

Stereo Review

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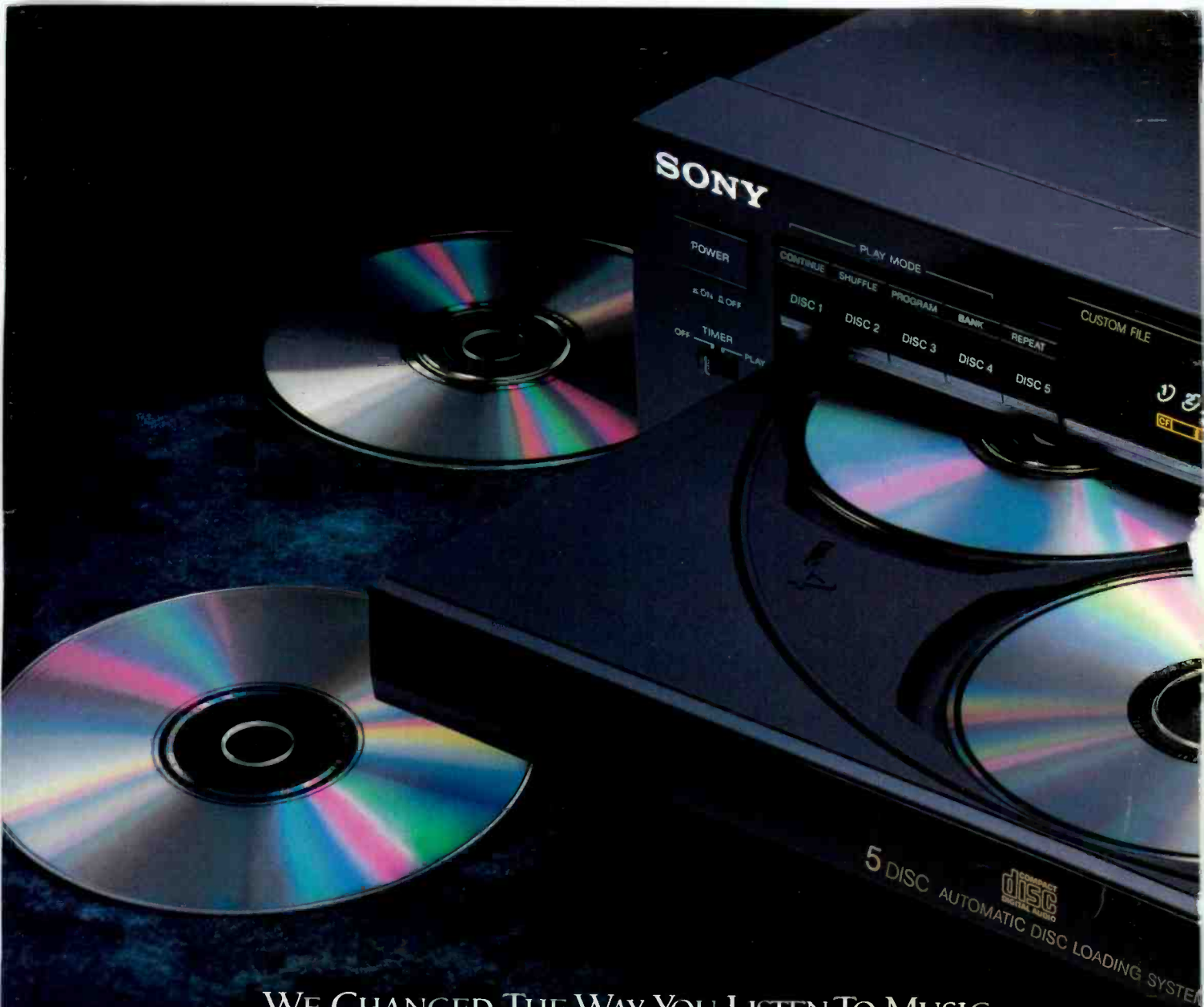
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Cover

A trio of new Digital Compact Cassette recorders: the Philips DCC900 (special test report, page 106), the Optimus DCT-2000, and the Technics RS-DC10. For more about DCC, see "Inside DCC," page 98.

Photograph by Jeffrey Krein

Stereo Review

INCORPORATING HIGH FIDELITY®

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BULLETIN

by William Livingstone
and Glenn Kenny

Sony's Mini Disc

In September in Tokyo, Sony introduced three models in its line-up of portable Mini Disc (MD) players, hoped to be the digital successor to the company's Walkman cassette tape players. Three models were scheduled to go on sale in Japan November 1, with a fourth player to be added before the end of the year.

Sony's plans for Mini Disc in the United States include the introduction of two portable units in December. One, which will play and record, is to sell for \$750; the other, which will play only prerecorded discs, will sell for \$550. A Mini Disc player for the car is scheduled to go on sale here early in 1993. The MDX-U1 is an in-dash DIN-size receiver and MD player with many features and playback options. The suggested retail price for 60-minute recordable Mini Discs is \$13.99. Prerecorded MD's, about half the size of a CD, are expected to sell for about the same as CD's. Sony's U.S. plans are contingent on the passage of the Audio Home Recording Act by Congress and may be revised if the bill is not enacted by December.

Getting the Gold

This year the composers John Harbison and Ellen Taaffe Zwilich were inducted into the American Academy and Institute of Arts and Letters. . . . Musical celebrities who received the National Medal of Arts in Washington were the opera singer Marilyn Horne, the country music star Minnie Pearl, the banjo player Earl Scruggs, the choral director and conductor Robert Shaw, and the jazz pianist Billy Taylor. . . . Such well-established stars as Van Halen, Eric Clapton, Annie Lennox, and Metallica were among the big winners at the 1992 MTV Video Music Awards in Los Angeles. Red Hot Chili Peppers stood out among the newcomers, and Nirvana was named the best

new artists. . . . The musicians who will receive the Kennedy Center Honors next month are the jazz artist Lionel Hampton and the cellist/conductor Mstislav Rostropovich. The gala performance at the fifteenth annual celebration of the performing arts at the Kennedy Center in Washington on December 6 will be taped by CBS for future broadcast as a 2-hour TV special.

Interactive Video

Radio Shack has introduced the Memorex MD-2500 Video Information System (VIS), which connects to any TV set to give access (via VIS discs) to reference books, teaching materials, games, and entertainment. Designed and manufactured in the United States, it comes with a remote control and the twenty-six-volume Compton's *MultiMedia Encyclopedia* and *Webster's Intermediate Dictionary*. The VIS can be connected to a home audio system, through which it will provide digital stereo sound from VIS discs or ordinary audio CD's. VIS discs from a variety of publishing companies are expected to cost from \$29.95 to \$79.95. Expected to reach Radio Shack's nearly seven thousand stores in November, the MD-2500 Video Information System will cost \$699.

O, Say Can You . . .

Anthem! America, a nonpolitical organization, is conducting a ten-month, grass-roots contest to select a new and original U.S. national anthem. The winning songwriter will receive a prize of \$1 million, and Anthem! America will call upon Congress to adopt the winning song to replace *The Star-Spangled Banner*. Finalists are being selected at monthly prefinal judgments. They will be recorded and offered to the public so that citizens can vote for their favorites of the new songs. The winner is to be

announced on March 14, 1993. The deadline for submitting songs is November 20. To get the rules and an entry blank, songwriters should send a stamped, self-addressed envelope to Anthem! America, 2216 Countrywood Rd., Raleigh, NC 27615. Anthem! America's 24-hour information line can be reached at (919) 676-7780 or toll-free at (800) 949-2684.

Holiday Countdown

For early Christmas shoppers we recommend "Joe Scruggs in Concert," a 52-minute video (VHS only) by the popular children's recording artist, singer-songwriter Joe Scruggs from Austin, Texas. Available for \$14.95 from Shadow Play Records, (800) 274-8804. . . . For older gift recipients Legacy (the label that brought you the phenomenal two-CD set by bluesman Robert Johnson in a Christmas past) now offers "Roots n' Blues: The Retrospective, 1925-1950," a boxed set of four Columbia Legacy CD's, 5 hours of music featuring such performers as Ernest V. Stoneman's Trio, Peetie Wheatstraw, Gene Autry, Joe Williams, and Rosetta Howard. No list price. . . . For very good children and adults Warner New Media has released "Murmurs of Earth: The Voyager Interstellar Record." It's a two-CD set and book recreating the golden record sent into space in 1977 on the Voyager spacecraft to give inhabitants of other galaxies a glimpse of us and our world. Owners of CD-ROM equipment will see the photographs on their computer screens, but anyone can listen to the sound on a CD player and see the photos in the accompanying book. Price: \$59.99.

AIDS Awareness

The phenomenal basketball star Magic Johnson officially retired from his sport last



year when he tested positive for HIV, the virus most scientists agree is the cause of AIDS. He has established the Magic Johnson Foundation for AIDS education, care, and research and has published a book, *What You Can Do to Avoid AIDS* (Times Books). With the talk-show host Arsenio Hall he has also made a 42-minute video, "Time Out: The Truth About HIV, AIDS and You" (Paramount), intended to inform teenagers and young adults. Celebrities making guest appearances on "Time Out" include Paula Abdul, Kirstie Alley, Tom Cruise, Jasmine Guy, Luke Perry, Malcolm-Jamal Warner, and others. Hami Dair composed and played all the original music on the tape, including a hip/hop single performed by Hall and Warner and a rap by Jaleel White. All profits from Paramount's sales of the videocassette will be donated to the Magic Johnson Foundation. □

TO CELEBRATE THE

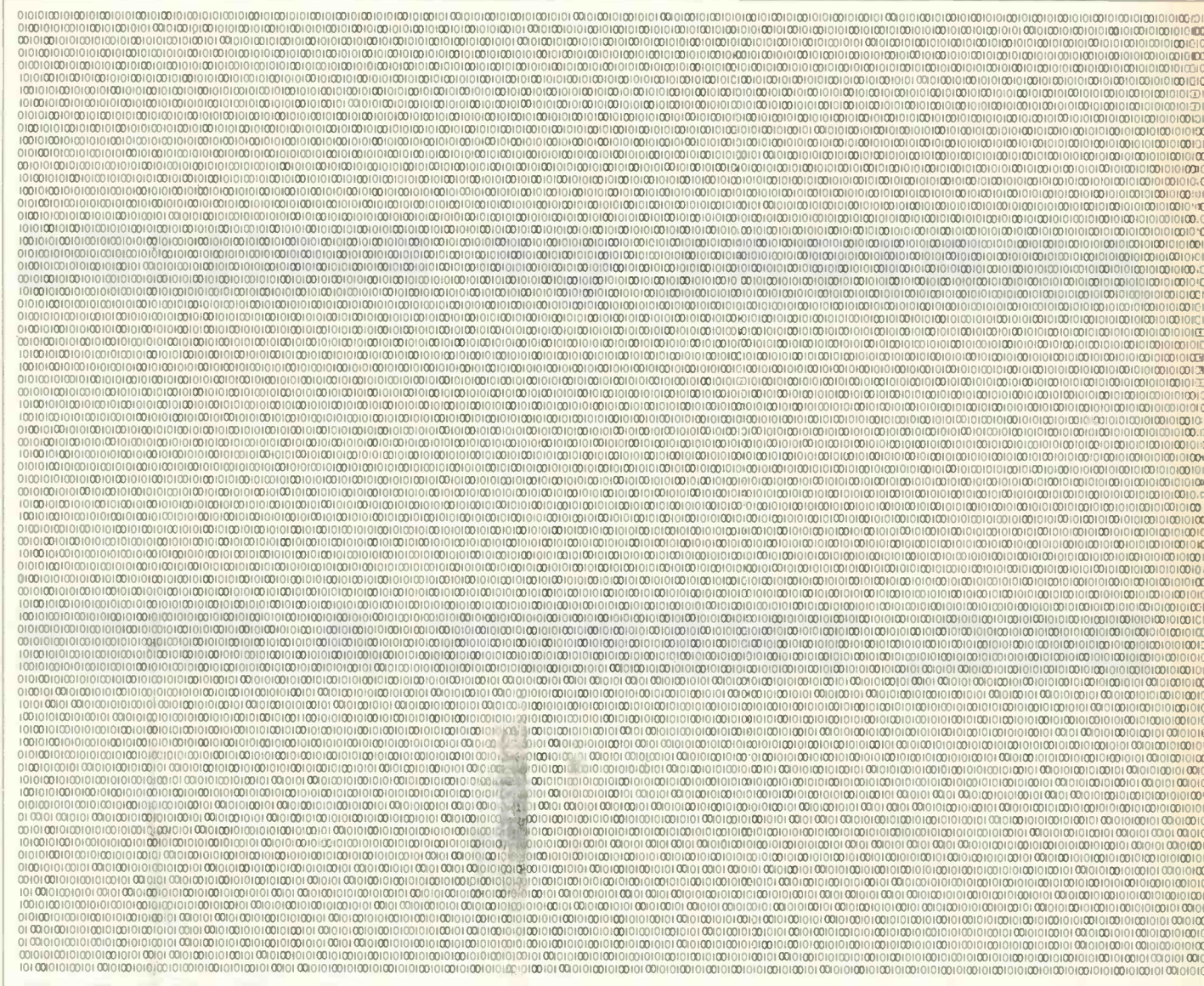
ARRIVAL OF PHILIPS

DCC, THERE'S A FREE

DIGITAL RECORDING

ON THE NEXT PAGE

MYSTERIOUS



Introducing DCC, from Philips.
What you see here represents only the first 4.7 seconds of the piece. But, it stands for years of enjoyment to come. It's all digital. Zero noise,

zero hiss. It's called DCC (for Digital Compact Cassette). And by no coincidence, it comes from Philips. The same company that invented the compact disc. DCC not only plays music with crystal clear CD quality, it lets you record with

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LETTERS

"High-End" Holostore

Ken Pohlmann's September "Signals" column failed to mention an obvious "high-end" application for the future holostore system of storing audio data. He correctly dismisses 760 hours of playback from one "music crystal" as excessive, but he only hints at added channels. Why not record 150 channels for 3 hours? Each instrument in an orchestra could be individually miked, plus channels for hall ambience and (optional) audience noises. The serious listener could vary the relative contribution of each instrument, rearrange the orchestra by moving signals between speakers, or even get rid of a poor performance on a single instrument. It might become a bit expensive, with 150 channels to deal with, but what the heck—this is the high end!

KEN MACDONALD
London, Ontario

Surround Speakers

My September article, "Choosing Speakers for Surround Sound," included the standard recommendation that home surround speakers need not possess extended bass response, because the surround signal is rolled off below 100 Hz by the Dolby Surround encoding matrix when movie soundtracks are recorded.

But according to measurements reported in *Film Journal* by engineers at Kintek (a leading manufacturer of theater sound equipment), some soundtracks do contain important surround-channel bass. Early Dolby Surround films such as *Star Wars* (1977) conformed to the Dolby Labs recipe, with a 12-dB-per-octave rolloff below 100 Hz in the surround channel. But newer films exhibit surround bass down to 30 or 40 Hz. Evidently soundtrack producers have been applying equalization and phase shift to overcome the encoding filter's rolloff, providing strong low-frequency ambience for a more involving "you are there" impression.

Examples include the ocean thunderstorm in *Raiders of the Lost Ark*, dance music in *Flashdance*, the rumble of jet engines in *Top Gun*, the interior rumble aboard submarines in *The Hunt for Red October*, and the warehouse fire in *Backdraft*. I recorded *Backdraft* from cable TV on an S-VHS VCR and measured a nearly flat spectral energy distribution in the surround channel from 500 Hz all the way down to 30 Hz.

So while small surround speakers can reproduce most of the realism and spaciousness of movie soundtracks, you may need full-range surround speakers (or a rear-channel subwoofer) to reproduce the entire theatrical experience. Theater owners, too, are finding that they need to install more capable surround speakers in order to handle the bass energy in the new soundtracks.

The demand for full-range surround speakers will be increased by the advent of Dolby

SR-D digital film sound, in which separate left and right surround channels are specified to handle the entire range from 20 Hz to 20 kHz. Strong lows are allocated to the SR-D format's separate "sub-bass" channel, but "ambient" bass can be recorded in all channels. This was evident in *Batman Returns*, which was shown with SR-D sound at the famous Chinese Theatre in Hollywood. The roar of the Batmobile's jet engine, deep and intense, was reproduced by subwoofers behind the screen. Other low-frequency sounds were located in the surround channels at a lower volume level.

PETER W. MITCHELL
Oceanside, CA

Youthful Perspective

As a manufacturer's representative in the consumer electronics industry, I have had the opportunity to manifest my hobby throughout my home. My five-year-old daughter, Cameron, made the enclosed drawing while waiting for me in my office one day. The sights and sounds of our industry have become a component in the imagination of our children.

STEVEN B. ZABOJI
Washington, DC



Indies

How can I get the CD of Lisa Germano's first solo album, "On the Way Down from the Moon Palace" (mentioned in August "Record Makers")? It's not every day that an Indiana native gets an opportunity to shine musically. Thanks to STEREO REVIEW for highlighting such talent.

TODD NISHIKAWA
San Jose, CA

If your reviewers are going to recommend independent-label releases, especially EP's like the Blood Oranges' "Lone Green Valley" in July's popular-music "Quick Fixes," then information should be provided on how to order them.

JIM LUEHMAN
Mt. Airy, MD

Lisa Germano's first album, catalog number CAROL-191-2 on the Major Bill label, is distributed by Caroline Records, which has a toll-free number, (800) 767-4639. The Blood Oranges EP on the ESD label, number 80582, is distributed by East Side Digital, which also has a toll-free number, (800) 468-4177. Both labels are listed in

Panasonic introduces car speakers so advanced, special materials had to be used to build them.

After it blows the doors off your car, you'll wish it could do the same for your room. It's the new E-Series from Panasonic. They're not just new car speakers, they're a totally new speaker technology.

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The new Panasonic E-Series. Available in 5 1/4" (EAB-E55) and 6 1/2" (EAB-E66) component systems, as well as a 6" x 9" 3-way rear deck system (EAB-E99). They're the speakers you would do anything to have in your home.

Unfortunately, they're only for your car. ■

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LETTERS

the Schwann Spectrum catalog, available for reference or purchase in record stores.

Center Channeling

Thanks to Michael Riggs ("Shopping Surround," August 1992) for mentioning the importance of the power of the center channel in a Dolby Pro Logic receiver. Unfortunately,

the center channel in most audio/video receivers has only a third to a half as much power as the main left and right channels. One way to compensate for this is to eliminate the center speaker entirely and use the "phantom" center-channel mode, which splits the dialogue signal equally between the front left and right. Supposedly the disadvantage is that dialogue isn't well localized unless you sit directly

between the two front speakers, but I haven't noticed this problem. JEFFREY S. MENKES
Farmington, CT

Unless the center channel is grossly underpowered, you're usually better off using it rather than a phantom center. A discrete center channel will not only localize the dialogue better but also make it more intelligible. Because of the spacing of the ears on the head, there tends to be some cancellation of in-phase signals around 2,000 Hz when they're reproduced through a stereo pair of loudspeakers. Dolby Pro Logic extracts signals having the same phase and amplitude from the left and right channels and routes them to the center, which eliminates this notch in the vocal range.

Material Issue

I completely agree with Steve Simels's statement that Material Issue is "very, very impressive" (August "Quick Fixes"). I wish you had featured them in "Best Recordings of the Month." Their album "Destination Universe" is ten times better than Lindsey Buckingham's or Midnight Oil's recent recordings.

DOUGLAS SMITH
San Benito, TX

Gold CD's

Can somebody explain, once and for all, the alleged benefits of making compact discs with 24-karat gold instead of the usual aluminum? This makes about as much sense as putting gold tips on shoelaces to improve a pair of sneakers. While I'll be the first to admit that Mobile Fidelity's Original Master vinyl pressings are a real treat, are these gold-plated CD's just something to thrill people who watch the signals on an oscilloscope? TOM O'HANLON
Yonkers, NY

Gold will not oxidize if exposed to the air, whereas aluminum will, so damage to the protective sealant on the label side of a CD is less likely to cause serious problems on a disc with a gold reflective layer than on one with the standard aluminum.

Corrections

The October test report on the Harman Kardon Model 30 loudspeaker misstated the price as \$449 a pair; the price is \$449 each. Also, the Model 30 is third from the top in a line of six speakers, not second in a line of four.

An incorrect price was given in September's "CES Showstoppers" for the JBL Synthesis One system. The price without the video projector is \$40,000; the price with projector is \$53,000.

Because of an editorial error, a September review by David Hall misidentified Ives's Variations on America as being based on America the Beautiful. The song is, of course, titled simply America (also known as My Country 'Tis of Thee). Elsewhere in the same section, the conductor James DePreist's name was misspelled. Our apologies. □

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NEW PRODUCTS

▼ ADVENT

The indoor/outdoor Mini Advent (front, \$170 a pair) was the company's first black-finished speaker. Now three other models are available in black oak: the Baby Advent II (left, \$200 a pair), the Advent Graduate (right, \$250), and the Prodigy Tower (rear, \$300). Advent, Dept. SR, 25 Tri-State Intl. Office Ctr., Lincolnshire, IL 60069.

