifully crafted and easy on the ear. A Viennese elegance informs the two middle movements, and a beguiling theme serves as basis for the final movement's set of variations.

Carl Maria von Weber's Clarinet Quintet is of a decidedly more virtuosic cast but makes for equally agreeable listening. The *capriccio presto* third movement presents a particularly formidable challenge for the soloist. The French-born clarinetist Paul Meyer displays world-class musicianship in every department, and the members of the

Swiss-based Carmina Quartet are ideal colleagues. Given the flawless recorded sound and wonderfully refined yet vital performances, this CD would make perfect after-dinner listening. *D.H.*



LUTOSLAWSKI: Symphony No. 2; Piano Concerto; Chantefleurs et Chantefables; Fanfare for Los Angeles Philharmonic.

Paul Crossley (piano); Dawn Upshaw (soprano); Los Angeles Philharmonic.

Esa-Pekka Salonen cond. SONY 67189 (74 min).

Performance: Very good
Recording: Good

Esa-Pekka Salonen opens this imaginative and colorful mini-anthology of music by the contemporary Polish composer Witold Lutoslawski almost literally with a blast: the brief Fanfare for Los Angeles Philhar-

Americana from Anne Akiko Meyers

For my money, San Diego-born Anne Akiko Meyers has hit the jackpot with this American program comprising Piston's 1945 *Sonatina* for Violin and Piano, Copland's masterly *Violin Sonata* (from the period that produced *Appalachian Spring*) and his bluesy 1936 *Nocturne*, Ives's *Violin Sonata No. 4* ("Children's Day at the Camp Meeting"), and the Gospel-flavored *Blues* by David Baker (1966). She has the superbly vital keyboard collaboration of André-Michel Schub.

The Piston sonatina, originally with harpsichord, is a delectable piece of Neoclassical Americana highlighted by an aria-like slow movement worthy of J. S. Bach. The Copland sonata, the high point of the disc, is arguably his chamber-music masterpiece. Meyers and Schub bring to its performance an ideal amalgam of poetic sensibility and rhythmic vitality. It is a joy to hear such wonderfully controlled vibrato, with just the right degree of warmth or "cool" that the music demands. The walking-on-eggs slow movement is a

stunning achievement. Schub's fingers get a marvelous workout in the finale, where Meyers's violinistics bring tremendous verve to Copland's rhythms.

Many interpreters of the most popular of the Ives violin sonatas tend to underline its idyllic aspects, but Meyers opts for a forthright and vigorous treatment. The Copland *Nocturne* gives her a chance to exploit her command of nuance, as does the Baker *Blues*, recalling jazz-violin stars like Joe Venuti and Stéphane Grappelli.

I enjoyed this well put-together program immensely. Sound quality and instrumental balance are close to perfect. Don't pass this one by!

David Hall



ANNE AKIKO MEYERS: The American Album.

Piston: *Sonatina for Violin and Piano.*

Copland: *Violin Sonata; Nocturne.*

Ives: *Violin Sonata No. 4.* Baker: *Blues.*

Anne Akiko Meyers (violin); André-Michel Schub (piano).

RCA VICTOR 68114 (55 min).

EIJI OUE, STAR OF THE NORTH

Hardly anyone had heard of the Japanese conductor Eiji Oue, now 39, when he was appointed to succeed Edo de Waart as music director of the Minnesota Orchestra. His previous post was with the Erie (Pennsylvania) Philharmonic, but as a guest conductor he had made a strong impression on both the public and the musicians themselves in Minneapolis, and in the year or so between the announcement and the actual beginning of his tenure last fall audiences in Philadelphia, Chicago, Washington, and other cities had opportunities to size him up in guest appearances with their orchestras.



AVMS UPTIS/REFERENCE RECORDINGS

Conductor Eiji Oue: a Wheaties man?

By the time he took up residence in Minneapolis he had established an enormous and thoroughly positive presence. A measure of the community's wholehearted acceptance is his picture dominating the design on a "limited edition" box of Wheaties, made by the Minneapolis-based General Mills — an unprecedented gesture.