• Circle 120 on reader service card



▼ ROTEL

The Rotel RA-930AX is a 30-watt-per-channel integrated stereo amplifier featuring inputs for a CD player, a moving-magnet phono cartridge, a tuner, one tape deck, and an auxiliary source. The specially selected internal

components are said to provide improved imaging, enhanced sound-stage depth, and low noise. Price: \$260. Rotel of America, Dept. SR, P.O. Box 653, Buffalo, NY 14240.

• Circle 123 on reader service card



▲ MARANTZ

The CC-52 is Marantz's first CD changer. The five-disc carousel loads from the front and lets the user replace two discs while another is playing. The changer features programming for up to thirty-two tracks, and it uses Bitstream 1-bit D/A conversion

and an 18-bit filter. It has an optical digital output and comes with a remote control. Price: \$349 in black, \$399 in champagne gold. Marantz, Dept. SR, 1150 Feehanville Dr., Mount Prospect, IL 60056.

• Circle 121 on reader service card

► JBL

The GT6203 midrange/bass car speaker, part of JBL's GT (Grand Touring) series, features a 6½-inch polypropylene cone. Sensitivity is rated as 91 dB. Price: \$249. JBL Consumer Products, Inc., Dept. SR, 240 Crossways Pk. W., Woodbury, NY 11797.

• Circle 122 on reader service card



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NEW PRODUCTS



▼ **SENNET CONCEPTS**
The SH44 from Sennet Concepts is a magnetically shielded center-channel speaker for home theater systems. It has two 4-inch woofers and a 1/2-inch

dome tweeter. Dimensions are 11 x 5 x 7 1/2 inches. Price: \$90. Sennet Concepts, Dept. SR, P.O. Box 1630, Millford, PA 18337-2630.

• Circle 125 on reader service card

▲ **AUDIOSOURCE**

The VS Two shielded video loudspeaker from AudioSource, 13 1/4 inches long, features a built-in 30-watt amplifier. Price: \$160 each. AudioSource, Dept. SR, 1327 N. Carolan Ave., Burlingame, CA 94010.

• Circle 124 on reader service card



► **BOSTON ACOUSTICS**

The Boston Acoustics Lynnfield 300L, a compact two-way speaker, and the 500L (not shown), a floor-standing three-way system, feature Amplitude Modification Devices to filter out the natural resonances of their aluminum cones and domes. Prices (per pair in black ash): 300L, \$1,800; stands, \$500; 500L, \$4,500. Boston Acoustics, 70 Broadway, Lynnfield, MA 01940.



► **B&G MOBILE CONCEPTS**

The CT-38 carrier from B&G Mobile Concepts holds thirty-eight tape cassettes. Made of aluminum and high-impact plastic, with a rotating acrylic window, it has a built-in handle. Price: \$130. Wall-mounting brackets and a shoulder strap are optional. Carriers for CD's and 8mm videotapes are also available. B&G Mobile Concepts, Dept. SR, P.O. Box 202902, Austin, TX 78720-2902.

• Circle 126 on reader service card



◀ **EARTHQUAKE**

The PA-4050C car stereo power amplifier from Earthquake can be configured for two 180-watt channels, three 90-watt channels, or four 60-watt channels (all into 4 ohms). It has a switchable infrasonic filter. Price: \$509. Earthquake, Dept. SR, 350 Lang Rd., Burlingame, CA 94010.

• Circle 127 on reader service card



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The Modern Jazz Quartet—Pyramid (Atlantic) 441-717

GRP All-Star Big Band—(GRP) 440-503

Bobby Watson—Present Tense (Columbia) 439-695

George Howard—Do I Ever Cross Your Mind (GRP) 438-564

John McLaughlin—Que Alegria (Verve) 438-473

Terence Blanchard—Simply Stated (Columbia) 439-661

John Scofield—Grace Under Pressure (Blue Note) 438-085

Grant Geissman—Flying Colors (Blue Moon) 436-725

Dizzy Gillespie—Live At Royal Festival Hall (Enja) 436-691

Ricardo Silveira—Small World (Verve) 436-030

Harper Brothers—You Can Hide Inside The Music (Verve) 436-022

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The Best Of Chet Baker (Capitol/Pacific Jazz) 433-680

Charlie Parker—Now's The Time (Polydor) 429-605

Erroll Garner—Body And Soul (CL Jazz Masterpieces) 427-955

Ella Fitzgerald—The Cole Porter Songbook, Vol. 1 (Polydor) 426-692

Nat King Cole—Jumpin' At Capitol (Rhino) 421-982

Special EFX—Global Village (GRP) 436-055

Holly Cole Trio—Blame It On My Youth (Blue Note) 435-982

Al Dimeola—Kiss My Axe (Tomato) 435-453

Joe Henderson—Lush Life (Verve) 434-696

Paco Delucia With Chick Corea—Zyryab (Verve) 434-605

Stan Getz/Kenny Barron—People Time (Verve) 434-597/394-593

Abbey Lincoln—You Gotta Pay The Band (Verve) 432-708

Bobby Lyle—Planomagic (Atlantic) 432-286

Gerald Albright—Live At Birdland West (Atlantic) 430-777

Patti Austin—Carry On (GRP) 430-686

David Benoit—Shadows (GRP) 430-652

Joe Sample—Collection (GRP) 430-280

Dave Grusin Collection (GRP) 378-398

Grover Washington, Jr.—Next Exit (Columbia) 435-396



Shirley Horn—Here's To Life (Verve) 439-190

The Best Of Art Blakey & The Jazz Messengers—The Blue Note Years (Blue Note) 416-016

Louis Armstrong—The Hot Fives, Vol. I (CL Jazz Masterpieces) 377-622

The Best Of Miles Davis (Blue Note) 435-206

John Coltrane—Giant Step (Atlantic) 371-591

The Duke Ellington Orch.—Digital Duke (GRP) 357-350

Billie Holiday—From The Original Decca Masters (MCA) 354-985

Dave Brubeck Quartet—Time Out (Columbia Jazz Masterpieces) 353-060



Count Basie & His Orch.—The Best Of Count Basie (Roulette Jazz) 435-990

Yellowjackets—Live Wires (GRP) 435-388

Nancy Wilson—With My Lover Beside Me (Columbia) 429-225

Basia—Brave New Hope (Epic) 428-722

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Blue Interlude, the most recent release of the Wynton Marsalis Septet, blends Marsalis' unique vision with a thoroughly modern approach to jazz, and confirms his place as a virtuoso musician, composer and arranger.



Wynton Marsalis Septet—Blue Interlude (Columbia) 439-463

Michael Franks—Blue Pacific (Reprise) 408-328

Joey DeFrancesco—Re-Bopplin' (Columbia) 433-649

Branford Marsalis—The Beautiful Ones Are Not Yet Born (Columbia) 428-078

Rippingtons—Curves Ahead (GRP) 426-874

Chick Corea Electric Band—Beneath The Mask (GRP) 426-866

Various Artists—Night And Day (Verve) 426-684

Lee Ritener Collection (GRP) 425-876

Lionel Hampton—Mostly Ballads (Musicmasters) 424-309

Harry Connick, Jr.—Blue Light, Red Light (Columbia) 429-191

Fourplay (James, Rli-enour, East & Mason) (Warner Bros.) 428-334

Alex Bugnon—107 In The Shade (Epic) 423-046

The Quintet—Jazz At Massey Hall (Debut) 421-719

Spyro Gyra—Collection (GRP) 420-950

Jean Luc Ponty—Tchokola (Epic) 420-224

The Crusaders—Healing The Wounds (GRP) 419-952

Gerry Mulligan—Best Of Gerry Mulligan Quartet with Chet Baker (Capitol/Pacific Jazz) 419-689

Best Of Herbie Hancock (Blue Note) 419-408

Dianne Reeves—I Remember (Blue Note) 418-756

Earl Klugh—Midnight In San Juan (Warner Bros.) 416-776

Stanley Jordan—Stolen Moments (Blue Note) 433-417

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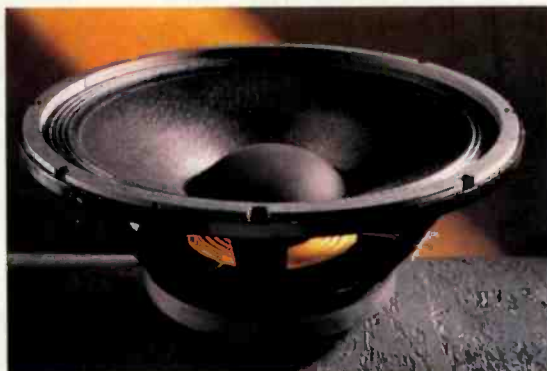
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NEW PRODUCTS

▶ ADI

The PD-15947 from ADI is a 15-inch high-output car audio woofer. It features a cast frame, a 95-ounce magnet, and a 3-inch voice coil. Sensitivity is rated as 95.6 dB, and specified power-handling capability is 200 watts. Price: \$159. Audio Design Innovations, Inc., Dept. SR, P.O. Box 402, Osseo, MN 55369.

• Circle 128 on reader service card



▼ KOSS

The Koss SA/40 powered speakers for portable CD and tape players operate on four C-cell batteries or a DC power supply. They have 3½-inch drivers and a rated bandwidth of 50 to 20,000 Hz. Volume and tone controls are built into one of the speakers in the pair. Price: \$60 a pair. Koss Corporation, Dept. SR, 4129 N. Port Washington Ave., Milwaukee, WI 53212.

• Circle 131 on reader service card

◀ ALTEC LANSING

The AHT-2100, Altec Lansing's first THX-licensed surround speaker, has two front-firing woofers and two angled arrays each with two midrange drivers and a tweeter. It can be mounted either on or in a wall. Price: \$900 a pair. Altec Lansing, Dept. SR, Rts. 6 & 209, Milford, PA 18337.

• Circle 129 on reader service card



▼ BILLY BAGS

The I-Beam home entertainment center from Billy Bags has 3-inch steel I-beam legs, and its shelves are made of ¾-inch round steel bars. It can accommodate more

than six components including a 27-inch television set. Price: \$619. Billy Bags, Dept. SR, 4147 Transport St., Ventura, CA 93003.

• Circle 130 on reader service card



▶ SCOTCH

The Scotch XSII-S, 3M's latest high-bias (Type II) cassette, features a new tape formulation said to yield higher output with less noise. Price: \$2.19. 3M, Dept. SR, P.O. Box 33600, St. Paul, MN, 55133-3600.

• Circle 132 on reader service card



Atlantic TECHNOLOGY



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Room Only

SYSTEM 150

Home Theater Speakers and Systems

Atlantic Technology



Introducing System 150

System 150 components are designed and manufactured by Atlantic Technology. Well known for its award winning Pattern Home Theater products, Atlantic Technology is a company of designers, engineers and marketing professionals with field experience dating back to the inception of audio as a home entertainment category.

On the cutting-edge of the home theater revolution, Atlantic Technology has dedicated its activities to providing the highest performing, most cost-effective home theater components on the market. Atlantic Technology has already established a strong presence in the home entertainment arena, and the company will continue to expand and set the pace for technological advancements in home theater performance.

System 150 from Atlantic Technology is a new series of four innovative loudspeaker components. While each speaker is designed to operate on its own, System 150 models can be configured for any need from a unique 3-piece "Power Directed" home speaker setup to a total home theater audio system.

The objective in creating System 150 was total flexibility. Rare indeed are the speakers that can fill a large room with the simple addition of a Discman, or rattle the windows while accurately delivering a fully digital Dolby Pro-Logic movie performance. Atlantic Technology's speakers incorporate advanced audio engineering in a surprisingly small industrial design package, leaving home theater enthusiasts with the room to live. System 150 component speakers seamlessly blend into *any* existing audio configuration, yet they also make perfect sense for anyone assembling a new audio or A/V system.

The loudspeaker components that comprise System 150 include the Model 152 PBM Powered Bass Module, the Model 151 LR Main Satellite Speakers, the Model 153 C Center Channel Speaker, and the Model 154 SR Surround Speakers.

While each type of speaker is packaged and available separately, Atlantic Technology also markets four complete systems using these components: System 150 A is a basic, powered 3-piece system; System 150 CSR comprises a center channel speaker and a pair of surrounds; the System 150 S includes the subwoofer module, a center channel speaker and two surrounds; and the complete home theater System 150 HT which is the previous system plus a pair of front satellite speakers.



System 150 Components

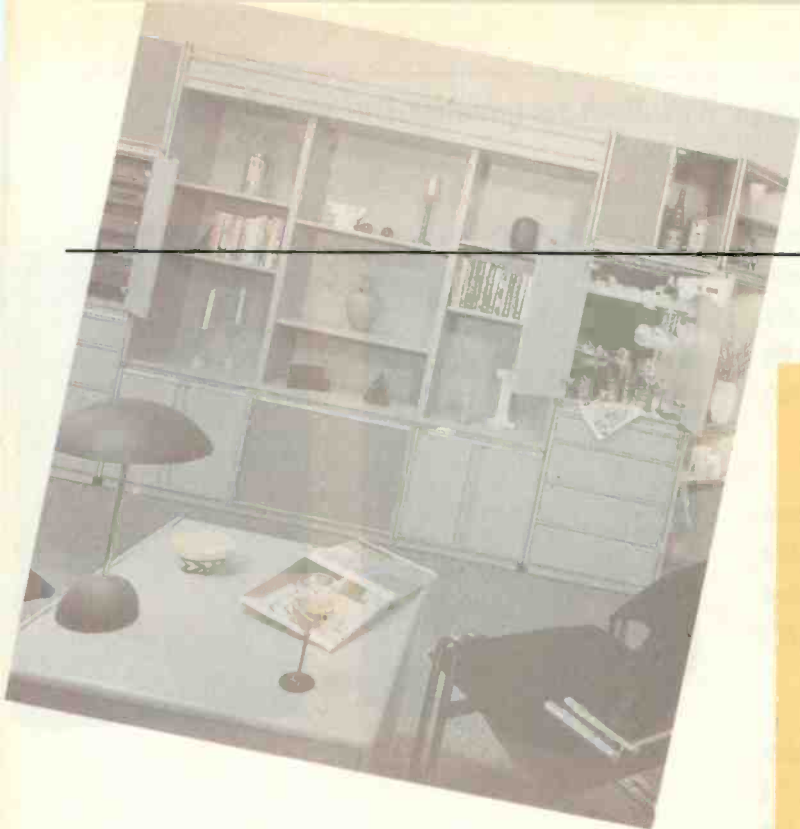
152 PBM "Power Directed" Bass Module — *The World's First "Power Directed" Subwoofer*

The Atlantic Technology System 150's pivotal component—and the key to its flexibility—is the Model 152 PBM Powered Bass Module. The 152 PBM is a subwoofer with built-in amplification. It differs from all other powered subwoofers on the market by being totally configurable. Users decide exactly where its three built-in amplifiers direct their power—hence the term "Power Directed." The 152 PBM's myriad uses range from being the foundation of a totally powered 3-piece speaker system to providing the missing channels of amplification for a budget Pro-Logic receiver.

With the Model 152 PBM's onboard amplification operating in bridged mode, for example, all 70 watts could be used for the subwoofer alone, bringing tremendous power to a recorded performance. Or in a different, home theater setup, the amplifier can channel 30-watts to the subwoofer and 30 watts x 2 to a satellite array. In yet another system, power can be directed to the often-lacking, critical center channel for superior dialogue reproduction. With virtually any audio or home theater system, the Model 152 PBM can be used as a powerful enhancement component for truly astonishing home entertainment experiences.

The beautifully sculpted Model 152 PBM houses a sophisticated 70-watt/30-30-30-watt amplifier driving an 8" polypropylene long-throw woofer. The amplifier itself contains an extremely effective bass equalization system. By constantly monitoring the level and frequency content of the program's lower octaves, the system adjusts itself to provide superb bass performance at any given output level. In addition, the Model 152 PBM has two switchable crossover points—80 Hz and 120 Hz (24 dB/octave low-pass, 12 dB/octave high-pass)—so the system's bass frequency response can be optimized no matter where the subwoofer is located. When used at the 80 Hz setting, virtually no midrange vocal elements are allowed through the 152 PBM, ensuring clarity and proper localization.





A Word About Dolby Pro-Logic Amplification

Many home theater enthusiasts are unclear about the importance of proper amplification in a Dolby Pro-Logic system. Many Pro-Logic receivers and integrated amps—especially those in the low and mid price ranges—clearly lack the power to deliver a convincing low-end performance. And the more power low-frequency reproduction demands, the less there is for the rest of the frequency spectrum. Remember that an overdriven amplifier can thoroughly destroy the home theater experience. By using the Model 152 PBM's 70 watts for the low frequencies, and a Pro-Logic receiver's amplifiers for the middle and upper frequencies, a soundtrack's power and emotion is greatly improved. And its active crossover doesn't add any additional load to the receiver's output.

Dolby Pro-Logic systems require a center channel for accurate dialogue reproduction. They also demand solid amplification. Many Pro-Logic receivers and integrated amps either lack a center channel amp entirely, or pass too little power to the center channel for effective performance. In truth, for accurate Pro-Logic reproduction the center channel should be powered comparably to the main left and right channels. With the Model 152 PBM and Model 153 C providing a powered center channel, the strain is taken away from the receiver or integrated amp while providing all the power and flexibility for a perfect Pro-Logic performance.

process and to recognize the low-frequency content of program material. Therefore, as all processing is done within the first 50ms of a transient, it is virtually undetectable by the ear.



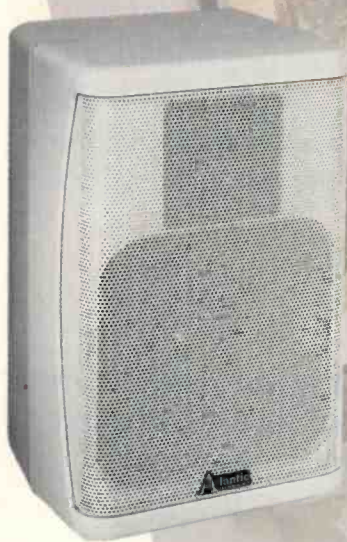
It is nearly impossible to drive the 152 PBM into clipping or an overload situation. Through a unique circuit, the 152 PBM instantaneously examines the level and frequency content of the first 50 milliseconds (ms) of all strong low-frequency signal fluctuations. If necessary, the circuit then limits the signal to prevent it from overloading the amplifier, restoring the original equalization as the signal returns to normal levels. Accepted psychoacoustic theory tells us that it takes at least 500ms (1/2-second) for the human ear and brain to

151 LR Main Satellite Speaker System —*At Home With Both Symphonies And Soundtracks*

The Model 151 LR Main Satellite Speakers are the perfect choice for anything from Bach to rock to soundtracks. Each sculpted speaker contains a 4" polypropylene long-throw woofer and a 1/2" soft-dome tweeter module. The satellites are both acoustically and cosmetically matched to other System 150 speaker components. Acoustically, the matched components provide strikingly clean sonic transitions from channel to channel.

The Model 151 LR exhibits excellent power handling and dispersion characteristics, and its low-resonance cabinet helps keep the system free of colorations. Overall, the satellites are fine-tuned not to the usual standards of small speakers, but to the midrange and treble performance of much more expensive, full-size systems.

So that System 150 components can be applied as part of any level A/V system, Model 151 LR speakers are magnetically shielded. If a setup requires the main speakers to be located closely to any size television or monitor, they can be placed at any distance from the screen—including directly on top—without risk of interference or damage.



Optional white finish



153 C Center Channel Speaker — *Over 500 Movies Helped Design This Speaker*

The uniquely designed Model 153 C Center Channel Speaker houses two 3" polypropylene woofers and a 1/2" soft-dome tweeter arranged in a symmetrical, horizontal array. Unlike the typical "big black brick" offered by many other speaker companies, the smoothly contoured 153 C was designed to be as small as possible while maintaining precise localization across the entire midrange spectrum—including the lowest octaves of the human voice.

The matte black cabinet's molded, low-profile design is physically unobtrusive to allow placement in the most acoustically correct center location. As it will be placed either above or below the television or monitor, the magnetically shielded Model 153 C comes mounted on a tooled platform that allows adjustment of the speaker's vertical angle. This design allows it to always be properly aimed whether it's above or below center-screen.

Acoustically, the 153 C has been voiced for accurate reproduction of center channel dialogue information. Over 1,000 hours of listening and bench tests using a wide variety of television and movie soundtracks were performed on the 153 C. These tests allowed Atlantic Technology to perfectly tune the 153 C for extended home use without the harshness often associated with this type of loudspeaker.



154 SR Surround Speaker — *Offset Drivers For On-Target Surround Performance*

Considerable engineering went into the Model 154 SR Surround Speaker. It was developed as a down-sized replica of an actual theater surround array. Good surround arrays create an acoustical environment for the action on the screen—a powerful thunderstorm, a furious car chase, a heated gun battle. A *great* surround array does so without being audibly located.

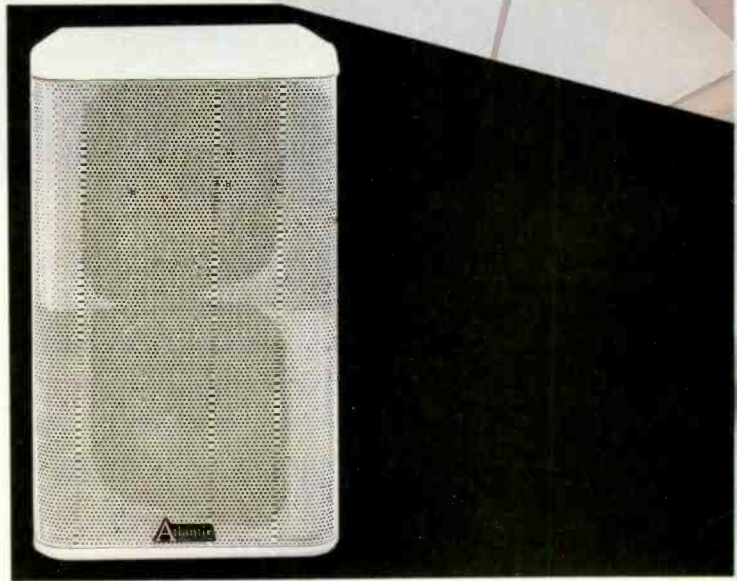
In a movie theater, the acoustic environment is created by many speakers located behind and above the listener. To create this effect with a single pair of small home loudspeakers, Atlantic Technology took three significant steps. First, each speaker houses a pair of 3 1/2" long-throw polypropylene "mid-woofer" drivers mounted at a 105-degree offset angle for ultrawide dispersion. [A specially designed cabinet ensures a diffraction-free dispersion pat-





tern, despite the speaker's unusual driver configuration.] Second, the crossover is designed to slightly alter the frequency balance of the two drivers, resulting in a broad, randomized soundstage. And finally, absolute phase between the two drivers has been reversed, adding crucial depth to the overall effect. Together, all three measures make the system extremely difficult to localize. The result is a surround speaker that provides tremendous ambiance without localization.

The Model 154 SR Surround Speaker is cosmetically crafted to match other System 150 speaker components, and will comfortably disappear in any location. Specially designed speaker stands and wall brackets are also available from Atlantic Technology.



Optional white finish



System 150 Matched Configurations

System 150 speaker components offer exciting new ways to improve the home theater experience. Their flexibility and ease of use are simply unmatched by any other system. With these components, anyone can quickly and painlessly enter the world of home theater.

System 150 A

System 150 A consists of a pair of 151 LRs and a 152 PBM. It is Atlantic Technology's sophisticated introductory 3-piece system, and the basic "building block" for all other System 150 home entertainment configurations. With the 152 PBM's switchable amplifiers and crossover, System 150 A provides many setup possibilities.



In its active configuration, System 150 A is a fully powered system that can be fed any volume-controlled line-level source signal—from a portable cassette or CD player to a professional DAT recorder to a computer or a keyboard. Its three independent amplifiers provide 30 watts to the subwoofer and 30 watts x 2 to the Model 151 LR Main Satellite Speakers. When used in this fashion System 150 A provides onboard bass and treble controls.

In its passive configuration, System 150 A becomes a powered 3-piece system for use with conventional receivers and integrated amplifiers. The satellites are powered by the receiver through hard-wire connectors on the subwoofer's back panel, while the internal amplifier, crossover and dynamic equalizer deliver powerful low-bass performance through the subwoofer.

In terms of equipment cost, the most expensive areas of the musical spectrum to reproduce are the low frequencies. With its dedicated 70-watt amplifier and sophisticated control circuitry, System 150 A can reproduce solid, convincing bass reach and impact with even a modest receiver.

System 150's uses are limited only by your imagination. It can be used to add basic surround sound performance to an existing stereo system, or as a video or secondary extension system. As the basic building blocks for a vast array of audio system configurations, the power-directed System 150 A is possibly the most versatile 3-piece component speaker system available.

System 150 CSR



System 150 CSR is a channel supplement package, consisting of the Model 153 C Center Channel Speaker and a pair of the Model 154 SR Surround Speakers. For example, upgrading an existing stereo system with a new surround receiver and System 150 CSR will provide surround sound audio or Dolby Surround movie performance. For those who already have System 150 A, System 150 CSR completes the loudspeaker requirements for a Dolby Pro-Logic system.

System 150 S



With its model 152 PBM, 153 C center channel speaker and a pair of 154 SR surround speakers, System 150 S is a quick and easy upgrade for anyone determined to improve an audio system's bass response, while adding capabilities ranging from simple surround sound to full Dolby Pro-Logic performance.

System 150 S, however, is most suited to allow enthusiasts to turn an existing audio system into a complete Dolby Pro-Logic setup. Whether simply adding an outboard Pro-Logic decoder or a completely new receiver or integrated amp with a built-in Pro-Logic decoder, System 150 S is the perfect component speaker adjunct to provide the thrilling experience of digital home theater.

System 150 HT



System 150 HT is a complete home theater system—one we actually designed for our personal use. It comprises the entire line of Atlantic Technology System 150 speaker components—a 152 PBM Powered Bass Module, a 153 C Center Channel Speaker, a pair of 151 LR Main Satellite Speakers and a pair of 154 SR Surround Speakers. The system is specifically designed for use with newer generation Dolby Pro-Logic receivers or integrated amplifiers, and represents our acoustically and cosmetically seamless way of bringing the movie theater into the living room.

Most new Pro-Logic receivers and integrated amplifiers provide multiple channels of amplification. System 150 HT, with its own powered subwoofer and five satellite components provides the multiple channels required by Dolby Pro-Logic, and the pure low-frequency power needed to reproduce the full dynamic range and frequency balance across the entire audio spectrum for a proper home theater experience.

Specifications



151 LR

Type: Two-way full-range speaker
Drivers: 4" polypropylene woofer; 1/2" dome tweeter
Frequency response: 80 Hz - 20kHz \pm 3 dB
Nominal Impedance: 8 ohms
Sensitivity: 89 dB
Power rating: 110 watts
Size: 5" x 7 1/2" x 4 3/4"
Weight: 3 1/2 lbs.



153 C

Type: Two-way dialogue speaker
Drivers: Dual 3 1/2" polypropylene woofers; 1/2" dome tweeter
Frequency response: 80 Hz - 20 kHz \pm 3 dB
Nominal Impedance: 8 ohms
Sensitivity: 89 dB
Power rating: 110 watts
Size: 10 1/2" x 5" x 5 3/4"
Weight: 4 lbs.



154 SR

Type: Spatially-enhanced surround speaker
Drivers: Dual 3 1/2" polypropylene full-range drivers
Frequency response: 120 Hz - 12 kHz \pm 3 dB
Nominal Impedance: 8 ohms
Sensitivity: 89 dB
Power rating: 110 watts
Size: 5" x 7 1/2" x 4 3/4"
Weight: 3 1/2 lbs.



152 PBM

Type: Power-directed amplified subwoofer
Driver: 8" polypropylene long-throw woofer
Output:
Powered mode: 3 x 30 watts
Passive mode: 70 watts (subwoofer only)
Frequency response:
Active output: 80 Hz - 21 kHz \pm 3 dB
Subwoofer: 30 Hz - 80 Hz \pm 3 dB or 30 Hz - 120 Hz \pm 3 dB
Dynamic bass equalization: 9 dB @ 35 Hz
Input impedance:
Input 1, 2: Line level - 10 k-Ohms (either mode)
Input 3: High level - 1.5 k-Ohms (powered mode)
Input sensitivity:
Input 1, 2: 50 mV (1 watt/4 ohms); 250 mV (30 watts/4 ohms)
Input 3: 250 mV (1 watt/4 ohms); 4.3V (30 watts/4 ohms)
Power requirements: 120V, 60 Hz
Power consumption: 12 watts idle, 200 watts max.
Size: 14 1/2" x 11" x 12 3/4"
Weight: 25 lbs.

Atlantic Technology reserves the right to change specifications and design at any time without notice.

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Atlantic

TECHNOLOGY

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Norwood, MA 02062
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TIME DELAY

BY STEVE SIMELS



30 years ago

In the November 1962 issue, electronics writer Herman Burstein's article "Hum: Its Causes and Cures" concluded, somewhat depressingly, that "Hum will always be with us."

Back to Mono? After considering the seven recordings then available of Beethoven's "Archduke" Trio in his series "The Basic Repertoire," Martin Bookspan recommended the 1928 version by the Casals-Cortot-Thibaud trio on Angel and the 1940 RCA performance by Heifetz, Feuermann, and Rubinstein.

Technical Talk: Julian Hirsch examined the Roanwell stereo headphones, and though he found "no audible distortion," he complained that its adjustable headband fit too tightly. He also called the Thorens TD-135 four-speed manual turntable "a sturdy, excellently made unit," although he had qualms about its speed-selector switch.

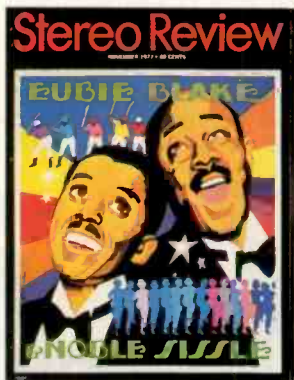
Best of the Month: Critic David Hall called the Fritz Reiner/Chicago Symphony version of *Also Sprach Zarathustra* on RCA "a document of singular and persuasive eloquence," and George Jellinek praised an all-Wagner disc by Eileen Farrell and Leonard Bernstein on Columbia. In pop, Nat Hentoff was enthusiastic about "Mildred Bailey's Greatest

Performances" and "The Ray Charles Story." Elsewhere in the review section, Joe Goldberg, reviewing a Dave Grusin jazz disc, noted that Grusin "does not yet emerge as an individual." *La plus ça change*

Letters: Reader Camille LaCombe, responding to an article in September by André



Hodeir, opined that "As for his odd notion that I can't grasp Debussy without his help, for this I have only two words, and they aren't *La Mer*."



20 years ago

Going on Record: In a daring attempt at Swiftian irony, Music Editor James Goodfriend, noting that classical records do not sell enough to repay their manufacturers, proposed that they be issued in tiny quantities, after which their masters would be destroyed.



New Products included the SAE Mark XII speaker system (\$975 a pair), the Stanton Dynaphase Seventy Five headphones, and a JVC 4VR four-channel receiver designed for use in quad systems. Test reports included the Harman Kardon Citation 14 tuner with Dolby B and the Wharfedale W60E speaker system, an acoustic-suspension design that Julian Hirsch said he could "heartily recommend."

Audio Basics: Ralph Hodges declared, perhaps overoptimistically, "We are really quite well along on the road to virtually maintenance-free equipment."



10 years ago

In his first editorial, new Editor in Chief William Livingstone discussed the movement to tax home taping and, in an uncharacteristically radical mode, concluded, "This editorial is protected by copyright, but if you Xerox it for your Congressman, I won't ask for a tax on copy paper."

Among the new products noted were AKG's lightweight

double-transducer headphone, "claimed to be the only headphone set with a gold-plated electrostatic element in each earpiece," Sansui's top-of-the-line D-970 three-head cassette deck, and the Grace F-9E Ruby moving-magnet phono cartridge, said to have "an almost perfect one-to-one energy-transfer characteristic from stylus to generating element."

In test reports, Julian Hirsch called the Sony TC-K555



cassette deck "a real bargain" and said that the performance of JVC's R-X40 receiver "would do credit to a much more expensive product."

Great Thoughts of Western Man: In the pop "News Briefs" section, the Sex Pistols' manager/Svengali Malcolm McLaren was quoted as saying, "Giant ghetto blasters embody real rock-and-roll communication, while Walkmans are for white sissies." In a helpful aside to the magazine's classical-music readers, "ghetto blasters" were defined as "large personal stereos."

In an alarming "Bulletin" item, readers were alerted to the fact that *Morning Has Broken* by Cat Stevens (then six years away from calling for the death of Salman Rushdie) had been chosen for inclusion in the new hymnal of the Episcopal Church. □

RECORD MAKERS

by Robert Ripps, Maryann Saltser, and Steve Simels

THE conductor Georg Solti celebrated his eightieth birthday and his thirtieth Grammy Award this year, and London Records, which has been recording Solti for forty-five years, has a heavy schedule of fall releases planned to honor the occasions. Recordings with the **Chicago Symphony** include Bruckner's Symphony No. 8 and a Debussy disc. There are Haydn symphonies with the **London Philharmonic** and Shostakovich's Symphony No. 1 and Stravinsky's *Rite of Spring* with the **Concertgebouw Orchestra**. And there's "The Solti Edition," a twenty-five-CD midprice set, and "Sir Georg Solti—Grammy Champion," a budget CD sampler highlighting his award-winning recordings. Solti conducts the Chicago Symphony live this month and will return to North America next February on tour with the

CHAMELEON RECORDS



Bel Canto: Nordic blues for the Winter Olympics

guitars, and computers—has just released a third album, "Shimmering, Warm and Bright" (on Dali/Chameleon). It incorporates English, Spanish, French, and German lyrics into music some critics have described as "Nordic blues." Olympic fans take note: Bel Canto has been selected as the official music ensemble for the 1996 Winter Games, which will be held in—you guessed it—Norway.

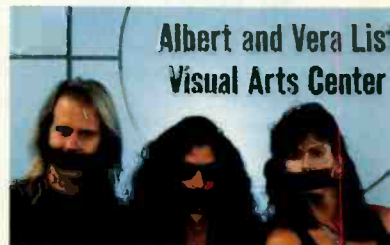
THE Miami-based New World Symphony was founded in 1988 to provide intensive learning and performing opportunities for gifted young graduates of American music schools. The orchestra is touring the Northeastern U.S. this fall with its artistic director, Michael Tilson Thomas, including a first appearance at Lincoln Center's Avery Fisher Hall on November 1. Its first recording, due next spring on the Argo label, features a twentieth-century Latin American program.

ROCK TO THE RESCUE? That's one way of describing what happened when legendary rockers Aerosmith donated \$10,000 to the List Visual Arts Center at MIT in Cambridge, Massachusetts.

ties, we would never have had a chance to get our music to people's ears. That's what's happening to the arts community."

Two legendary pianists, Glenn Gould and Vladimir Horowitz, are being celebrated this fall by Sony Classical. "The Glenn Gould Edition," commemorating the tenth anniversary of Gould's death and to be released over the next two years, comprises not only the complete CBS Gould catalog but also previously unreleased studio and live recordings as well as radio and television material that Gould recorded for the Canadian Broadcasting System. The CBC television and film

LEVIN/SCHNEIDER P.A.



Aerosmith: uncensored

productions will also appear on VHS videotape and laserdisc as part of Sony's "Glenn Gould Video Collection."

Previously unreleased studio recordings by Horowitz were issued in October on a CD called "Horowitz—Discovered Treasures." Nearly an hour long, it consists of recordings made between

LENNY COHEN/THE CARSON OFFICE



Solti: Grammy champ

Vienna Philharmonic, with concerts at Carnegie Hall in New York and in Washington, Boston, and Toronto.

FIRST there was ABBA. Then there were Roxette and the Sugarcubes. Now look out for another Scandinavian pop import, Bel Canto. The Norwegian duo—Anneli Drecker on vocals and keyboards and Nils Johansen on violin,

JIM STEREO/DECCA



Members of the New World Symphony: season No. 5

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RECORD MAKERS

1962 and 1972. The eighteen works range from sonatas by Domenico Scarlatti to pieces by Chopin, Scriabin, and Liszt.

THE soprano Kiri Te Kanawa rose to the top of the opera world with her performances and recordings

Leaves, Honeysuckle Rose, and The Second Time Around. She obviously enjoyed herself, saying, "Maybe when I finish opera I can go and do all the clubs." Before that she'll record *La Traviata* for Philips.

THE next guitar hero? That's what some people are saying about Shawn Lane, whose debut album, "The Powers of Ten," has just been released on Warner Bros. All-instrumental in the Joe Satriani mode, it's a one-man show since Lane—who's already played with everybody from Chick Corea to Waylon Jennings—plays his guitar and every other instrument, too (he also engineered the album). Stylistically, "Powers of Ten" veers from classical to jazz to pop and rock. One track, *Epilogue for Lisa*, reflects Lane's love for the film music of Ennio Morricone.

Leon Fleisher, who celebrates the fiftieth anniversary of his debut as a concert pianist next April, is currently recording the entire canon of piano concertos for the left hand with Seiji Ozawa and the Boston Symphony, as well as solo and chamber works, all for Sony Classical. The first disc in the series, released in September, includes the Ravel Concerto in D, the Prokofiev Concerto No. 4, and Britten's *Diversions*, Op. 21. Fleisher was a "superstar" pianist in the ear-



Leon Fleisher: classical southpaw

CHRISTIAN STENEBAUX B. WILLIAMSON

ly Sixties, but in 1965 he began experiencing numbness and pain in his right hand, finally diagnosed as "carpal tunnel syndrome," a condition that has plagued many noted musicians. He subsequently devoted himself to the sizable repertory scored for the left hand alone, most of it written for the Austrian pianist Paul Wittgenstein, who lost his right arm in World War I.

THE best unsigned rock-and-roll band in America has been signed at last. Yes, the *Skeletons*—legends since an earlier incarnation as the Morrells and more recently heard as the back-up band in former Del-Lord Scott Kempner's new album—have signed with Alias Records, and their self-produced album "Waiting" has just been released. Apart from new original songs by the *Skeletons'* bassist, Lou Whitney, and guitarist, D. Clinton Thompson, it also contains the requisite unusual cover tunes, among them the obscure 1968 Beach Boys' gem, *How She Boogalooed It*.

GRACENOTES. The adventurous Sundazed label has released "The Great Lost Knickerbockers Album," a collection of singles and previously unreleased tracks by the Sixties garage band whose hit *Lies* was the most eerily Beat-

lesque song of the period. . . . Sony Classical will be issuing 119 CD's of recordings by Leonard Bernstein spanning three decades, remastered from original session tapes, in an ongoing project called "The Royal Edition" (each cover will feature a watercolor by the Prince of



The Skeletons signed

Wales). Most of the recordings were made with the New York Philharmonic, and the series is also a tribute to the orchestra's 150th-anniversary season. . . . The 1971 classic "The Allman Brothers Live at the Fillmore East," generally considered to be among the top live rock albums of all time, has just been reissued by Polydor. Bonus: Some songs that were previously edited to fit vinyl time constraints have been restored to their original concert lengths. □

ALIAS RECORDS



Jazz singer Te Kanawa

of the music of Mozart and Strauss. In a new album for Philips titled "Kiri Side-tracks," she crosses over into the world of jazz. With André Previn on piano, Ray Brown on bass, and Mundell Lowe on guitar, Te Kanawa performs such material as *Autumn*

Shawn Lane: he'd rather do it himself



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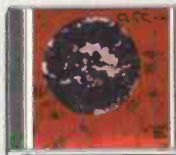
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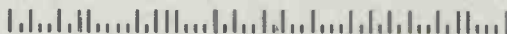
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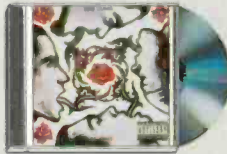
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SIGNALS

BY KEN C. POHLMANN

The Sound of Speed

WHEN most people think of a hi-fi system, they envision a living room with a CD player, a receiver, and two loudspeaker cabinets. But that image is rapidly becoming as obsolete as the LP record. Increasingly, stereo systems are heading down two separate paths that will carry them far from the original living-room model. Home high-fidelity systems are being combined with video to create home theaters, and they are heading out of the living room entirely, and into cars.

It is possible to surmise that cars will become the high-fidelity listening places of the future. Most people's homes are too busy with distractions, television in particular, to promote extended listening. The car environment, on the other hand, is almost ideal. We are spending more and more time in our cars, and cars are becoming high-technology wombs, complete with high-fidelity autosound. Think of the last time you enjoyed an hour of music uninterrupted—were you at home or in your car? In the future, the best audio reproduction systems, employing the sharpest cutting-edge technology, may be found in cars.

The numbers certainly support the idea. In 1991 sales of home audio components totalled \$1.8 billion, the lowest figure in four years. The sale of aftermarket autosound equipment brought in \$1.2 billion, the highest figure ever, and the sale of domestic factory-installed autosound systems accounted for \$2.9 billion. When the value of imported factory-installed autosound systems is included, the total autosound market probably exceeded \$6 billion. Clearly, Americans like their music on wheels, and we are willing to spend a lot to get the best 12-volt sound money can buy.