The orchestra itself, a conspicuous presence on records since the tenure of Eugene Ormandy in the early 1930's, was the flagship band for Mercury's Living Presence series under Antal Dorati and Stanislaw Skrowaczewski, when it was still called the Minneapolis Symphony. By either of its names, it has never sounded as stunning as it does on Oue's first two discs for the San Francisco-based audiophile label Reference Recordings, both of which use the HDCD (High Definition Compatible Digital) process. They focus on the colorful repertory with which he has especially identified himself: three works by Stravinsky on one and dance

pieces from eight operas on the other.

All of it is fine material for showcasing a virtuoso orchestra and a virtuoso recording operation, and, happily, the music itself is very well served. In Stravinsky's *Firebird* suite (standard 1919 version) and *The Song of the Nightingale*, Oue lets the big tunes appear to be phrasing themselves without his coaxing; he shows as much concern for subtlety as for brilliant effects and achieves a convincing fairy-tale quality in his balancing of these elements. Far too many conductors these days seem unwilling to let their orchestras play really softly. Oue is not one of them: The soft passages here are every bit as stunning in their way as the explosive ones. At the end of this well-filled disc is an account of *The Rite of Spring* that benefits from the same combination of uncommon thoughtfulness and reliable instincts on the conductor's part, and the same level of committed response on the orchestra's. In all, a very competitive package.

The dance collection is simply one of the most appealing discs of its kind; the impression is sustained throughout the hour-long playing time that everyone in the orchestra was thoroughly enjoying this assignment and giving his or her best. Together with alert, well-characterized presentations of familiar material from operas by Rimsky-Korsakov (*Dance of the Tumblers from The Snow Maiden*), Richard Strauss (*Salome's Dance*), Tchaikovsky (*Cossack Dance from Mazepa*), Mussorgsky (*Persian Dances from Khovanshchina*), and Saint-Saëns (*Bacchanale from Samson et Dalila*), Oue conducts the polonaise from Dvorak's *Rusalka*, the kitschy but adorable ballet music from *The Demon* by Anton Rubinstein, and a suave, flavorful performance of the extended ballet sequence from Henri Rabaud's *Marouf* that by itself is worth the price of admission.

And so is the sound quality on both discs, which are exemplary in terms of full-depth realism and superb balance even played without an HDCD converter — but definitely more impressive still with one. *Richard Freed*

STRAVINSKY:

Firebird Suite; Song of the Nightingale; The Rite of Spring. Minnesota Orchestra, Eiji Oue cond. REFERENCE RR-70CD (74 min).

EXOTIC DANCES FROM THE OPERA.

Minnesota Orchestra, Eiji Oue cond. REFERENCE RR-71CD (61 min).

monic of 1993. A quasi-aleatoric work for brass and percussion, it is highly dissonant at the start but comes to a resounding unison conclusion. We then move backward in time to 1987 and the brilliant and fascinating Concerto for Piano and Orchestra. The opening movement suggests bird song, and an exciting "chase" toccata follows, but the lyrical essence of the work resides in the intensely poetic slow movement with its haunting horn solo. The finale is a pascaglia of sorts, its ten-bar theme consisting of short notes separated by rests rather than the expected progression of even notes. The solo role calls for virtuosity of the highest order, while the resourceful orchestral scoring is on a par with Messiaen's in terms of color and imaginative use of percussion.

We then move into the realm of the solo voice with the 1990 song cycle *Chantefleurs et Chantefables*, nineteen settings of texts by the French poet Robert Desnos. Here is Lutoslawski at his most delicate and refined, recalling Poulenc in both his comic and bittersweet moods, but with a sharper edge of irony along with more intense and nostalgic atmospherics.

The Second Symphony, from 1966/67, finds Lutoslawski experimenting with aleatoric techniques, chiefly in the rhythmic realm. The discursive first movement (marked "hesitating") suggests a conversation proceeding on a variety of levels, ranging from murmurous to strident, and the concluding second movement (marked "direct") is highly dramatic, with a telling use of winds and percussion.

The performances here are all masterly. Dawn Upshaw is both elegant and eloquent in the Desnos song cycle, like the Fanfare a premiere recording, and Paul Crossley does a convincing job with the Piano Concerto. The recorded sound from the Todd-AO Scoring Studio is crisp and clean. *D.H.*

MAHLER: Symphony No. 6.