Of course, manufacturers are willing to meet this demand. The past decade has seen unprecedented growth in the sophistication of autosound technology. Mobile sound systems of the 1970's and 1980's were tame compared with today's high-tech wonders. Overcoming initial reluctance to take CD's on the road, Ameri-

cans now love to listen to digital sound while driving. In-dash single-disc players and trunk-mounted CD changers are the fastest-moving autosound products around, and new in-dash CD changers will only add fuel to sales. Once drivers heard CD playback through their existing systems, they realized that by upgrading their components they could achieve truly excellent results. The race was on for better and better downstream electronics and transducers.

Digital signal processing (DSP) has revolutionized mobile audio. The claustrophobic sonic characteristics of car playback can be overcome through ambience enhancement by simulating the acoustics of large spaces. Ambience enhancement is almost easy in the car; the audio system already contains multiple audio channels and loudspeakers distributed throughout the passenger compartment, and the seating positions are fixed and known. Thus, a sound field with a superb balance of direct and ambient sound can be created.

The degrading effects of analog equalizers and crossovers can be overcome through the use of their DSP counterparts. Some autosound systems even permit automatic system tuning and balancing, complete with an on-board calibrated microphone and a pink-noise generator. The problem of stereo panorama, a chronic weakness of car audio systems, can be solved by time-aligning individual loudspeakers with digital delay lines. With such sophisticated electronics, and high-quality power amplifiers and speakers, the few cubic feet of air inside a car can be tweaked to yield audiophile fidelity.

With an eye on the bottom line, audio manufacturers are increasingly focused on products that emphasize mobility. The Philips Digital Compact Cassette is designed to replace the analog cassette, long the staple of car audio, and extend the cassette format into the next century. Car makers are clamoring to install DCC players so their customers can listen to both analog and digital cassettes. The Sony Mini Disc promises all the benefits of CD in a smaller, recordable format that is even better suited for cars. And

towering above all tape and disc formats is Digital Audio Broadcasting. When DAB comes to America, it will overcome all the evils of mobile analog radio reception and let drivers tune into both terrestrial and satellite digital audio transmitters to listen to unwavering CD-quality radio.

Car manufacturers are big-time players in autosound audio (Ford alone sells about a billion dollars a year in audio equipment), but their technological horizons exceed those of pure audio manufacturers. They are intent on redefining the acoustic quality of the car itself through active noise-

**The claustrophobic
sonic characteristics
of cars can be
overcome by simulating
the acoustics of large
spaces with digital
signal processing.**

cancellation technology. By sensing ambient noise from the engine, exhaust, and wind, then generating an inverse acoustic signal, ambient noise can be diminished. Combined with vibration-deadening car construction, noise cancellation will make even high-speed driving a very quiet experience—until, that is, you delve into your remote-controlled library of music and enjoy the high-fidelity sonics of your mobile concert hall.

When you think of car audio, do you think only of a bunch of punks bending their roof's sheet metal with bass? Better think again. With what's already available in the new 12-volt audio technology and what's coming up, the best listening spot in the home might not be in the living room. It might be in the garage. □

AUDIO Q&A

BY IAN G. MASTERS

Tape Identification

Q *The formulation for a blank cassette is easy to identify because it is always clearly written on the package, but with prerecorded tapes it's not easy to tell what's inside the shell. Is there a standard method of determining tape formulation in order to set the equalization correctly?*

ALBERT YU
Houston, TX

A Unless the cassette is labeled, there's no sure way for you to tell short of experimentally recording on a bit of the tape. Checking the color of the oxide may give some clue—if it's chocolate-brown, it's probably Type I (ferric, or "normal"); if it's black, it's probably Type II (chrome or chrome-equivalent) or Type IV (metal)—but even that's not always a reliable indicator these days. Most prerecorded cassettes use fairly inexpensive tape, almost always Type I, so if any other formulation is used, the record company is almost certain to say so on the package.

On the other hand, when prerecorded cassettes are made with Type II tape, it is usually with the standard 120-microsecond (μ s) Type I equalization rather than the 70- μ s EQ normally used with Types II and IV tapes to improve noise performance. (This is done to maintain compatibility with cheap players that lack a 70- μ s EQ option and to improve high-frequency headroom, which is at a real premium in high-speed duplication.) So your best bet is to scour the package for an indication of whether you should use 120- or 70- μ s playback equalization. If you can't find any, 120- μ s is probably the correct choice.

Budget Home Theater

Q *I would like to turn my system into a home theater setup using my present integrated amplifier. Can I simply add a second pair of speakers, a center channel, and a subwoofer, or must I have additional amplifiers and a surround processor?*

JASON REESE
Ames, IA

A "Home theater" can mean almost anything as long as it includes video and some sort of audio more elaborate than the 4-inch speaker in your old TV set. Simply feeding the signal from a stereo TV set or a hi-fi VCR to a conventional two-channel stereo system is a form of home theater that can offer an experience well beyond that of merely "watching TV." Adding rear speakers fed by your amplifier's Speaker B terminals or wired across just the hot sides of the speaker terminals can add a sense of depth, and a subwoofer is rarely amiss. Even a center speaker could be added to fill in the "hole in the middle," as long as you wire it properly.

That said, however, I assume from your question that you are aiming for something on

the order of a Dolby Pro Logic surround-sound system, which will give much better results than the makeshift arrangement described above. For that you will definitely need extra amplification and a surround decoder. Some models, from companies such as AudioSource, Carver, and Yamaha, contain both the Dolby circuits and the extra amps but are designed to use your current equipment for the main channels.

Powered Surround

Q *At college, my stereo system consisted of a CD player and a pair of small powered speakers. Now I am setting up a more elaborate system, and I would like to use the amplified speakers for the surround channels. As my receiver puts out only 20 watts a channel, maximum, in the rear, will using the powered speakers damage my receiver, the speakers themselves, or possibly both?*

MATTHEW P. O'MALLEY
Washington, NJ

A Since the speakers have their own power, what your receiver provides in that respect is more or less irrelevant. You should feed the powered speakers from line-level rear outputs if your receiver has them. If not, the amplifier outputs can be used—the speakers will draw only a fraction of their power—although you may have to pad the outputs down if the speakers have only line-level inputs.

CD Scratches

Q *The new single-play CD receiver I bought for my car puts small scratches on my discs' playing surfaces. Even brand-new CD's come out scratched, although nothing happens to them when I play them in my home machine. When I first noticed the problem I replaced the car unit, and later I had the second player serviced as well. The problem remained, so I am inclined to believe it's a design fault. Is there anything I can do about it?*

JAMES A. ODDO
Brooklyn, NY

A Probably not, except to relax a little. Any damage to a CD's surface is, of course, to be avoided if possible, but the format has considerable toleration for physical flaws. Players include error-correction circuits to detect and replace missing data, whether caused by scratches or smudges on the surface or by momentary mistracking of the laser beam. Most new machines can deal with fairly major dropouts, and car and portable players typically shine in their error-correction abilities, as they are especially vulnerable to disruptions of various sorts.

In your case, I suspect that the small scratches are caused by the player's disc-

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IA-Audio Logic: Des Moines; Hawkeye Audio: Iowa City.
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IL-Absolute Audio Video: Rockford; August Systems: Champaign; Mills Recording: Chicago; Simply Stereo: Hoffman Estates, Orland Pk.; Stereo Studio: Palatine, Villa Park; Select Sound: Naperville; Sterling Elect.: Sterling; The Shoppe: Kankakee.
IN-Ovation Audio: Clarksville, Indianapolis.
KS-Electronic Dreams: Wichita.
KY-Ovation Audio: Lexington, Louisville.
LA-Altman Audio: New Orleans, Metairie.
MA-O'Coins: Worcester (Boston: see Nashua, N.H.).
MD-Audio Assoc.: Annapolis, Laurel, Rockville; Cumberland Elec.: Cumberland; Gramophone: Balt., Ellicott City; Soundscape: Balt.; Sd. Studio: Salisbury.
ME-Cookin': Portland.
MI-Listening Room: Midland, Saginaw; Overture Audio: Ann Arbor; Pecar's: Detroit, Troy.
MN-Audio Perfection: Minneapolis.
MO-Primus Audio: K. C.; Sound Central: St. Louis.
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ND-Pacific Sound: Bismarck.
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NM-West Coast Sound: Albuquerque, Las Cruces, Sta. Fe.
NV-Upper Ear: Las Vegas.
NY-Audio Breakthroughs: Manhasset; Audio Den: Lake Grove; Clark Music: Syracuse; Electronic Workshop: Manhattan; Hart Electronics: Vestal; Innovative Audio: Brooklyn; Listening Room: Scarsdale; Rowe Camera: Rochester; Sound Mill: Mt. Kisco, Yorktown Hts.; Speaker Shop: Amherst, Buffalo.
OH-Audio Craft: Akron, Cleveland, Mayfield Hts., Westlake, Toledo; Audio Etc.: Dayton.
OR-Bradford's HiFi: Eugene; Chelsea Audio Video: Portland, Beaverton; Focus: Salem.
PA-GNT Stereo: Lancaster; Hart Electronics: Blakely, Kingston; Listening Post: Pittsburgh & suburbs; Sassafras: Philadelphia suburbs, Allentown; Stereoland: Natrona Heights; Studio One: Erie.
RI-Eastern Audio: No. Providence.
SC-Dashboard Stereo: Charleston; Stereo Video: Greenville; Upstairs Audio: Columbia.
TN-Hi Fi Buys: Nashville; Lindsey Ward: Knoxville; Modern Music: Memphis.
TX-Audio Tech: Temple, Waco; Audio Video: College Station; Bunkley's Sd. Systems: Abilene; Bjorn's: San Antonio; Harold's Electronics: Odessa, Midland; Krystal Clear Audio: Dallas.
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AUDIO Q & A

loading mechanism, which must touch the disc's surface to draw it inside—any such contact runs the risk of slight damage. The CD you included with your letter did exhibit scratches that might have been caused this way, but they were practically invisible even with a powerful magnifying glass. When you consider that virtually any CD player can play through a 1.5-millimeter dropout (that's about the diameter of a 1-inch finishing nail), the microscopic abrasions on your discs should not cause concern.

Extra Channels

Q *Would it be possible or practical to set up a Dolby Pro Logic surround system with seven speakers, two for the main channels, two for surround, two in the rear, and one for center images? If so, would it be superior to the conventional five-speaker arrangement?*

FRED YANKELLOW
Goldsboro, NC

A The configuration you suggest is possible and comes closer to the way it is done in Dolby-equipped theaters, where a diffuse sound field is created by feeding the surround signal (which is mono, remember) to a large

number of speakers with different local acoustic environments and at different distances from a given listener. Whether more than two surround speakers are a good idea in a home setup is open to debate. In a large room, the extra speakers might well improve the effect, but Tom Holman (of Lucasfilm THX fame) says that his experiments suggest two surround speakers is the optimum number for most home setups. More than that, he says, tends to introduce objectionable coloration from "combing" of the multiple identical outputs. But the only way to tell for sure in any given system is to try it out. Just be sure the rear channels in your amplifier have enough power and can handle the lower impedances presented by multiple speakers—you may have to add extra amps.

Phono Preamps

Q *Although I normally buy compact discs, I still have a large collection of vinyl records that I have no intention of replacing. To make sure I'll be able to play my LP's well into the future, I have bought two turntables that I plan to use alternately to prolong their lives, plus several replacement styli for my cartridge. But I worry that eventual upgrades of my*

electronics will mean that I'll have nothing to connect my record-playing equipment to—already there are receivers and amplifiers on the market without phono jacks. Is there an out-board component I could buy that will still let me play my records when phono inputs disappear for good?

CURTIS PERRY
Harriman, TN

A Yes. It's called a phono preamp, and a number of companies make them. Mostly these are high-end components—carrying price tags in the hundreds, or even thousands, of dollars—designed to overcome the supposed limitations of the phono sections built into existing preamps. One of these would no doubt give you superb performance virtually forever if your budget can stand it. If not, companies such as Shure and Radio Shack have more modest phono preamps that are adequate for most purposes. An even simpler solution, when upgrade time arrives, is to hang onto your present receiver or preamp and use it just as a phono preamp, feeding a tape-out signal to a high-level input on your new equipment. That would also have the advantage of giving you several extra line inputs as well, which may be welcome if your system becomes very complex. □

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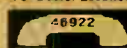
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Hey, Good Lookin'

VCR's and camcorders—ninth
in a series on the practical business of
buying audio/video equipment

BY IAN G. MASTERS

ONE doesn't have to go out on too long a limb to assume that most of us have had videocassette equipment for years. What is becoming increasingly common, however, is the integration of video into a complete home entertainment system that includes both audio and television gear. The demands that sort of application places on a VCR are far greater than was expected when home video first appeared, and today's top machines offer much more in the way of both performance and features than VCR's of even a couple of years ago.

The production bug is spreading as well, with camcorders sprouting on the nation's shoulders at an ever-increasing rate. In the end, the portable equipment has to be harmonized with what you have at home if you want to have any hope of enjoying the fruits of your creative labors.

Purists might argue that the VCR is a dead issue anyway, at least for playback, and that the only way for a serious videophile to go is to buy a laser videodisc player. Certainly laserdiscs do offer the highest level of video performance available today, plus the benefits of digital audio, but most of us still live in a world of tape, particularly if we rent movies frequently. In any event, the range of options available in disc players is narrower than with VCR's and camcorders, so the latter tend to offer a greater challenge to the conscientious shopper.

WHAT MATTERS

Video equipment is inherently complicated, which means that a lot of factors should be considered when making a buying decision. It may not be possible to juggle every conceivable



variable, but a few should be in the forefront when you go shopping.

- **TO V OR NOT TO V.** Whether you are looking for a tabletop VCR or a camcorder, you will probably gravitate to some sort of VHS machine, because that offers the best chance for compatibility with the rest of the world. Within that family of systems, however, there are numerous options, and these do matter. If you just rent movies, stick with standard VHS. If you tape off the air, you might want to consider stepping up to the higher resolution of Super VHS, and if you are into editing tapes you have made yourself, you definitely should consider S-VHS, which holds up much better than standard VHS through multiple generations of dubbing.

A VHS or S-VHS camcorder may

be designed for full-size or compact (VHS-C) tapes, the main tradeoff being size versus recording time. Recording time may not matter much if you expect eventually to edit your productions onto another tape, but size may become a serious issue when you find yourself lugging equipment around for hours. You can avoid this tradeoff with an 8mm or Hi8 (higher-resolution 8mm) camcorder, which can combine small size and long recording time, if you don't need to play back your camcorder tapes in your home VHS deck. Since most camcorders can serve as playback units, direct compatibility is not essential.

- **PROGRAMMING EASE.** All home VCR's have at least some provision for unattended recording, but many seem to go to considerable lengths to

ILLUSTRATIONS BY MARK FALLS

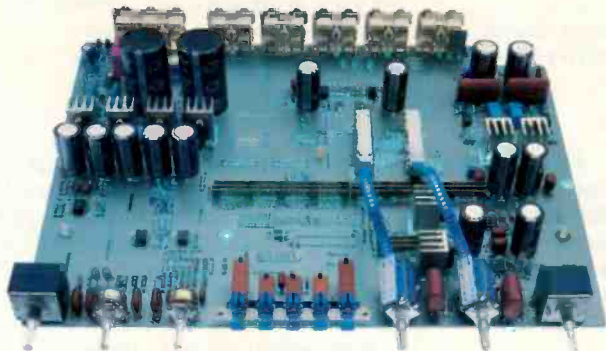
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The Lingo

Video equipment does have an audio element, which is described in the same way as hi-fi gear. But video is also a whole different branch of consumer electronics, with a vocabulary all its own.

FORMATS. Even though the original home video format—*Beta*, with its upgrades *Super Beta* and *ED Beta*—has almost completely disappeared from the shelves, there are lots of variations in recording systems. The majority of home VCR's and some camcorders use *full-size VHS* cassettes; top-of-the-line versions incorporate *Super VHS*, or *S-VHS*, recording and playback, which offers a dramatic improvement in horizontal resolution over the conventional system. Both are available in compact form, as *VHS-C* or *S-VHS-C*, for use in camcorders. All the members of the VHS family are compatible at least to some degree. Incompatible (in the sense that the tape cassettes used are not interchangeable with VHS cassettes) is the *8mm* system, which is almost totally restricted to camcorders. It comes in conventional form, with performance that approximates standard VHS, and in an upgrade called *Hi8*, approximately equivalent to *S-VHS*.

AUDIO SYSTEMS. The original tape systems used a *linear audio* track, in which the sound was recorded in a strip along the edge of the tape. The VHS formats still employ this, whatever other audio systems they may have. In a few cases the linear track is split into a stereo pair, sometimes with *Dolby B* noise reduction, but it offers poor audio performance. Many home VCR's and a few VHS camcorders incorporate the

greatly superior VHS *Hi-Fi*, or *AFM*, sound, in which the audio is frequency-modulated and recorded by a spinning head along with the video. In addition, the tuner sections of many VCR's include *MTS* (multichannel television sound) decoders for recording stereo broadcasts. All 8mm machines offer at least mono *AFM*, and a few are stereo.

SPEEDS. There are three standard speeds for VHS recorders. *SP* (standard play) enables you to record 2 hours of material on a T-120 cassette; *LP* (long play) doubles that to 4 hours; *EP* (extended play), also known as *SLP* (super long play), triples the time, to 6 hours. All VHS recorders record and play in at least the fastest and slowest speeds and are able to play back the middle one; a few can record in *LP* as well. Although the 8mm standard provides for *SP* and *LP*, relatively few camcorders include the slower speed.

EFFECTS. Many VCR's and camcorders will do some tricks—more, in fact, than you will probably need. One common feature is *picture-in-picture*, or *PIP*, which lets you see two programs at once, the main one and a second image in a small rectangle inset into a corner of the screen. This can usually be moved around and its size altered. *Mosaic* effects change the contrast and color level of images, and *strobing* creates a series of still images rather than a smoothly moving picture. In some cases, these effects are accomplished by *digital processing*.

LINES. One of the main performance criteria for any piece of video equipment

is the sharpness of the picture it produces, usually called its *resolution*. Vertical resolution is fixed by the number of scanning lines used in the television system, but horizontal resolution is a function of the device's high-frequency bandwidth. It's also expressed in *lines*: the maximum number of black and white lines that can be distinguished across a portion of the screen as wide as the screen is high. Conventional VCR's and camcorders clock in at about 200 lines or so, and the enhanced-format units (*S-VHS* or *Hi8*) can exceed 300 lines. Laserdisc players can usually deliver up to 400 lines.

CARRYING IT AROUND. Camcorders—portable VCR-and-camera combinations—have a terminology of their own. The *auto iris* adjusts the camcorder's sensitivity to light for the best picture. High *shutter speeds* let you make clear stop-action shots, as long as there's enough light. The number of *pixels* (picture elements) in the *image sensor* (the heart of the camera) affects the resolution of the image, though it is a mistake to assume that a pickup with more pixels will necessarily deliver a higher-resolution image, especially when you factor in the limitations of the recording format. Low-level sensitivity is expressed as the minimum number of *lux* required to produce an image (but manufacturers differ as to how they measure this, often quoting numbers that will produce unwatchable pictures). A camcorder's ability to produce smooth transitions from one scene to the next usually depends on the presence of a *flying erase head* mounted on the rotating head drum.

make it hard to do. If you have no need for this feature, then it doesn't matter, but if you intend to do a lot of time-shifting (recording programs off the air for later viewing), you should investigate the programming features almost before you consider anything else. Some of the easiest systems use on-screen menus to guide you through the necessary steps, but even those can be rather complex. Before you buy, you should actually program something in the store; if the process isn't reasonably intuitive or takes too many steps,

pick another machine. An increasing number of recorders incorporate the VCR Plus system, which enables you to set up for unattended recording simply by entering a code number from your newspaper's TV listings. It doesn't get much easier than that.

• **SOUND CHOICES.** Increasingly, video programming is accompanied by sophisticated audio. Above a certain price level most home VCR's include stereo hi-fi sound (called VHS Hi-Fi in VHS machines), but it's not universal,

so if you plan to set up anything resembling a home theater, or even just to patch your video recorder into your existing audio system, make sure you have the high-quality audio option. In camcorders, only a few VHS or VHS-C machines have hi-fi sound, which is always stereo when it's there at all; in 8mm, mono hi-fi audio is standard and stereo is increasingly available.

• **ACROSS THE ROOM.** As with any home entertainment equipment, the remote control is vital because that

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Beosystem 2500

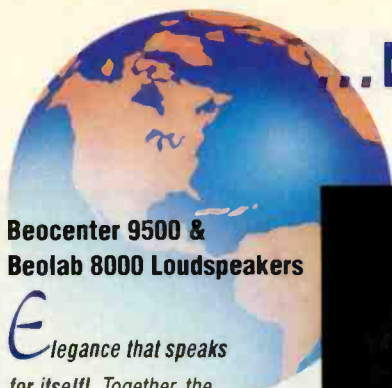
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Video System 5500

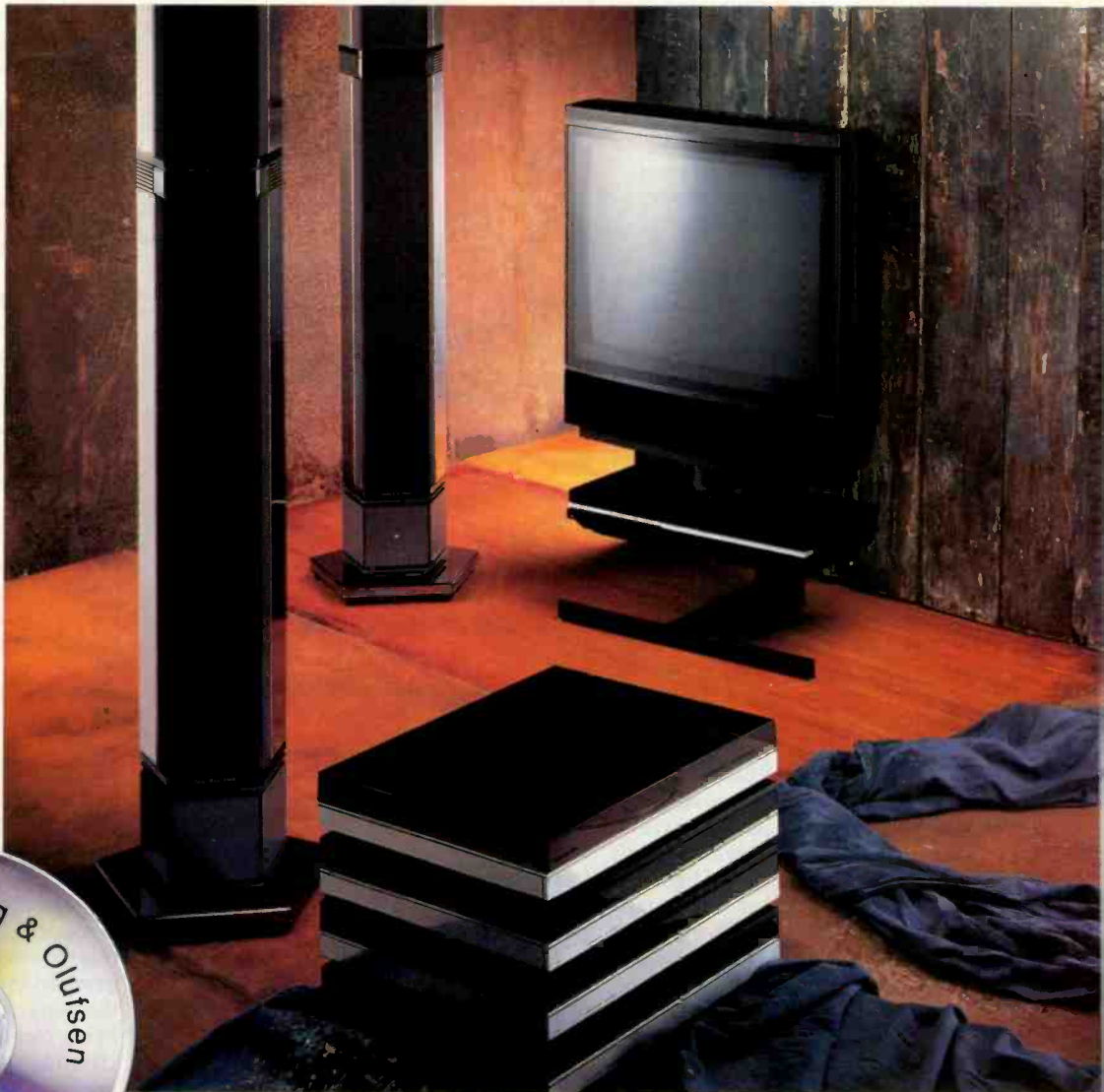
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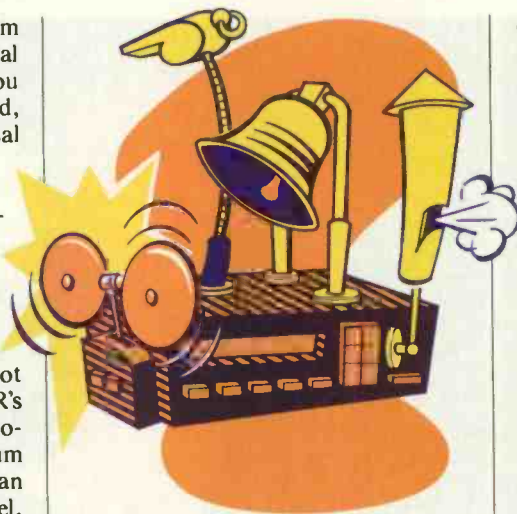
will be how you'll drive your system most of the time. Look for a logical layout and not too many features you will never use. If, on the other hand, you intend to use a single, universal remote for all your equipment, you can pick the VCR with the simplest remote possible—as long as everything else does what you want.

- **HEAD COUNT.** Although the number of video heads a VCR has is usually not as big a deal as it is sometimes made out to be, it's not completely unimportant. All VCR's have at least two video heads on opposite sides of the rotating head drum (plus a stationary audio head and an erase head). Above the budget level, however, they usually have four video heads on the drum. In most machines the primary purpose of the two extra heads is just to produce cleaner special effects (still-frame and so forth), but in some one pair is optimized for high-speed recording and playback, the other pair for low-speed operation (which trades off picture quality for longer recording time). In a two-head VCR, the heads are optimized for the slowest speed, which somewhat compromises performance at the inherently superior high speed. All hi-fi VCR's have four video heads. Some high-end VCR's and many camcorders now have what is known as a flying erase head on the drum to enable cleaner edits and transitions between programs or scenes.

WHAT DOESN'T

Beyond the basic format differences, VCR's and camcorders differ mainly in construction quality and features, many of which have limited value for most people. They don't necessarily add a lot to the price, however, and you probably will wind up with at least a few features you don't need no matter which VCR you buy. Just stay focused on the ones you *do* need.

- **S JACKS.** The idea of giving the color (chrominance) and the brightness (luminance) portions of the image their own signal paths is attractive, but in practice it seldom yields much, if any, visible improvement in picture quality. Note, by the way, that the correct name for this type of connection is S-video (for separated video), not S-VHS (which means Super VHS): The two are not directly relat-



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ed, even though S-VHS decks normally have S-video inputs and outputs and regular VHS decks normally don't.

- **PICTURE BENDING.** Okay, you may want to freeze your picture, or strobe it, or watch two at a time, but probably not very often. These are far from essential features, and many people never use any of them.

- **CAMCORDER STUFF.** Ignore minuscule lux readings for the camera portion. For one thing, they are not really comparable from one brand to the next; for another, by the time you get anywhere close to the minimum level, the picture is usually so grainy that you wouldn't want to watch it anyway. And though advanced users may find production aids like fades and elaborate titling attractive, they are usually too awkward to operate for the rest of us. If you do figure them out, the effects often turn out pretty hokey.

GET WITH IT

The greatest favor you can do your video equipment, whether it's a tabletop VCR or a camcorder, is to buy the best tape you can afford: All else being equal, the better the tape, the better the image. The extra cost will be well worth it, particularly if you intend to edit the tapes you make in the field to more manageable length, a process that inevitably results in a second-generation tape. If the original is good, the copy will have a better chance of being clear. In addition, a good head-cleaning system will pay dividends in the long run: Dirty heads not only create noisy pictures but can also disrupt the smooth movement of the tape and, in the worst case, damage it permanently. There aren't many other useful accessories for VCR's.

Camcorders are another matter: There are thousands of things you can buy to help you make better videos. At minimum, start with at least one extra battery pack, a tripod (both for long shots, which are notoriously difficult to keep steady, and for occasions when you want to be in the action yourself), a light if you intend to do much indoor taping, and an external microphone with a longish cord (or, if you really want to go the whole nine yards, an FM wireless mike). □

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CAR STEREO



Blaupunkt Cheyenne Cassette Receiver

KEN C. POHLMANN
HAMMER LABORATORIES

THE Blaupunkt Cheyenne neatly reconciles the old analog tape technology with the newer digital disc. It is an in-dash cassette player with AM/FM tuner and on-board power amplifiers. In addition, it acts as a controller for a CD changer. Another sign of changing times: It is both removable and factory-programmed with a security code.

The Cheyenne's front panel is unmistakably Blaupunkt, with a distinctly European flair, but it's somehow fresher than previous Blaupunkt models, somewhat less sternly Teutonic. It has a rotary volume control, almost a rarity today. The knob is used for both power on/off and volume adjustment, as well as tuner scanning when it's pushed in—an unusual arrangement but one that makes perfect sense to anyone who's constantly searching the radio dial for something good to listen to. If a CD changer is hooked up, the knob scans disc tracks.

A double row of ten buttons gives access to most of the unit's features. The bass, treble, balance, and fader controls are set by pressing the appropriate button, then using a four-button cursor to make the adjustments. A large numerical display tells you what's going on. A DSC (direct software control) button is used to turn a blinking security LED on or off, to select one of three loudness settings, and to select one of three different tuner sensitivity settings; the cursor buttons are used to change settings. The SENS (sensitivity) button switches between local and sensitivity tuning and affects the signal-strength threshold.

When the RM (radio monitor) button is engaged it lets you listen to the radio while you're fast-winding a tape. The MTL (metal-tape) button sets the proper equalization for playing back a metal or high-bias tape. The CPS (cassette program search) button stops the tape player at the beginning of each track during fast winding. Cassettes are ejected with a mechanical eject button, and other buttons are used to mechanically select fast-forward and rewind, to reverse playback direction, to select loudness compensation, and to select the tuner, tape player, or CD changer.

The button labeled FM/T selects one of three banks of FM presets. One can be used as a Travel Store bank, with the six strongest FM stations in the vicinity automatically loaded into it. When you're operating the CD changer, the same button selects play or pause. The RPT/AM button selects the AM band or repeats the current CD track. The MIX/PS button either scans the tuner presets or randomly plays all tracks on the current CD. Six numbered buttons select the preset stations. Manual tuning is provided by the left and right cursor buttons, auto-

matic seek tuning by the up and down cursor buttons. The cursor buttons are also used to select a CD disc or track and to provide audible music search.

The Cheyenne has a green and white LCD screen that provides comprehensive operating-status information. The principal readouts are very large, and the display is very readable at night but prone to glare in bright sunlight. Nighttime button illumination is very good, with white back-lighting for all but the three mechanical buttons.

Whenever power is interrupted, you must enter a factory-set four-digit anti-theft code or the Cheyenne will not operate. If you religiously remove the unit whenever you park your car, or if you simply like to live dangerously, you can disable the code feature to avoid having to enter the code every time you reinstall the chassis. Removing the Cheyenne is easy: Simply push a button to reveal a metal handle, and pull.

The Cheyenne's wiring complement is pretty standard, with four speaker outputs, four channels of line-level outputs, a telephone-activated audio-muting input lead, an illumination dimmer lead, power leads with in-line fuses, and a DIN plug for connection to a Blaupunkt CD changer.

Lab Tests

The Cheyenne was strong on the test bench, with consistent and balanced performance in its tuner, tape, and amplifier sections. The tuner's sensitivity measurements were the best I've seen in quite a while. Image rejection and AM rejection were about

Dimensions

7 $\frac{1}{8}$ inches wide, 2 $\frac{1}{16}$ inches high,
6 $\frac{1}{2}$ inches deep
(DIN size, includes shuttle box)

Price
\$340

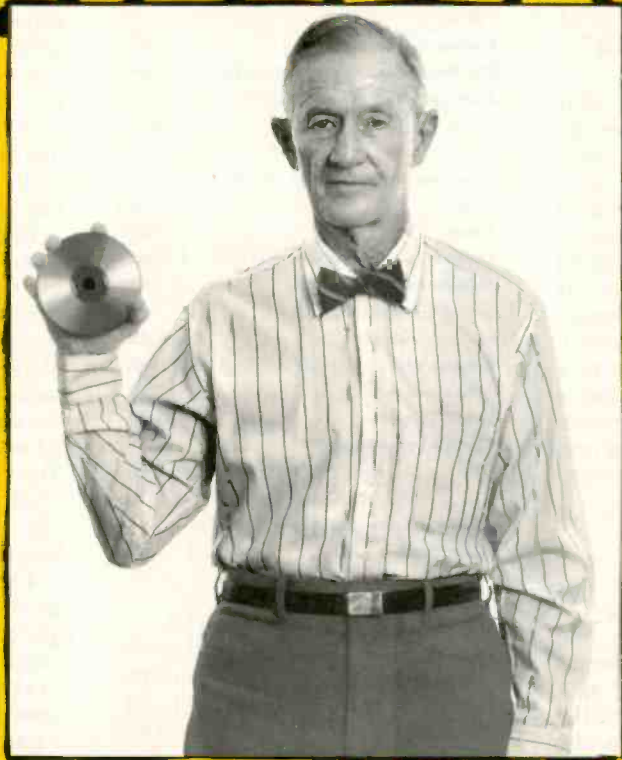
Manufacturer

Blaupunkt, Dept. SR, P.O. Box 4601,
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CAR STEREO

par, as was capture ratio. Both adjacent- and alternate-channel selectivity were very good. Signal-to-noise ratio (S/N) and channel separation were good but could have been better, and distortion was reasonably low. FM frequency response was quite good for a car receiver.

The tape section seemed very solid and delivered quite respectable results in flutter and speed-accuracy measurements. Crosstalk between adjacent tracks and channel separation were somewhat better than average. The S/N with metal tape exceeded 50 dB both with and without Dolby B noise reduction—very good performance. The tape section's frequency response was also quite good, with a slight bump around 6,300 Hz and a slight rolloff at 30 Hz. The four power amplifiers each pumped 3.9 watts into 4-ohm loads, with good overall performance numbers.

Installation

Installation of the Cheyenne was uneventful once I removed the CD tuner, digital ambience processor, and other components from the dashboard of my test car. After I had freed up a DIN-size space, I quickly inserted the Cheyenne's chassis sleeve into the dashboard, bending tabs and mounting a rear strap to secure it. I attached the amplifier output leads to my front speakers, bridging the front and rear outputs to create higher-powered left and right channels. I connected the rear-channel auxiliary outputs to an external power amplifier. Other connections included ground, ignition, battery, remote turn-on, lighting dimmer, and antenna. Lacking a Blaupunkt changer, I did not connect the CD controller lead. Finally, I shoved the Cheyenne into place, docking it in its sleeve, grabbed a wallet full of tapes, and hit the road in a late-afternoon torrential South Florida downpour.

Road Tests

Keeping a careful eye on the road, I first tried to familiarize myself with the Cheyenne's front panel. The controls of a well-designed head unit should fall naturally under your fingertips with a logical, intuitive feel. In this case, however, I found myself glancing all too often at the faceplate. There were just too many buttons of identical size and shape, clustered too closely to-

gether. Moreover, I simply could not remember which of the four cursor buttons were used for which feature. Ultimately, after some cursing, I pulled off the road and committed the panel to memory, but even then it was difficult to find the right buttons because tactile identification was so poor. Those rows of square buttons sure *look* nice, but you'd better mount this unit high in your dashboard so it's easily visible, or else lower the deductible on your car insurance.

Ergonomic frustrations aside, I soon appreciated the Cheyenne's inner beauty. The tuner performed extremely well, even in poor weather. Reception was very clean, and the ability to dial in different sensitivities made it easy to target both local and distant stations, balancing signal fidelity with noise. Other features, such as Travel Store, worked flawlessly. Best of all, multipath interference was minimal, and the tuner's sound was excellent with strong signals.

The tape transport was also quite good. Although the mechanical eject and reverse/fast-wind buttons are less elegant than electronic controls, they worked well, and the transport seemed to be very solid and smooth. Features such as cassette program search worked without fault. Tape-head alignment was very good in both forward and reverse, with no indication of treble rolloff. Overall, tape sound quality was very good.

The internal power amplifiers performed without complaint, driving my front speakers to modest levels. The sound stayed clean, but the amplifiers clipped audibly at high volume settings. Because the Cheyenne has four-channel line-level outputs, it would make sense to use external amplifiers for all four channels in order to take full advantage of its capabilities.

At the end of my test run, my fingers still had not completely learned to distinguish among the Cheyenne's many buttons, but I was definitely making progress up the learning curve. In time, I'm sure anyone's fingertips could learn this front panel. Once you do, you'll have no problem enjoying the strong performance of its tape and tuner sections. With affordable, high-performance cassette receivers like the Cheyenne available, the analog cassette format might survive longer than a lot of people expect. □

MEASUREMENTS

TUNER SECTION

All figures except frequency response for FM only.

Usable sensitivity (mono)	19.0 dBf
50-dB quieting sensitivity (mono)	20.0 dBf
Harmonic distortion (THD + N at 65 dBf)	
mono	0.38%
stereo	0.75%
Signal-to-noise ratio (at 65 dBf)	
mono	53.7 dB
stereo	51.7 dB
Channel separation (at 1,000 Hz)	32.0 dB
Selectivity	
alternate-channel	83.7 dB
adjacent-channel	15.5 dB
Capture ratio (at 65 dBf)	3.0 dB
AM rejection	57.3 dB
Image rejection	61.4 dB
Frequency response	
FM	30 to 15,000 Hz +0.0, -4.2 dB
AM	30 to 3,000 Hz +2.7, -2.6 dB
Maximum output voltage (100% FM modulation)	1.1 volts

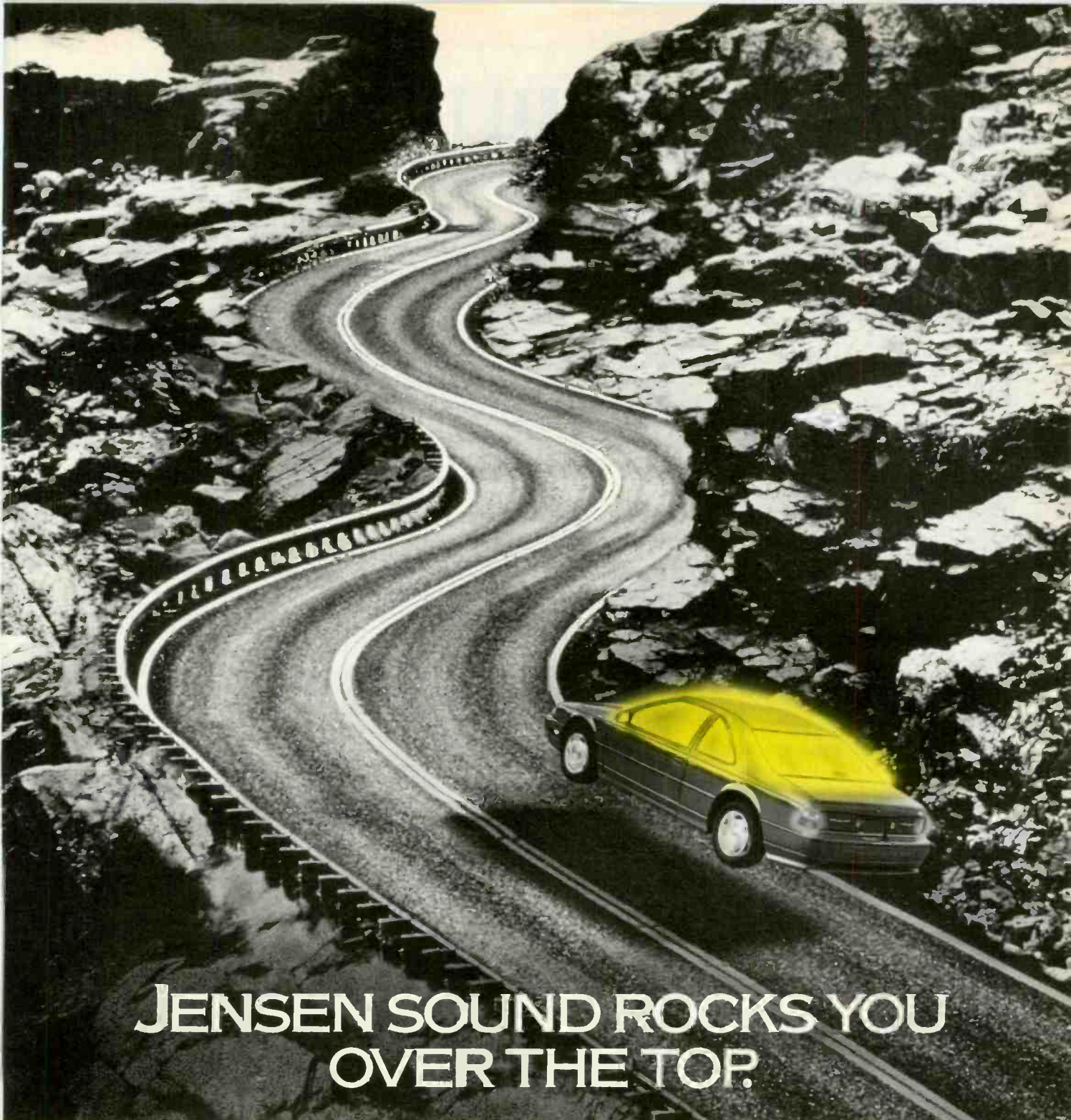
TAPE SECTION

Frequency response (31.5 to 18,000 Hz)	
forward (70- μ s EQ)	+3.9, -3.3 dB
reverse (70- μ s EQ)	+3.7, -4.2 dB
forward (120- μ s EQ)	+1.2, -2.3 dB
reverse (120- μ s EQ)	+1.5, -3.1 dB
Signal-to-noise ratio (A-weighted)	
Type IV (metal), no NR	50.2 dB
Type IV (metal), Dolby B	59.3 dB
Flutter	
wrms	0.09%
IEC/DIN-weighted	0.17%
Speed accuracy	+0.46%
Crosstalk (at 1,000 Hz)	38.2 dB
Channel separation (at 1,000 Hz)	36.1 dB
Fast-forward/rewind time (C-60)	85 seconds

AMPLIFIER SECTION

All measurements made with 14.4-volt DC power and all channels driven into 4 ohms, unless otherwise noted.