Israel Philharmonic, Zubin Mehta cond. TELDEC 98423 (78 min).

**Performance: Sinewy
Recording: Good**

The Israel Philharmonic is no heavy-weight aggregation after the manner of the main orchestras of Vienna, Amsterdam, New York, or Chicago. Nor is Tel Aviv's Mann Auditorium, with its rather tight acoustic, an ideal recording venue for Mahler's vast sonic canvases. Combined with Zubin Mehta's reading, the result is a performance of the Sixth Symphony (sometimes called the "Tragic") that is best described as lean and sinewy, especially in the grim, march-saturated first movement and the complex, agonized finale. The famous "Alma" motive, for one thing, could use a lot more heart. On the other hand, the extroverted drama, exemplified by the notorious hammer blows, comes through loud and clear, as do the sinister and brutal aspects of the scherzo. Only in the fine string playing at the climax of the slow movement do we get anything like the heart and soul found in, say, Leonard Bernstein's recordings of the work.

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For an interpretation similar in style to Mehta's, but with a superior orchestra and better sound, there is Christoph von Dohnanyi with the Cleveland Orchestra on London (but on two CD's rather than one). In all fairness to Mehta, he does, like Dohnanyi, manage to sort out and make clearly audible every strand of the long and intricate final movement, and in this he is helped rather than hindered by the acoustic, thanks to a well-placed microphone array. *D.H.*

SIBELIUS: Flower Songs, Op. 88; other songs.

Karita Mattila (soprano); Ilmo Ranta (piano).
ONDINE 856 (61 min).

Performance: Very good
Recording: Very good

For a composer whose true medium was the orchestra, Sibelius left an estimable legacy of some 100 songs. About a quarter of this output is included here, among them a few much-recorded items (*The Tryst*, *Black Roses*, *The Diamond on the March Snow*) and several rarities, such as his cycle of flower songs. They cover a wide range of moods and styles, ranging from the terse and conversational to highly demanding operatically styled pieces (*Jubal*, *Arioso*).

Although his songs are frequently associated with baritones, it should be remembered that such sopranos as Kirsten Flagstad, Birgit Nilsson, and Elisabeth Söderstrom have also championed these austere, haunting, and in many ways unique inspirations. In this refreshing recital Karita Mattila copes impressively with their wide range and unusual vocal demands (wide leaps, melismatic writing). Her singing is virtuosic at times, but her midrange vibrato occasionally intrudes. *G.J.*

STRAVINSKY: Petrouchka (1911 version); Jeu de Cartes.

Chicago Symphony, Georg Solti cond.
LONDON 443 775 (57 min).

Performance: Resplendent
Recording: Handsome

Stravinsky has never played a major role in Georg Solti's repertoire. These 1993 Chicago concert recordings thus come as a surprise, and a pleasant one. The complete *Petrouchka* ballet, in all the luxuriance of the original 1911 score, gets a vivid big-scale treatment. The 1936 "ballet in three



deals." *Jeu de Cartes*, which depicts a poker game, is prime Neoclassical Stravinsky laced here and there with tongue-in-cheek quotations from earlier music, most prominently Rossini's *Barber of Seville* overture. It makes for delightful listening, and the recurrent theme that links the "three deals" is

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one of those tunes that, once heard, just won't go away.

Performances of works in Stravinsky's Neoclassical idiom tend to be over-refined. There is nothing prissy about these, however, and the London sonics have all the bloom and brilliance that I've missed in some of the more recent Chicago recordings from Teldec. *D.H.*

VIVALDI: The Four Seasons.

Marion Verbruggen (recorder): Flanders Recorder Quartet.
HARMONIA MUNDI 907153 (39 min).