1,000-Hz output at clipping	
8 ohms	6.2 watts
4 ohms	3.9 watts
Harmonic distortion (THD + N at 1,000 Hz, 1 watt)	0.38%
Damping factor	5
Frequency response	
	20 to 20,000 Hz +1.3, -2.6 dB
Signal-to-noise ratio (A-weighted, referred to 1 watt)	51.5 dB
Tone-control range	
100 Hz	+11.8, -11.5 dB
10,000 Hz	+12.1, -12.1 dB



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TECHNICAL TALK

BY JULIAN HIRSCH

Do All Speakers Sound Alike?

Of course not! But in spite of the great differences between the sounds of loudspeakers, it is very difficult (perhaps impossible) to define their sound qualities unambiguously to a person who has not heard them demonstrated. This problem plagues reviewers like myself, who would like to be able to describe the specific qualities of a speaker in a meaningful manner.

In some reviews those qualities *are* described, sometimes in great detail. Unfortunately, their readers receive at best a hazy idea of the sound the writer was trying to evoke. Even though I comment on certain sound qualities of the speakers I test, those comments are general and deliberately unspecific. I have been criticized for not telling readers exactly what a given speaker sounded like, but I just don't know of any way to do it.

The problem has two basic roots. Basically, there is no standard set of verbal images to describe sound in precise detail, and it is unlikely that such imagery could be developed. The differences in hearing between individuals are not merely a matter of audiological definition but are also the result of how their brains process the data that arrive from the analog-to-digital converters that are part of the inner ear. In other words, I can never really *know* what you are hearing (and vice versa), any more than either of us can know what the other is thinking.

Of course, there *are* general qualities of sound that do have a fairly universal meaning. The effect of an emphasis or reduction in the levels of different parts of the audio frequency spectrum can be heard and interpreted by most people, and can be described in terms that are meaningful to most of them. Terms such as heavy, shrill, tubby, smooth, etc.

But there is more to the problem of defining a speaker's overall sound character. Apart from what the speaker itself is doing to the sound quality, we have to consider the *listening envi-*

ronment and the *program material*, each of which can have as much to do with what we hear as the speakers.

Unfortunately, a speaker cannot function in isolation from its surroundings. Good or bad, large or small, every speaker performs in a way that is profoundly affected by its surroundings. Because of the uncertainty introduced by this variable, speaker designers and manufacturers try to define a speaker's performance in an *anechoic* (echo-free) environment. The nearest we can come to realizing such an environment is out of doors, high above flat terrain and far from any buildings or other reflecting objects. These requirements can be approximated by placing a speaker on a tower and locating the microphone nearby for measurements of its frequency response and directional characteristics. Obviously, such a measurement setup is impractical in most cases because of weather, winds, and external noises.

An anechoic chamber is usually the closest realizable approximation to an ideal measuring environment. A chamber the size of a large room (and costing as much as a modest house) is essentially anechoic down to perhaps 40 to 50 Hz. Larger chambers, which are rare, may go down to 20 Hz. Measurements of a speaker in an anechoic chamber can give a useful picture of its performance, but not of its sound quality, which is hopelessly dull and lifeless in such an environment.

Various electronic techniques have been developed to try to circumvent the environmental limitation. Known by abbreviations like FFT, MLS, TEF, etc., they make possible reasonably good frequency-response measurements (though still not in the low bass, except in huge rooms). Unfortunately, they tell us little about the *sound* of a speaker, which exists only in the mind of each listener. Furthermore, that sound cannot be quantified or otherwise unambiguously conveyed to another listener. Each of us hears a unique sound.

That brings us to the program material played through a speaker. It is usually music, an art form commonly appreciated in a highly individual manner. What may send you into a rapture may drive me out of the room, and vice

versa. Aside from the music itself, there is the matter of its interpretation and performance. And then there is the recording quality. We all know of lifeless recordings, even of our favorite music, that are simply unlistenable. How can one possibly judge a speaker with such material? Yet, in an imperfect world it is usually necessary to live with less than ideal conditions.

Anyone who has attended events such as the Consumer Electronics Show or a high-end audio show has had the experience of entering a room and hearing magnificent sound, usually through some newly developed speakers, in a room treated with resonance-damping devices. More than once I have tested the same speakers in my own listening room and found them unexciting (or worse).

Possibly my room is not as carefully treated as the one at the show. Probably yours isn't either. In any case, no two rooms are alike acoustically. If something sounds exactly the same in your room as it did in the dealer's demo room, it is only a coincidence.

Try to remember that comparing the sound of different speakers in different rooms (especially with different program material) is a classic example of comparing apples and oranges. Comparing them in the *same* room modifies that only partially. If the two pairs of speakers are not in *exactly* the same location (physically impossible), they will sound different, at least slightly.

When comparing speakers, I find that some will sound very much alike, while others have distinctly different characteristics. With different program material, the situation can change dramatically. The "dull" speaker with Program A can sound crisp and even bright with Program B. Other characteristics (such as imaging) are also affected by program material.

That is why I limit my comments on a speaker's quality to its very broad and general sound characteristics, those least likely to be affected by program material or room acoustics. I recognize that this is not what many people are looking for, but I believe it is all I can do in good conscience. The only way you will ever find out how a speaker sounds in your home is to put it there and listen to it yourself. □



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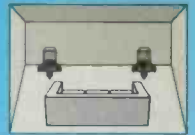
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Live Performance



Conventional Speakers



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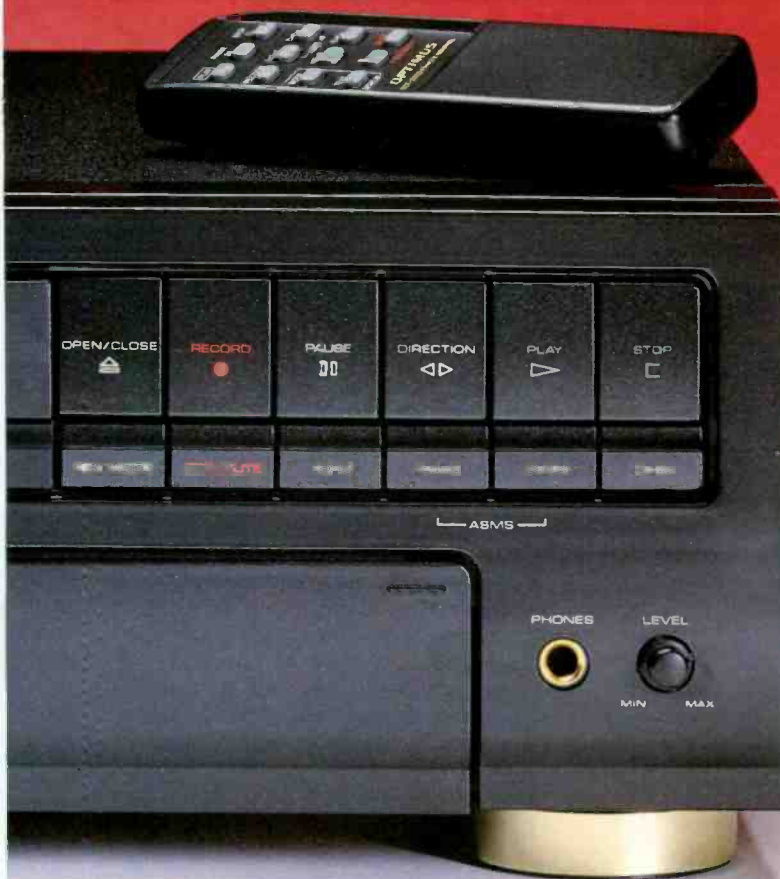
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TEST REPORTS



Onkyo Integra TX-SV909PRO Audio/Video Receiver

JULIAN HIRSCH
HIRSCH-HOUCK LABORATORIES

THE Onkyo TX-SV909PRO, an exceptionally versatile A/V receiver (Onkyo calls it a "tuner amplifier"), is part of the company's Integra line of deluxe audio components. It has seven channels of amplification: front left and right, front enhance left and right (which can be used for ambience enhancement or to operate stereo speakers in another room), rear left and right, and front center.

The TX-SV909PRO incorporates a fully digital Dolby Pro Logic decoder, an Ambisonics decoder for Ambisonic-encoded recordings, and a digital signal processing (DSP) surround-sound system with eight modes simulating various acoustic environments: small and large theaters, small and large concert halls, a recital studio, and more.

The AM/FM tuner section can store up to forty preset station frequencies in six memory banks. There are six sets of video inputs, each with both S-video and composite-video jacks, and audio inputs for phono, CD, and two tape decks. All the signal jacks (except S-video) are gold-plated.

The front panel contains only a row of input-selector buttons, a push-button power switch, a large volume knob, and a multicolor display win-

dow. The window shows the complete operating status of the receiver, much of it in small letters or, in the case of the tone and balance controls, bar graphs. Larger numerals show the tuner frequency and preset channel number. The TX-SV909PRO can also display status information and control menus on a television monitor attached to its video output, greatly simplifying some of the setup and adjustment procedures.

Obviously, a receiver with the versatility of the TX-SV909PRO requires more controls than those visible on the panel. Pressing a small button near the volume knob causes the entire lower portion of the panel to swing down, revealing a number of additional buttons, a stereo headphone jack, and connections for one of the video sources.

Buttons numbered 0 through 9 provide direct access to any tuner frequency, either AM or FM, and also enter and recall any of the preset frequencies. The scan button steps the tuner through the preset channels, playing a few seconds of each. Other buttons activate the main and remote speakers, dim the display in three

Dimensions

18 inches wide, 7½ inches high,
16¼ inches deep

Price

\$1,799

Manufacturer

Onkyo, Dept. SR, 200 Williams Dr.,
Ramsey, NJ 07446

Life's little ups and downs, as we all know, can be quite trying. But when songwriter/guitarist Sara K. sings about them in her sparse folk/rock style, they can be trying for a speaker system as well.

Chesky recording, you can almost feel the musicians in your room.

To capture Sara K.'s coffee-house intimacy, engineer Bob Katz recorded Sara and

her back-up band live, with minimalist miking techniques and no processing in the signal path. If you listen carefully, you can actually 'hear' the recording studio they're performing in.

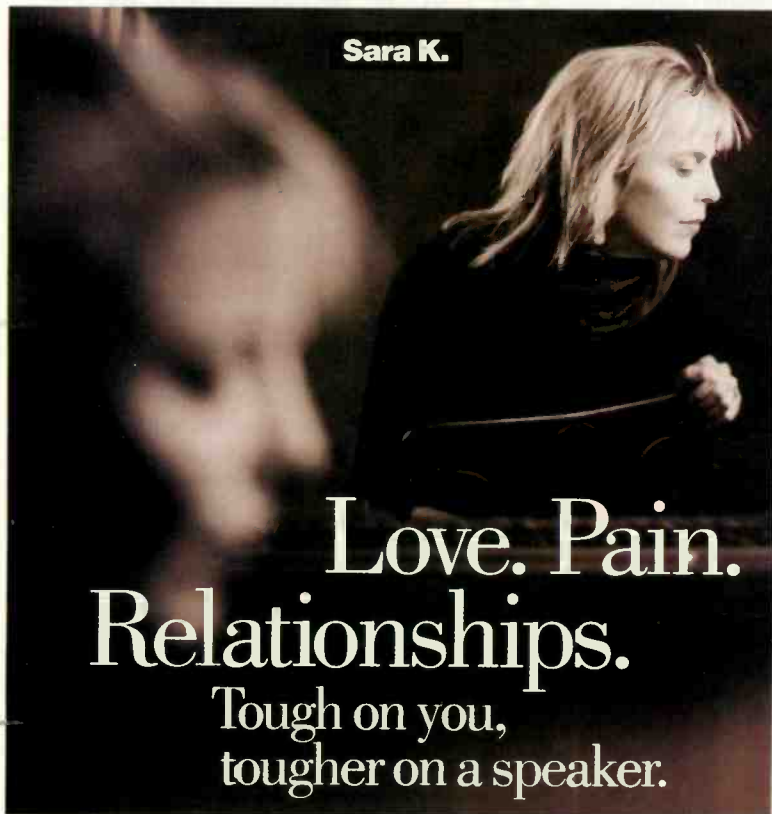
And to combat the gritty edge of some digital recordings, Chesky uses a proprietary Mark III A to D converter with vacuum tubes in the analog stage, and 128x oversampling. Built by George Kaye, it maintains the sweetness of analog

with the clarity of a digital recording.

The result is that Sara's voice blends with her unusual 4-string guitar for a haunting and personal delivery of her ballads and love songs. To hear it for yourself, visit a Boston Acoustics dealer and ask to hear Sara K. on a pair of Boston Acoustics T830 speakers. After all, music this good should be heard on speakers this good.



Our T830 left Stereo Review's Julian Hirsch "enormously impressed... its heritage is unmistakably evident in its superb sound, practical size and proportions, and affordable price."



Why? Well, Sara records for Chesky Records, one of the new breed of 'digital audiophile' labels. And as you might expect, this small New York City label puts a painstaking amount of effort into

how their music is recorded.

In fact, some reviewers have said that if you close your eyes as you listen to a

The T830's 1-inch soft-dome tweeter, 3 1/2-inch midrange and 8-inch woofer are designed, built and tested by us. And they're ideally suited to reproducing Sara K.'s melodic songs.



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TEST REPORTS

stages, activate a Selective Tone circuit to boost lows and highs in two-channel stereo operation, tune up or down the AM or FM band, and switch the FM muting and automatic stereo-selection mode on and off.

Three pairs of buttons, marked SURROUND MODE, PARAMETER SELECTOR, and PARAMETER CONTROLLER, control the receiver in surround-sound operation. The Surround Mode buttons step through the several options (off, Dolby Pro Logic, Theater-1, etc.) in either direction, with the name of the current mode appearing in the display window.

For each mode, a number of parameters (including channel levels, frequency response, delays, hall size and

shape, etc.) can be adjusted to provide the desired effect. The Parameter Selector buttons can be used to verify the status of any parameter, showing it on the display, and the Parameter Controller buttons vary its value. After a selection is made, it remains in the receiver's memory until changed, but the initial (default) values can be restored at any time by a simple "initialize" procedure.

The TX-SV909PRO's main left and right front-channel amplifiers are rated to deliver up to 110 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.04 percent total harmonic distortion (THD). The center channel is rated at 110 watts into 8 ohms at 1,000 Hz with no more

than 0.08 percent distortion. At the same frequency and distortion level, the rear and front enhance channels are rated at 30 watts each.

The supplied infrared remote control is a learning-type system master control, with groups of buttons assigned to a record player, TV tuner, CD or videodisc player, and two VCR's. About half of the buttons on the remote are specifically dedicated to the TX-SV909PRO receiver. In addition to power switching and volume adjustment (the volume knob is driven by a motor when operated remotely), it controls such surround-sound functions as mode selection, delay time, and front/center/rear levels and balance. The sixty-odd buttons on the remote control are grouped functionally and clearly marked.

The many input and output jacks on the rear of the receiver are also logically placed and clearly marked. In addition to the usual electrical inputs, the laserdisc-player inputs include an optical digital audio connector. The insulated binding posts used for the speaker outputs are compatible with single or dual banana plugs as well as wire ends. A group of line-level phono-jack outputs are identified as preamplifier outputs for the main front channels, front enhance channels, rear channels, center channel, and a mono subwoofer (powered through an external amplifier). These preamplifier outputs are active only when the main speaker switch (on the subpanel) is on.

The tuner section has inputs for the supplied AM loop antenna (or a long wire) and a 75-ohm coaxial FM antenna cable. The rear apron also contains terminals for Onkyo's Multiple Room Remote System, which makes it possible to control speakers and various source components in other rooms through the receiver.

The power ratings for the three main front-channel amplifiers proved conservative. They clipped at 136 watts into 8 ohms and delivered 116 watts per channel at 1,000 Hz with 0.035 percent distortion. Output increased almost 50 percent into 4 ohms, indicating substantial current capability. The front enhance channels delivered their rated 30 watts at 0.06 percent distortion, and the rear channels produced only 0.009 percent distortion up to 38 watts output.

The front-channel preamplifier response was flat within +0, -0.2 dB

MEASUREMENTS

TUNER SECTION

All figures for FM only except frequency response; measurements in microvolts, or μ V, referred to 300-ohm input.

Usable sensitivity (mono) 13 dBf (1.25 μ V)

50-dB quieting sensitivity
mono 17 dBf (2 μ V)
stereo 44 dBf (43.6 μ V)

Signal-to-noise ratio (at 65 dBf)
mono 80.5 dB
stereo 79.5 dB

Distortion (THD + N at 65 dBf)
mono 0.073%
stereo 0.088%

Capture ratio (at 65 dBf) 1 dB

AM rejection 58 dB

Selectivity

alternate-channel 55 dB

adjacent-channel 3.5 dB

Pilot-carrier leakage

19 and 38 kHz -66 dB

Hum -74 dB

Channel separation

100 Hz 50 dB

1,000 Hz 53 dB

10,000 Hz 39 dB

Frequency response

FM 30 to 15,000 Hz +0.7, -0 dB

AM 65 to 2,400 Hz +1.1, -6 dB

AMPLIFIER SECTION

All figures for main front channels only, except as noted.