Performance: Superb
Recording: Excellent

Vivaldi's popular set of violin concertos known as *The Four Seasons* have been rearranged for flute, guitars, jazz instruments, and the natural sounds of wind, waves, and birds. But none of the above have succeeded as well as this new "fiddle-free" arrangement for five recorders. Vivaldi himself wrote a good bit of music for recorders, and the sound is quite idiomatic and authentic. The arrangement is distinguished by its exceptional musicality, and the performance is stunning, with every phrase beautifully articulated. Marion Verbruggen is an unparalleled virtuoso on this instrument, but who knew that five recorders could provide such a rich palette of colors? The playing time is short for a classical CD, but that's a minor drawback. I think Vivaldi would have liked this wonderful recording. I love it. *William Livingstone*

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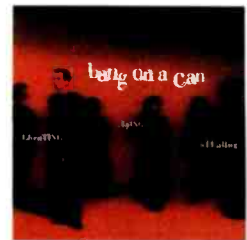
SONY 62254 (68 min).

Performance: Virtuoso funk
Recording: Hard, brilliant

The group of New York-based composers and performers who call themselves Bang on a Can are a lot more sophisticated than the name might suggest, but they do delight in playing rough. David Lang, who wrote the title piece here, *Cheating, Lying, Stealing*, points out in the notes that classical composers are always trying to express how wonderful and profound they are. Lang tries the opposite with a clever piece about being disreputable. Does he succeed? Not quite — the music may be a little too good for its own good.

The whole bad-boy/bad-girl aesthetic is somewhat labored, but the Bang on a Can gang does succeed in producing music that is diverting and off the beaten track. Evan Ziporyn's *Tsmindao Ghmerto*, in which he attempts to produce the sound of religious choral music by humming and playing multiphonics on his bass clarinet, is not even rough-edged, but it extends our musical horizons in a startling and beautiful way. Frederic Rzewski's Busoni-esque Piano Piece No. IV (dating from 1977) and Ziporyn's arrangement of music by the Brazilian instrumentalist and arranger Hermeto Pascoal also offer unexpectedly wider horizons. There is rough and tumble, too, espe-

cially in the wildly out-of-tune, altered-key-board sounds of Annie Gosfield's *The Manufacture of Tangled Ivory* and the almost Dada-esque non sequiturs of Nick Didkov-



sky's *Amalia's Secret*, as surrealist a piece of music as you will ever hope to hear (the title is taken from Kafka). Brilliant, funky performances in a tough-minded recording that is hard going but has its rewards. *E.S.*

HAROLYN BLACKWELL:

A Simple Song

(Blackwell Sings Bernstein).

Harolyn Blackwell (soprano); orchestra. Danny Troob cond. RCA VICTOR 68321 (48 min).

Performance: Stylish
Recording: First-rate

Harolyn Blackwell is one of those contemporary singers who can move with consummate ease from opera to theater and pop with no apology and without even changing gears. That — plus a few small matters like her voice, personality, and deep musicality — makes her the quintessential Bernstein performer. She first came to notice on Broadway in the *West Side Story* revival, and this CD includes her devastating version of *Somewhere* as well as three duets from that show, all sung here with, of all people, Vanessa Williams. The other material ranges from "A Simple Song" (from *Mass*) and songs from *Peter Pan* to *Glitter* and *Be Gay* from *Candide* and some of Bernstein's party/cabaret songs.

Blackwell has a canny and sympathetic collaborator in Danny Troob, who arranged and conducted (and helped perform) the music on this CD as if it were one big theater piece. The concept, the production (by the veteran Bernstein producer John McClure), the sound, and the performances are all delightful. *E.S.*

STOKOWSKI TRANSCRIPTIONS.

Bach: *Sheep May Safely Graze; Wacht auf;*

Ein feste Burg; Toccata and Fugue in

D Minor. Beethoven: Piano Sonata No. 14

(*"Moonlight"*), first movement. Boccherini:

Mimuet. Chopin: Prelude in E Minor. Debussy:

Clair de Lune; La Cathédrale Engloutie.

Franck: *Panis Angelicus. Rachmaninoff:*

Prelude in C-sharp Minor. Tchaikovsky:

Andante Cantabile; At the Ball.

Philadelphia Orchestra, Wolfgang Sawallisch

cond. EMI 55592 (66 min).

Performance: Excellent

Recording: Very good

Over the years, many of the transcriptions Leopold Stokowski created as conductor of the Philadelphia Orchestra have been performed by other conductors. Some have even been recorded — but not



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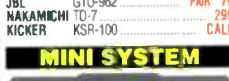
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BEETHOVEN: Violin Sonatas No. 9 ("Kreutzer") and No. 10.

Gidon Kremer (violin); Martha Argerich (piano). DEUTSCHE GRAMMOPHON 447 054 (65 min).

The vibrancy, expressiveness, and unlabored charm Gidon Kremer and Martha Argerich brought to the three Op. 30 sonatas with which they launched their Beethoven cycle are nowhere to be found in these surprisingly dull (and occasionally heavy-handed) accounts of the "Kreutzer" and the final sonata. *R.F.*

DUFAY: Mass for St. Anthony of Padua.

Pomerium. Alexander Blachly dir. DEUTSCHE GRAMMOPHON ARCHIV 447 772 (69 min). Guillaume Dufay was the preeminent composer of Renaissance Florence. This ornate, heart-meltingly sweet mass must have been a personal favorite of the composer, for in his will he established a fund to pay for annual performances of it at the cathedral in his home town of Cambrai. Pomerium, an accomplished choir based in New York City, sings the piece beautifully, though the recorded sound is a bit too bright. *J.J.*

HARVEY: Concerto Antico.
GRAY: Guitar Concerto.

John Williams (guitar); London Symphony. Paul Daniel cond. SONY 68337 (61 min). Richard Harvey's appealing *Concerto Antico* is the perfect folkloric suite — clean, smooth, and charming; the folklore is imaginary, but the suite is real enough in this engaging performance. Steve Gray's *Guitar Concerto* consists of "Dances," "Love Songs," and "Jokes." The acoustic guitar is smoothly set against a large, lively, and colorful orchestra; the amusing finale, in which it holds its own against the noisy, bullying, raucous ensemble, is the most striking and original part. Most of the rest is a bit kitschy, but it is all warmly played and richly recorded. *E.S.*

MOZART: Flute Quartets; Oboe Quartet (arr. Schocker).

Gary Schocker (flute); members of Chester String Quartet. CHESKY 128 (66 min). None of the four flute quartets, well made

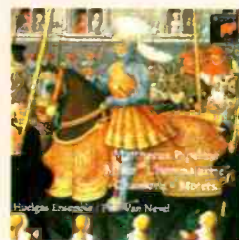
as they are, is first-rate Mozart in my book, though they do provide pleasant listening and fine vehicles for the soloist. Composer-virtuoso Gary Schocker and his partners from the Chester String Quartet come up with expert performances, cleanly recorded. As a bonus we get Schocker's adaptation of the delightful Oboe Quartet (K. 370). The flute's broader timbre, however, deprives the work of the innate piquancy of the original scoring. *D.H.*

MOZART: String Quartets Nos. 22 and 23.

Shanghai Quartet. DELOS 3192 (52 min). Stylish, beautifully balanced performances of Mozart's last two string quartets make this the Shanghai Quartet's most fetching release so far. For many, it will recall the warmhearted elegance of the Budapest Quartet and the Quartetto Italiano, with the very welcome advantage of lustrous sonics ideally suited to the material. *R.F.*

PIPELARE: Missa "L'Homme Armé"; Chansons; Motets.

Huelgas Ensemble. Paul Van Nevel cond. SONY 68258 (65 min). Renaissance Flemish polyphony, we are now learning, was one of the great schools



of Western music. Pipelare was a contemporary of the painter Hieronymus Bosch in the town of s'-Hertogenbosch, where he wrote these tinglingly beautiful love songs, hymns to the Virgin Mary, and his masterpiece, the elaborately scored "*L'Homme Armé*" Mass, all movingly performed by the Huelgas Ensemble in a resonant recording. *J.J.*

POWELL: Red White and Black Blues; Old Man; Orphans; Suite Changes; Outlaws; Loneliness; Transitions.

Tone Road Ramblers; the Ineluctable Modality; Cleveland Chamber Symphony. Edwin London cond. NEW WORLD 80499 (67 min). Morgan Powell is a trombonist and composer from the Midwest, and this CD is a little snapshot of the lively modern-music scene at the University of Illinois and the Cleveland Institute, where the performances originate. The music hovers between serialism and free jazz, mostly scored for traditional winds, brass, and percussion but with offbeat colors, improvisation, and vocal sounds. It's all treated with a dissonant energy that is sometimes engaging, but often unrelenting. *E.S.*

CLASSICAL MUSIC

by the Philadelphians themselves since Stokowski's time. His latest successor on that podium, Wolfgang Sawallisch, has taken a welcome corrective step in recording a baker's dozen of Stokowski's pieces, and just when there appears to be some encouraging rethinking of the whole business of shunning such transcriptions and arrangements — not only Stokowski's but also those by Felix Mottl and others that graced our concert programs some decades ago.