1,000-Hz output at clipping

8 ohms 136 watts

4 ohms 196 watts

Clipping headroom

(relative to rated output) 0.92 dB

Dynamic power output

8 ohms 150 watts

4 ohms 230 watts

Dynamic headroom

(8 ohms, relative to rated output) 1.35 dB

Maximum distortion

(20 to 20,000 Hz into 8 ohms)

main front channels 0.034% (110 watts)

center channel 0.035% (110 watts)

rear channels 0.09% (30 watts)

front enhance channels 0.064% (30 watts)

Sensitivity

(for a 1-watt output into 8 ohms)

CD 16 mV

phono 0.28 mV

A-weighted noise

(referred to a 1-watt output)

CD -80.7 dB

phono -75.8 dB

Phono-input overload

(1,000-Hz equivalent levels)

20 Hz 125 mV

1,000 and 20,000 Hz 130 mV

Phono-input impedance

..... 45,000 ohms in parallel with 57 pF

Tone-control range

100 Hz +9, -10 dB

10,000 Hz \pm 8 dB

Selective Tone response

(referred to 1,000-Hz level)

40-50 Hz +9.5 dB

250-4,500 Hz +1 dB

15,000 Hz +3.3 dB

RIAA phono-equalization error

(20 to 20,000 Hz) +0.5, -0 dB

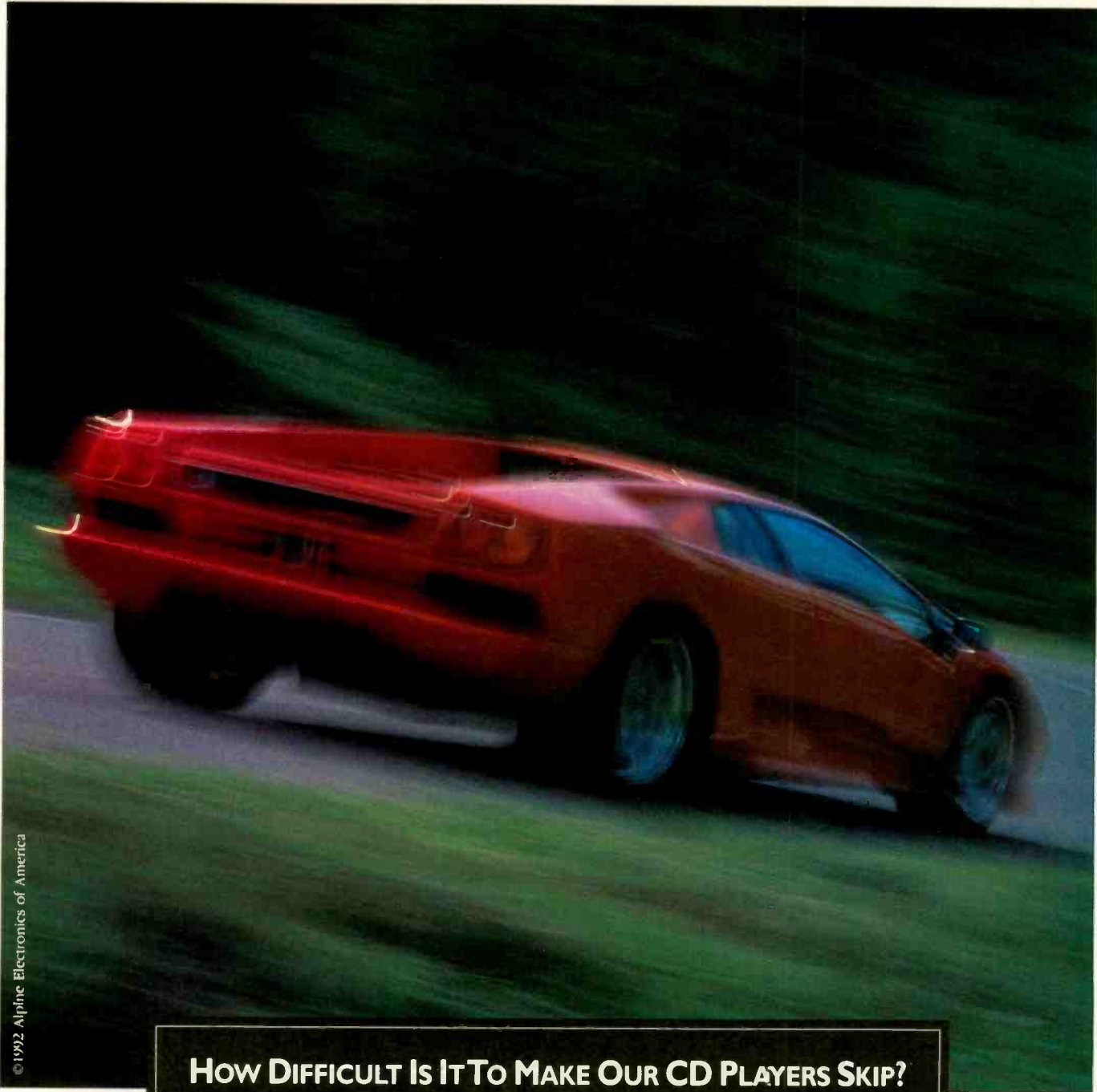
Frequency response

(tone controls centered)

20 to 20,000 Hz +0, -0.2 dB

80,000 Hz -3 dB

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from 20 to 20,000 Hz, rolling off to -3 dB at 80,000 Hz. Tone-control characteristics were good, with a sliding bass-turnover frequency and treble curves hinged at about 2,000 Hz. The Selective Tone feature, which is usable only in stereo mode, boosted the bass output 9.5 dB between 40 and 50 Hz (it fell back to +4.5 dB at 20 Hz) and the treble output 3.3 dB between 10,000 and 20,000 Hz.

The FM tuner section exhibited relatively low sensitivity for a receiver in this class, but its signal-to-noise ratios at full quieting were outstanding. Other aspects of the FM section's performance were uniformly good to excellent in our lab tests.

The Onkyo TX-SV909PRO is unquestionably the most complete and sophisticated—as well as the largest, heaviest (50 pounds), and most expensive—A/V receiver we have yet reviewed. And though it is improbable that any one person would exploit all of its capabilities, merely having them available is likely to be an inducement to experimentation.

Despite its exceptional versatility, the TX-SV909PRO is the simplest A/V receiver we have seen, with the irreducible minimum of three front-panel controls: power, volume, and input selection. Furthermore, although the display window can show the complete status of this complex instrument, the key information (input source or tuner frequency) dominates the display with large, easily visible characters.

We installed the TX-SV909PRO in a basic surround system, with two main speakers in front and a pair of small surround speakers high on the side walls of the room. Its digital surround processor handled the various hall and theater simulations realistically, with the results depending largely on how much patience we exercised in setting the various channel gains. Some of the adjustments, such as the one for hall shape, have rather subtle effects and probably call for more extended experimentation, but even with the default settings the sound was highly satisfactory.

We were especially interested in the receiver's Ambisonic feature. Ambisonics is a recording and matrixing technique that originated in England about twelve years ago. It was claimed to provide a more accurate reproduction of the original sound field than any



of the more widely used four-channel systems, but it never appeared in the United States before the entire "quad" category disappeared from the marketplace.

England's Nimbus Records has continued to make Ambisonic recordings, first on LP and in recent years on CD. The Onkyo TX-SV909PRO is the first component made for U.S. sale we have seen that includes an Ambisonic decoder, and we listened to a number of Nimbus CD's through it.

The results were even more impressive than we had expected. The naturalism and sense of "being there" that

Ambisonics imparted were what I (and many others) had hoped for when quadrasonic systems were in their heyday but never experienced from SQ, QS, or CD-4 recordings. With any ordinary stereo recording, Ambisonic playback added a touch of air and ambience not very different from that provided by any modern surround-sound processor. But with a good Ambisonic recording, the realism was uncanny.

To get the full benefit of any modern surround-sound system, considerable patience is necessary in setting up its many parameters. Fortunately, even a modest enhancement is worthwhile compared with most two-channel reproduction. In view of the investment required for this receiver and a full complement of speakers, I strongly recommend that any buyer study the detailed, forty-five-page instruction manual and experiment with the parameter settings. Don't hesitate to change the settings often. It is probably the best way to discover what is possible and what most appeals to your taste.

So far, the Onkyo TX-SV909PRO is pretty much in a class by itself. Its combination of extreme versatility, attractive and tasteful styling, and unparalleled operating simplicity is matched by a caliber of construction reminiscent of fine laboratory instruments and rarely seen in consumer products. All in all, this is a really great receiver. □





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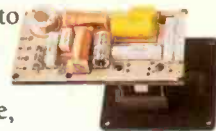
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Camber Laser 7 Loudspeaker System

JULIAN HIRSCH
HIRSCH-HOUCK LABORATORIES

THE Laser 7, made in Canada by Plateau Camber, is one of a series of loudspeakers designed to provide high performance at very affordable prices. Also known as the LS-7, the speaker is a ported two-way system with an 8-inch woofer and a ¼-inch titanium-dome tweeter. The cabinet is braced to minimize box resonances.

The LS-7's woofer, completely hand-built by Camber, has a virgin polypropylene cone with a proprietary rubber surround. The tweeter is also a proprietary design, with its dome and suspension pressed out of a single sheet of titanium. The suspension portion is pleated to provide the necessary compliance. According to Camber, eliminating a separate plastic or rubber surround glued to the dome greatly enhances the uniformity of the tweeter's performance, since its diaphragm resonates no lower than 30,000 Hz. The tweeter's voice coil is ferrofluid-cooled and damped.

Camber says that the excellent com-

patibility of the drivers permits simple crossovers to be used (presumably with 6-dB-per-octave slopes), which results in smooth phase response. The crossover frequency is not specified.

The black grille unsnaps easily, revealing an attractive front panel whose light-gray finish contrasts with the black cabinet exterior. The drivers are mounted flush on the upper half of the panel. The port is on the lower portion of the back panel, together with the recessed connectors, which are gold-plated multiway binding posts on ¾-inch centers.

Dimensions

10 inches wide, 24 inches high,
11 inches deep

Finish

Black-ash vinyl veneer

Price

\$499 a pair

Manufacturer

Camber USA, Dept. SR, 244-20
88th Ave., Bellrose, NY 11426

The LS-7's specifications include a frequency response of 40 to 22,000 Hz and a power-handling capacity of 150 watts. The nominal impedance is 8 ohms, and the sensitivity is rated as 90 dB sound-pressure level (SPL) at 1 meter with an input of 1 watt (2.83 volts).

The Camber Laser Series speakers are all designed to be placed with their tweeters close to the listener's ear level, and Plateau Camber makes stands that will support them at the appropriate height. We used the most suitable stands we had on hand, 7 inches high, during our tests and listening sessions.

The averaged frequency response of the left and right speakers in our room was exceptionally uniform and wide, within ± 3 dB from 50 to 20,000 Hz. There was no indication of the crossover frequency in the frequency-response measurements.

Combining the close-miked response measurements at the woofer cone and port, corrected for their respective diameters, produced a bass-response curve flat within ± 2.5 dB from 25 to 150 Hz, with the maximum at 45 Hz. As often happens, splicing this curve to the averaged room response resulted in a not-quite-believable composite response curve (given the LS-7's size and price). The response rose smoothly below about 300 Hz, to a maximum of about +10 dB at 45 Hz, before falling off at 6 dB per octave.

Surprisingly, however, the sound of the speakers was actually consistent with the composite curve down to about 30 Hz. Most recorded music has little content below about 45 or 50 Hz, but playing portions of some test CD's confirmed that the LS-7 had a clean and *usable* 30-Hz output (the output dropped rapidly below 30 Hz).

A response measurement 1 meter from the speaker with a one-third-octave-bandwidth pink-noise signal showed a ± 2 -dB variation from 120 to 20,000 Hz, with a rise of 6 dB to a maximum from 60 to 100 Hz, followed by a rapid drop below 50 Hz. We made quasi-anechoic response measurements using a variety of techniques. All of them confirmed the LS-7's flat response, with typical variations of less than 6 dB overall from 300 to 20,000 Hz.

The group-delay variation of only about 150 microseconds over the



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range from 650 to 20,000 Hz confirmed the system's excellent phase response. Its tweeter dispersion was also notable, with the treble output 45 degrees off-axis dropping only 2 dB at 13,000 Hz and 9 dB at 20,000 Hz.

The system's minimum impedance was 7.4 ohms at 38 and 150 Hz, with

maximum readings of 42 ohms at 60 Hz and 49 ohms at 1,500 Hz. Impedance was well above the 8-ohm nominal rating over most of the audio range.

Sensitivity measured 89 dB, slightly below the 90-dB rating. With an input of 3.2 volts, corresponding to a 90-dB

SPL, the woofer distortion was about 1 percent or less from 80 to 1,200 Hz, increasing to 3 percent at 2,000 Hz. Distortion rose at lower frequencies, to a maximum of 6 to 9 percent from 40 to 20 Hz. The system handled single-cycle tone bursts nicely. At 100 Hz, the sound took on a slight hardness with a burst equivalent to 125 watts into the speaker's 8.5-ohm impedance. However, the 100-Hz input could be increased to about 700 watts (the point where the amplifier clipped) without driving the 8-inch woofer to its limits. At 1,000 and 10,000 Hz the system absorbed the full power of the amplifier (260 and 720 watts, respectively) without evidence of serious overload (or damage).

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The Camber Laser 7

**had a clean and
usable output down
to 30 Hz.**

The Camber LS-7 sounded as good as its impressive measurements would imply. Its output was smooth, well dispersed, and generally free of the unnatural colorations that mar the sound of many other speakers of all sizes and prices. The overall sound character was slightly warm, which is not surprising in view of the speaker's deep and slightly emphasized bass, but the emphasis was much less than we have heard from many speakers whose true bass limits fell an octave or two short of the LS-7's. In respect to sound staging and imaging, the LS-7 was first-rate, in spite of our having it a bit lower than recommended for optimum results (the tweeters were about 27 inches from the floor).

The LS-7 is a remarkable value. This caliber of performance is rarely found in speakers selling for less than \$500 a pair. The Laser 7 was our first exposure to the Camber line, and it was a real ear opener. Listen to it if you have champagne taste but a beer budget—it could help you get a lot more listening pleasure for your money than you may have expected. □



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TEST REPORTS



Yamaha CDC-835 CD Changer

JULIAN HIRSCH
HIRSCH-HOUCK LABORATORIES

THE Yamaha CDC-835 is a high-performance CD changer whose front-loading carousel holds up to five discs. Its PlayXChange feature isolates the disc being played in order to eliminate vibration and to enable the carousel to be opened without interrupting play; as many as four discs can be replaced while a fifth is playing. When the carousel is opened, it extends 10¼ inches from the front panel, providing easy access for loading and unloading discs.

The player's digital-to-analog (D/A) conversion is performed by Yamaha's version of a single-bit pulse-density-modulation system, which the company calls S Bit Plus. Yamaha says that it provides more accurate and stable signal conversion and low-level linearity than other single-bit systems.

The CDC-835 normally presents an uncluttered panel. Visible controls include pushbuttons for power, play/pause, stop, open/close, and PlayXChange. The Disc Skip button advances the carousel by one disc position, and five small numbered buttons are used to select a disc directly. A center-pivoted button varies the output level at both the front-panel head-

phone jack and the rear line-output connectors.

An unusual feature of the CDC-835 is its digital equalization (DEQ) system, providing four frequency-response curves in addition to the normal flat response. The curves are labeled (with identifying lights) Classic, Vocal, Jazz, and Rock, and they are selected by a button labeled DEQ.

The disc tray extends across most of the top of the panel. The display window below it normally shows the numbers of the loaded discs and the one being played as well as the current track number and its elapsed time. Other status displays, such as programming modes, total time on disc, and so forth, appear as required.

Next to the display is a hinged panel

Dimensions

17½ inches wide, 4¼ inches high,
15¼ inches deep

Price

\$549

Manufacturer

Yamaha Electronics Corp., Dept. SR,
6722 Orangethorpe Ave.,
Buena Park, CA 90620

that swings down when pressed, revealing twenty-one small pushbuttons for programming, direct track access, fast search, and track skipping. Keeping them out of sight during normal operation simplifies the appearance of the CDC-835 without limiting its versatility.

On the rear apron are line-output phono jacks, a coaxial digital output, and several connections dedicated to another of the player's novel features, Relay Play, which enables two CDC-835's to be linked to provide a ten-disc playing capacity. When linked, the two machines act as one so far as programming is concerned.

The CDC-835 comes with an infrared remote control that includes all its front-panel functions (except power switching) and also has a display dimmer, duplicate Disc Select buttons for the second player in Relay Play mode, and an index-selector button.

In our tests, the Yamaha CDC-835 delivered normal output levels, and the volume with medium-impedance headphones was good. Its frequency response was extremely flat from 20 to 4,000 Hz, rising to a small peak of +0.2 dB at 14,000 Hz and returning to +0.05 dB at 20,000 Hz. Response error of the de-emphasis network (which engages automatically whenever a disc recorded with treble pre-emphasis is played) was less than 0.28 dB up to 16,000 Hz.

Turn Your Stereo Into An All-Out Dolby Surround Pro-Logic System.



NEW FROM CAMBRIDGE SOUNDWORKS

Our new PL100 Dolby Pro Logic decoder with 3-channel amplifier; magnetically shielded Center Channel speaker; The Surround II dipole radiating surround speakers. Factory-direct price, \$799.

Until now, adding Dolby Surround to a stereo system has been complex and expensive. Add-on decoders were inadequate, costly, and often required separate amplifiers. We've changed all that with our affordable, high performance Pro Logic Add-On Systems.

Both systems are centered around our new PL100—a Dolby Pro Logic decoder with three channels of amplification (40 watts to the center channel, 15 watts to the surround channels) and a wireless remote. Its built-in signal generator enables precise balancing of the left, center, right and surround speakers. The signal delay applied to the surround channel is selectable for room size. Other controls include master volume, rear

\$799 Dolby Pro Logic Add-On System.

The center channel speaker in our \$799 Dolby Pro Logic Add-On System is our new magnetically shielded Center Channel (see ad on following page). The rear/side speakers are a pair of The Surround™ II. Unlike any other surround speaker in its price range, The Surround II uses advanced dipole radiator technology. Properly mounted on the side walls of a listening room, their high frequency drivers direct out-of-phase sound signals towards the front and rear of the room. The sound then reflects off the surfaces in the room, finally reaching listeners from all directions, "surrounding" them with sound.

Because the drivers are out of phase with each other, they create a null area directly in front of the speakers, so listeners can't pinpoint the source of the sound. The result is surround sound the way it was meant to be heard.

\$999 Dolby Pro Logic Add-On System.

Our \$999 Dolby Pro Logic Add-On System combines

the PL100 with our new low-profile Center Channel Plus speaker and our highly acclaimed surround speaker, The Surround. Center Channel Plus is a magnetically shielded

speaker with four 3" long-throw woofers and a ring radiator tweeter. Because of its wide, low profile (25" wide, 4" high, 6½" deep), it is ideal for placement directly on top of, or, with optional support unit, *beneath* a TV. The frequency range of the outer pair of 3" woofers is intentionally limited to maintain proper dispersion. We don't know of any speaker, at any price, that outperforms Center Channel Plus.

The surround speakers in this system are The Surround, a dipole radiating speaker with higher volume level capability than The Surround II. We feel The Surround is one of the very best surround speakers made, despite the fact that it costs hundreds less than competing models.

So if you already own a fine stereo system, TV and VCR, why not create an all-out home theater with one of our Dolby Pro Logic Add-On Systems?

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CIRCLE NO. 6 ON READER SERVICE CARD



Our new PL100 Dolby Pro Logic decoder with 3-channel amplifier; low profile Center Channel Plus speaker; The Surround dipole radiating surround speakers. Factory-direct price, \$999.

and center level, and a Phantom mode enabling the use of the PL100 without a center speaker. Purchased separately, the factory-direct price of the PL100 is \$399.

TEST REPORTS

We also measured the response for each of the digital EQ settings. The Classic response was emphasized about 5 dB at 70 and 7,000 Hz, leaving the range from 150 to 3,000 Hz essentially unaffected. With the Vocal setting, there was a 5-dB emphasis from 400 to 500 Hz and a 4-dB peak at 5,000 Hz. The Jazz response boosted the output by 4 dB from 50 to 200 Hz and at 9,000 Hz. Finally, the Rock setting had a similar effect (+5 dB) in the low range and at 6,000 Hz.

With respect to channel separation, distortion, and D/A conversion linearity, the CDC-835 ranks among the best CD players we have tested, whether single-play or changer. The measurements we obtained for noise and dynamic range were especially noteworthy. The wide-band A-weighted noise reading was only -114.7 dB. A spectrum analysis of the noise showed readings typically between -120 and -130 dB from 20,000 Hz down to 50 Hz and -140 dB at 20 Hz. Power-line hum was only about -120 dB at both 60 and 120 Hz. Dynamic range was 112 dB, and the quantization-noise level was -97 dB.

Slewing time between tracks and disc-change times were good, and the mechanical action of the changer was very quiet—audible in a quiet room



but not at all distracting. The player's impact resistance was also good—it required a moderate slap on the top or a firm fist blow on the side to induce mistracking. It was able to track 750-micrometer disc errors on the Pierre Verany #2 test disc without audible problems, but it shut down abruptly on 1,000-micrometer errors.

The Yamaha CDC-835 is not only one of the most versatile CD changers we have seen, but it also delivered excellent performance in almost every

respect. Yet despite its many capabilities, it presents an undaunting appearance, especially with its lower control panel closed. It would be hard to find an easier-to-use CD player for simply listening to one or more discs from beginning to end. Some study of the manual and hands-on experience are necessary to fully appreciate its capabilities, but the effort will be amply rewarded.

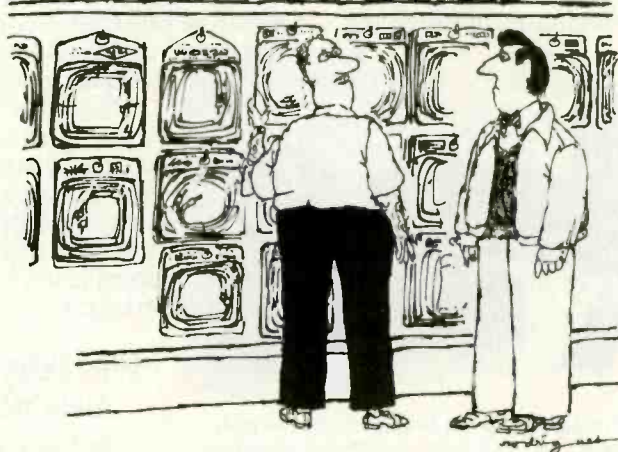
The only feature of the CDC-835 that we did not find useful was its digital equalization. The response modifications were mild enough that they would not seriously degrade most program material, but we prefer to listen to our CD's "straight," with a minimum of response modification. Of course, one can simply leave the DEQ feature off (as we did after some experimenting) and be none the worse for its inclusion.