Sawallisch's enthusiastic commitment is apparent throughout the program, which, perhaps surprisingly, does not open with the celebrated Toccata and Fugue but places it last in the opening Bach group. He keeps the Franck *Panis Angelicus* moving in a way that informs it with a modicum of nobility, he insures that the excerpt from Beethoven's "Moonlight" Sonata fully justifies itself in orchestral terms, and he had the happy thought of involving the mezzo-soprano Marjana Lipovsek in one of the Tchaikovsky songs whose accompaniments Stokowski orchestrated.

Some of the more expected Stokowski favorites are offered in similar collections, but Sawallisch is the most thoughtful and most consistently tasteful of the conductors to take on this material — and he is, of course, the only one who has the Philadelphians, who are true to form here and very richly recorded. *R.F.*

BRYN TERFEL: Opera Arias.

Bryn Terfel (bass-baritone): Metropolitan Opera Orchestra, James Levine cond.

DEUTSCHE GRAMMOPHON 445 866 (71 min).

Performance: **G**reat showcase
Recording: **O**utstanding

Recorded in two segments during Bryn Terfel's Metropolitan Opera appearances in 1994 and 1995, this CD is quite a display of the accomplishments and future potential of an artist steadily growing in stature. The recording benefits enormously from James Levine's guiding hand and the magnificent sound of the Metropolitan Opera Orchestra.

Terfel is a *presence*, and the collection is more than a studio recital of fourteen arias. All the characters in this wide-ranging gallery come vividly to life in vital, engrossing interpretations. The excellence of his Mozart is soundly confirmed by the



arias here for Figaro (*The Marriage of Figaro*), Leporello (*Don Giovanni*), and Guglielmo (*Così Fan Tutte*), roles in which he has triumphed onstage, and it is easy to imagine his Papageno (*The Magic Flute*) from the mercurial portrait offered. He is about to add the role of Don Giovanni to

his repertoire, and the insinuating Serenade presented here is an encouraging sign.

A good Mozart singer should also find Rossini and Donizetti congenial, and, indeed, Terfel infuses Don Magnifico (*La Cenerentola*) with a ripe comedic sense. To my ears he is more suited to the title role in *Don Pasquale* than to Malatesta, whose simple aria is somewhat overstated. Terfel's dynamism sometimes causes him to overburden his singing with vehemence at the expense of pure tone formation. Both dia-

botic arias (*Faust*, *Les Contes d'Hoffmann*) tend to suffer in that regard, as does Macbeth's aria, though Falstaff's monologue comes off with the desired effect.

Wolfram (*Tannhäuser*) is reported to be Terfel's next Met role, and the tonal amplitude and lyrical flow of his song to the evening star augurs well for it. His dramatic instincts are all in place in the Dutchman's lengthy monologue, too, but his tone loses firmness and color when pressured in loud passages. *G.J.*

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TIME DELAY

30 YEARS AGO



Eric Salzman's profile of Yankee transcendentalist Carl Ruggles was featured in the September 1966 issue as the fifth installment in STEREO REVIEW's Great American Composers Series. Also, the article "How Much Does a Record Cost?" prophesied that traditional record shops would be supplanted by "discount and chain stores, mail-order houses, and record clubs."

New products included Geloso's four-channel portable microphone mixer (\$99.95) and Sylvania's RM300 AM/FM bookshelf radio (\$129.95), which the company rated (rather



Geloso mike mixer, 1966

remarkably) for a frequency response of 20 Hz to 20 kHz. Hirsch-Houck Laboratories tested the Harman Kardon SC-440 music system — an all-in-one AM/FM tuner, turntable, and amp with two separate speakers for \$449 — and the Marantz Model 7T preamp (\$295), which was "too good to criticize without resorting to sheer nit-picking." Meanwhile, in Best of the Month, George Jellinek praised Tito Gobbi's performance in Verdi's *Nabucco* on London, and Gene Lees touted Billy Byers's arrangements of Greek composer Manos Hadjidakis's *Gioconda's Smiles*.

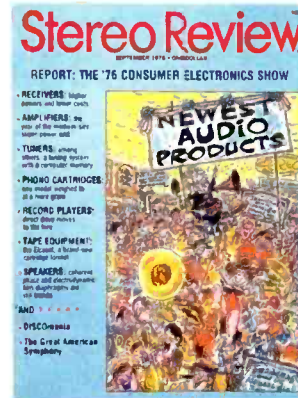
Stop, you're killing me: In a letter to the editor, Alec Austin of Centerline, Michigan, waxed ironic over Gene Lees's May review of two albums by Frank Sinatra. "Please," Austin wrote, "let Mr. Lees review all of Sinatra's work in the future: we, in a world so lacking in humor, need the laughs."

20 YEARS AGO

Associate technical editor Ralph Hodges's report from the Summer Consumer Electronics Show was the centerpiece of the September 1976 issue. Previewed were such products as Teac's Esoteric 860 cassette deck (leading an "inundation" of three-head models at the show), the Technics SP-10 MK II record player ("1977 will indisputably be the year of the direct-drive turntable"), and Sansui's QSD-2 Vario-matrix decoder, one of the last gasps of the QS quadrasonic format. Hirsch-Houck Labs

tested Sony's TC-880-2 open-reel tape deck ("For many, \$2,500 probably seems like a lot of money for a tape recorder. [but] the Sony looks to us like a lot of recorder for the money") and the ADC Accurac 4000 (\$499.95), the first programmable turntable.

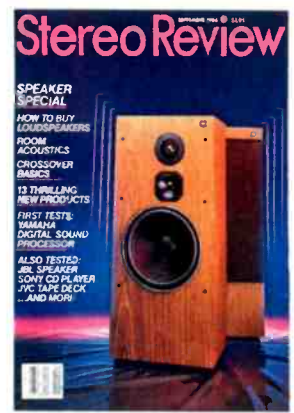
Reacting to what seemed a national craze, we pondered the question "What Is This Thing Called Disco?" Clifford Terry's feature concluded, "Whether disco as a *music* will go the way of the Twist, only time will tell. In the meantime, you can . . . Dance Your Ass Off." And Eric Salzman looked at the history of "The Great American Symphony," noting it would be "naive to pretend" that the



genre was alive and well. In fact, if it "comes back in a big way," he wrote, "something will have to have happened to the symphony orchestra and its audience."

Reviewing the album "I'm Easy" by actor Keith Carradine, Noel Coppage declared, "An actual musician *could* have made this recording, but he wouldn't have."

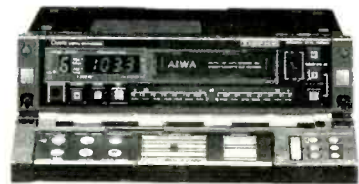
Keith Carradine, 1976



10 YEARS AGO

Celebrating the 25th anniversary of Julian Hirsch's association with STEREO REVIEW, the September 1986 issue included a profile in which he mused about his life in hi-fi, from the first amplifier he ever built (a 12-watt model in 1949) to his basic philosophy: "Don't go off the deep end." Hirsch also contributed his picks for "Hi-Fi Landmarks," starting with the Klipschorn folded-bass-horn speaker of 1946.

Debuts at the Summer CES included Aiwa's imposing CT-X500II high-end car-stereo system (\$599). Julian Hirsch conducted a special test of Yamaha's DSP-1 Digital Sound Field Processor (\$849),



Aiwa car stereo system, 1986

which he called "*much* more than a mere time-delay device." And Best of the Month endorsed Steve Earle's debut album, "Guitar Town," and a Benjamin Britten program by Simon Rattle on Angel.

The Lady Vanishes: Reviewing Madonna's laserdisc "Live — the Virgin Tour," Louis Meredith observed that the once and future Material Girl "turns the act of tossing a tambourine into an exercise in suspense worthy of Hitchcock."

— Steve Simels

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