The CDC-835 is not cheap—its price is a little more than twice that of the Technics SL-PD827 we reviewed last month, for example. But in comparison with this Yamaha changer, the Technics has a somewhat insubstantial feel to it, fewer features, and, in general, lower performance. You're just not likely to find the CDC-835's overall quality in less expensive changers. □

MEASUREMENTS

Maximum output level	1.98 volts
Frequency response	+0.2, -0.04 dB, 20 to 20,000 Hz
Channel separation	
100 Hz	125 dB
1,000 Hz	110 dB
20,000 Hz	65 dB
Maximum interchannel phase shift	
5 Hz	0.2°
Signal-to-noise ratio (A-wtd.)	114.7 dB
Dynamic range	112 dB
Distortion (THD+N)	
1,000 Hz (-70 to 0 dB)	0.0018%
20 to 20,000 Hz (0 dB)	0.002 to 0.0045%
Linearity error	
(-60 to -90 dB)	<0.4 dB
Defect tracking	
(Pierre Verany #2 test disc)	750 μm
Impact resistance	
top	B
sides	A
Cueing accuracy	A
Slewing time	2 seconds
Disc-change time	5 to 7 seconds

EXOTIC WIRE WORLD



"Do you plan to lay your speaker wires east and west, sir, or north and south?"

NEW FROM CAMBRIDGE SOUNDWORKS

Our new Center Channel and Center Channel Plus speakers are magnetically shielded, so they won't cause video interference, even when placed very near a TV screen.



Our New Center Channel Speakers Deliver Optimum Pro Logic Performance At Factory-Direct Prices.

We're pleased to announce two new speakers designed by Henry Kloss specifically for use as center channel speakers in Dolby Surround Pro Logic systems—the Center Channel and Center Channel Plus. Our experience with Dolby Surround Pro Logic systems has shown that the center channel is *very* important. A significant portion of movie soundtracks is directed to the center channel. It's very important to use a speaker that reproduces that material



accurately, with the proper volume level and dispersion pattern.

Center Channel by Henry Kloss.

Center Channel is a compact, two-way acoustic suspension speaker with a 4" woofer and a ring radiator tweeter. Because of its compact size (8½" x 5¼" x 4"), it's simple to place Center Channel directly on top of or below your TV screen, so that dialog and sound effects will seem to emanate from their on-screen source.

Center Channel is well shielded magnetically so that it can be placed very close to your TV without causing video interference. Acoustically identical to our Ensemble satellite speakers, it's ideal for center channel use in a Pro Logic system. The factory-direct price of Center Channel is \$149.

Center Channel Plus by Henry Kloss.

The Center Channel Plus is a larger speaker recommended for achieving theater-like playback levels in the most sophisticated and powerful home theater systems. It uses

four 3" long-throw woofers and a tweeter that perfectly matches the acoustics of our Ensemble® and Ensemble II systems. The frequency range of the outer pair of 3" woofers is intentionally limited to maintain proper dispersion characteristics.

Because of its wide, low profile (25" wide, 4" high, 6½" deep), Center Channel Plus is ideal for placement directly on top of or, uniquely for a product of its type, *beneath* a TV—with optional support unit, it can act as a base for your TV. We don't know of any speaker, at any price, that outperforms Center Channel Plus. The factory-direct price of Center Channel Plus is \$219.

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Place our low-profile Center Channel Plus above your TV or, with optional support, use it as a base for your TV.

TEST REPORTS



Clearfield Continental Loudspeaker System

JULIAN HIRSCH
HIRSCH-HOUCK LABORATORIES

COUNTERPOINT Electronic Systems, Inc., best known for its high-quality electronic audio components, recently introduced the Clearfield loudspeaker line.

The first Clearfield speaker system, the Metropolitan, is large, heavy, and expensive (\$6,000 a pair), though with quality to match its other characteristics. The new Clearfield Continental is somewhat smaller and considerably less expensive, using the same basic drivers as the Metropolitan but without its two 8-inch subwoofers.

The Continental is an attractive, fairly large floor-standing system with the cross section of a truncated triangle. The cabinet is attractively finished

on all visible surfaces, and each speaker weighs about 86 pounds (100 pounds in its shipping carton). The speaker drivers are mounted on a 1-

Dimensions

50 inches high, 17 inches wide,
9½ inches deep

Finish

Natural walnut, light oak,
or black oak veneer

Price

\$3,000 a pair

Manufacturer

Counterpoint Electronic Systems, Inc.,
Dept. SR, 2281 Las Palmas Dr.,
Carlsbad, CA 92009

inch-thick board, which is bonded rigidly to the upper part of the cabinet front to give them a full 2-inch-thick mounting surface. The driver complement consists of two 6½-inch woofers with damped polypropylene cones and butyl-rubber surrounds, crossing over at 2,600 Hz to a 1-inch aluminum-dome tweeter with a vented cavity.

Counterpoint says that the enclosure's bass-loading system uses a one-eighth-wavelength air column (at an unspecified frequency) ported at the bottom of the rear panel. As shipped, each speaker has a foam-rubber plug in its port, with a 1-inch-diameter hole through its central axis. The plug can be removed to increase the port diameter to a full 3 inches, thereby changing the enclosure's "Q" from approximately 0.5 to 1.0. This enables a user to adjust the low-bass response to suit the characteristics of the room and the speaker placement.

According to the manufacturer, the crossover network uses a third-order (18-dB-per-octave) design that has been computer-optimized to include the driver reactances as part of the network. High-quality components are used throughout.

The cabinet, made of 1-inch-thick fiberboard, is inherently rigid by virtue of its shape, and it is further stiffened by internal braces under compression from the cabinet sides. Counterpoint says the angled shape minimizes internal standing waves and provides, together with the narrow front panel and rounded rear corners, an optimum dispersion pattern for realistic imaging.

Imaging is further enhanced by the symmetrical placement of the drivers, with the tweeter between and equidistant from the woofers. The speaker board is covered with felt to reduce diffraction from its edges, and the removable black grille cloth has a sturdy wooden frame that fits snugly against the edges of the speaker board and effectively places the speaker's radiating surfaces, grille cloth, and cabinet front in the same plane. The Continental system is constructed in matched pairs, with each tweeter located about 1½ inches inboard of the center line of its two woofers.

The input connectors, recessed into the rear panel, are five-way gold-plated binding posts. Separate inputs (with removable bonding straps) are provided for the tweeter and woofer,

PHOTO: JOOK P. LEUNG

The Powered Subwoofer That Has The Audio And Video Press Jumping Out Of Their Seats.

NEW FROM CAMBRIDGE SOUNDWORKS

A jet roaring in *Top Gun*. The heavy-footed killer robot in *Robocop*. A semi hitting concrete after a 20 foot fall in *Terminator 2*. These are examples of the substantial, very low-frequency effects on the soundtracks of today's movies. Such frequencies are rare in music, and are beyond the capabilities of most speakers designed for music.

The new Cambridge SoundWorks Powered Subwoofer by Henry Kloss was created to reproduce those ultra-low, ultra-strong bass signals with the power and impact you would experience in movie theaters with the very best sound systems. It's designed to *supplement* (not replace) the subwoofer(s) of Ensemble or Ensemble II. It will also work with speakers from other companies.

Remarkable bass performance.

The Powered Subwoofer consists of a heavy duty, 12 inch long-throw acoustic suspension woofer integrated with a 140



watt amplifier—all in a high-pressure black laminate cabinet. Its control panel includes a bass level control and an 18dB per octave, four-position electronic crossover frequency selector (to match the subwoofer to your other speakers).

Additionally, an optional electronic crossover* will provide 18 dB per octave,



Powered Subwoofer



Slave Subwoofer

high-pass, line-level filters for the main and center amplifiers. These filters allow you to keep strong, low frequencies of sound effects out of the front speakers. These signals can cause distortion, even in speakers designed for full-range music.

The Powered Subwoofer's bass performance is simply *awesome*. It reproduces accurate bass to below 30 Hz. You'll hear soundtracks the way they were meant to be heard. In fact the bass is *better* than most



Our Ultimate Home Theater Speaker System consists of our dual-subwoofer Ensemble system; our low profile Center Channel Plus speaker; a pair of our critically acclaimed surround speakers, The Surround; our Powered Subwoofer; our Slave Subwoofer. Factory-direct price: \$1,999.

theaters! At the press event when we introduced our Powered Subwoofer, we had startled members of the audio and video press literally "jumping out of their seats" during demonstrations of movie soundtracks. The factory-direct price of the Powered Subwoofer is \$599.

Optional "slave" subwoofer.

For all-out home theater performance, you can add our optional Slave Subwoofer, which is identical to our Powered Subwoofer except that it lacks the amplifier and controls. It uses the amplifier and controls built into the Powered Subwoofer. Amplifier output jumps from 140 to 200 watts when the Slave Subwoofer is connected.

The combination of the two speakers can reproduce a 30 Hz signal cleanly to a sound pressure level of over 100 dB in a 3,000 cubic foot room! That's enough clean, deep bass for the largest home theaters, and the most demanding listeners. The factory-direct price of the Slave Subwoofer is \$299.

No compromises. No apologies.

The combination of our Ensemble speaker system, Center Channel Plus speaker, The Surround rear/side speakers, Powered Subwoofer and Slave Subwoofer (see photo at left) creates a home theater speaker system that we believe is the best of its kind.

Although you can spend thousands more on competing systems, we don't know of *any* that outperform this \$1,999 package. If you'd like more information, a free catalog or our new booklet, "Getting The Most From Your Dolby Surround System," call our toll-free number any time.

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CIRCLE NO. 6 ON READER SERVICE CARD

The Critics Love Ensemble And Ensemble II. What's The Difference, Anyway?

Cambridge SoundWorks changed the audio world when we began direct-marketing Ensemble® by Henry Kloss. Ensemble is a revolutionary dual-subwoofer/satellite speaker system offering all-out performance, without cluttering up your room with huge speaker cabinets. Available *only* factory-direct from Cambridge SoundWorks, with no expensive middle-men, Ensemble is priced at hundreds less than it would have sold for in stores. *Audio* magazine says Ensemble "may be the best value in the world."

And Then There Were Two.

Now Cambridge SoundWorks has introduced Ensemble II, a more affordable version of Ensemble using only one cabinet to hold both subwoofer drivers. Ensemble II has joined Ensemble in the ranks of the country's best-selling speak-



The real difference is in the subwoofer.

ers. We believe Ensemble II is a better system than the new Bose® AM-5 Series II. And because we sell it factory-direct, it's half the price. *Stereo Review* said "Ensemble II performs so far beyond its price and size that it can be compared only with much larger speakers at substantially higher prices." We agree with the writer who said, "It's hard to imagine going wrong with Ensemble." The question is, which Ensemble system is right for you?

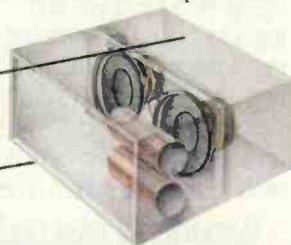
The Same Satellite Speakers.

When you listen to either Ensemble system, almost 90% of the music you hear is being reproduced by the satellite speakers. Both Ensemble and Ensemble II use satellite speakers that are virtually identical.*

Unlike many competing systems, Ensemble's satellites are true two-way speaker systems, each containing a high performance tweeter and a 4-inch woofer. *Stereo Review* said, "The Ensemble satellites delivered a smoother output than

True acoustic suspension, sealed subwoofer cavity.

Cavity acts as acoustic band-pass filter.



"Ensemble may be the best value in the world."
Audio



many larger and more expensive speakers."

Small (8½"×5¼"×4") and unobtrusive, they'll fit into the decor of any room. They're available in scratch-resistant gunmetal grey Nextel, or primed so you can paint them any color you wish.



Ensemble satellite speakers are available primed for painting, so they can match your decor exactly.

The Same Overall Sound.

In many rooms, Ensemble II sounds virtually the same as Ensemble, especially when Ensemble's two subwoofers are placed right next to each other. The real difference between the two systems is that Ensemble, with its two ultra-compact subwoofers (12"×21"×4½"), gives you *ultimate placement flexibility*.

The Same Attention To Detail.

Ensemble and Ensemble II are constructed with the very best materials and no-compromise workmanship. Their subwoofers use heavy-duty woofers in true acoustic suspension enclosures. The satellites are genuine two-way systems with very high quality speaker components. Individual crossover networks are

built into every cabinet for maximum wiring flexibility. Robust construction is used throughout, featuring solid MDF cabinets and solid metal grilles.

The Same Factory-Direct Savings.

Cambridge SoundWorks products are available *only* factory-direct. By eliminating the middle-men, we're able to sell Ensemble and Ensemble II for hundreds less than if they were sold in stores.

The Same 30-Day Total Satisfaction Guarantee.

Choosing a loudspeaker after a brief listen at a dealer's showroom is like deciding on a car after one quick trip around the block. So we make it possible to audition our speakers the *right way*—



Stereo systems featuring Ensemble and Ensemble II speakers with Pioneer or Philips electronics start at only \$799, including CD player. Dolby Surround Sound systems start at only \$999.

in your own home. You get to listen for hours without a salesman hovering nearby. If within 30 days you're not happy, return your speaker system for a full re-

fund. We even reimburse original UPS ground shipping charges in the continental United States.



The only difference in satellites is that the original Ensembles use gold-plated connectors that allow use of even the heaviest gauge wire.

The Real Difference: The Ultimate Placement Flexibility Of Dual Subwoofers.

Placement of bass and high-frequency speakers in a room—and how those speakers interact with the acoustics of the room—has more influence on the overall sound quality of a stereo system than just about anything. As an alternative to spending hundreds (or thousands) of dollars on this or that "latest" amplifier or CD player design, you should invest some of your time experimenting with various speaker positioning schemes. Ensemble's two ultra-slim (4½") subwoofers give you more placement flexibility than any speaker system we know of (including Ensemble II), and is most likely to provide the performance you want *in real world...in-your room*.

How To Order.

The dual-subwoofer Ensemble system is available in two versions. With handsome black-laminate subwoofers for \$599. Or with black vinyl-clad subwoofers for \$499. Ensemble II is priced at \$399. For more information, a free 48-page catalog, or to order...

CALL 1-800-FOR-HIFI

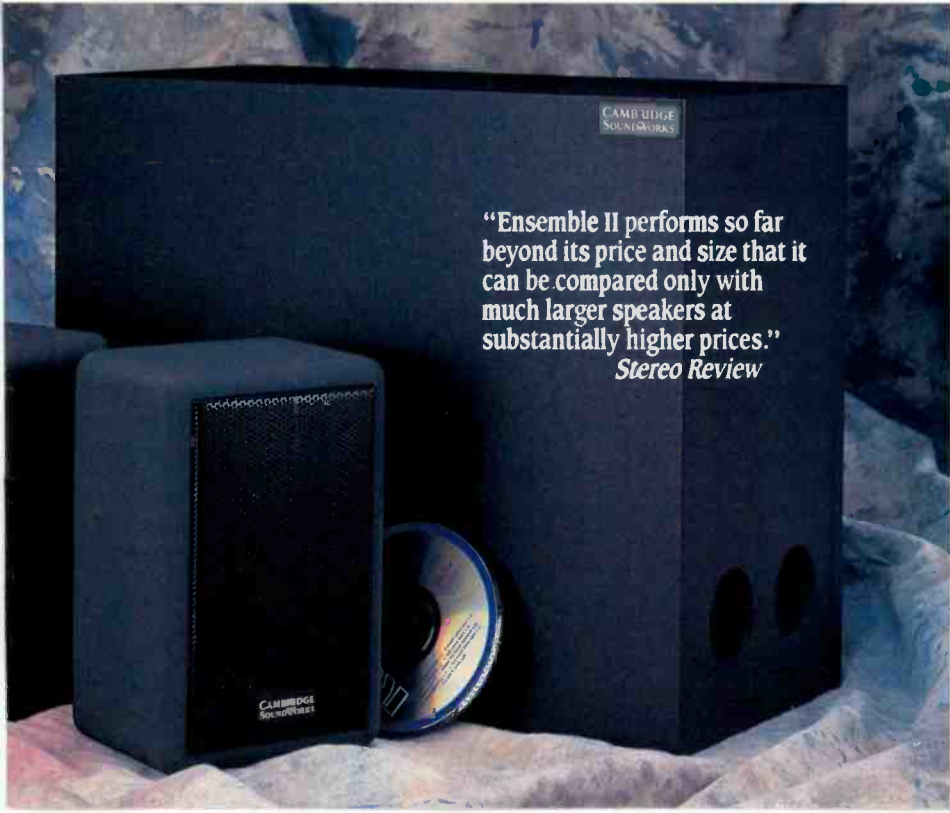
24 hours a day, 365 days a year. We'll send you our 48-page color catalog with stereo and surround sound components and systems from Cambridge SoundWorks, Pioneer, Philips, Denon and others. Because we sell factory-direct, eliminating expensive middle-men, you can save hundreds of dollars.

We Know How To Make Loudspeakers.

CAMBRIDGE SOUNDWORKS

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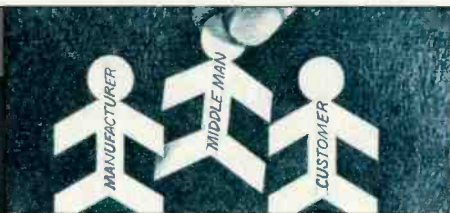


"Ensemble II performs so far beyond its price and size that it can be compared only with much larger speakers at substantially higher prices."
Stereo Review

TEST REPORTS

No Other Loudspeaker Company Can Run This Ad.

Cambridge SoundWorks is a new *kind* of audio company, with factory-direct savings, and much, much more...



Audio Hall of Fame member Henry Kloss.
Cambridge SoundWorks products are designed by our co-founder, Henry Kloss, who created the dominant speakers of the '50s (AR), '60s (KLH) and '70s (Advent).

We eliminated the expensive middle-men.
By selling factory-direct to the public, we eliminate huge distribution expenses. Don't be fooled by our reasonable prices. Our products are very well designed and made.



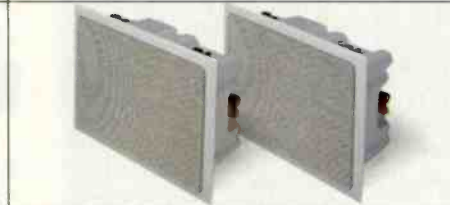
Five year limited parts and labor speaker warranty.
All of our speakers are backed by a five year parts and labor warranty. In some cases, we'll even send you a replacement speaker before we've received your defective unit.

NEW: The Cambridge SoundWorks Charge Card.
Qualified customers can now charge items from our catalog—without tying up the credit lines of their other charge cards. Call for your application today!



High performance dipole radiating surround speakers.
The Surround (\$399 pr) & The Surround II (\$249 pr) use dipole radiator technology for surround sound the way it was meant to be heard. Hundreds less than competing speakers.

NEW: Model Eleven A transportable component system.
The same high performance of the original, in a smaller package. Carrying case doubles as system subwoofer. Works on 110, 220 & 12 volts. Introductory price \$599.



Ambiance ultra-compact speaker system.
We think Ambiance is the best "mini" speaker available, regardless of price. Bass and high-frequency dispersion are unmatched in its category. \$175-\$200 each.

Ambiance In-Wall high performance speaker system.
We don't know of any other in-wall speakers that match its performance, value and ease of installation. Includes acoustic suspension cabinet, gold plated speaker terminals. \$329 pr.

Call 1-800-FOR-HIFI for a free 64-page catalog with components and systems from Cambridge SoundWorks, Pioneer, Philips, Sony, Denon and others.

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for convenience in biwiring or biampifying, although it is not possible to bypass the crossover network.

The system's ratings include a nominal impedance of 4 ohms and a sensitivity of 87 dB sound-pressure level (SPL) at 1 meter with a 2.83-volt input. Its frequency response is rated as 31 to 25,000 Hz ± 3 dB, and the system is recommended for use with amplifiers rated between 50 and 200 watts per channel. The peak sound-pressure level from the Continental is given as 110 dB with normal room gain.

We placed the two Clearfield speakers about 8 feet apart and 3 feet in front of a wall. We left the foam plugs in place in the port openings for most measurements and listening tests, although we measured the close-miked port response with and without them.

The averaged room response from the two speakers showed the usual amount of irregularity from room-boundary reflections. The close-miked port response clearly showed the effect of the plug. With it in place, the output was at its maximum between 40 and 80 Hz, falling by 7 dB at 20 Hz; removing the plug produced a rising response down to 20 Hz, exceeding the output with the plug by several decibels below 100 Hz and a maximum of 12 dB at 20 Hz.

As a rule, combining a speaker's port and cone outputs produces a somewhat optimistic view of its actual audible bass response in a room. In this case, the combined bass response of the cones and port appeared to be flat within ± 2.5 dB from 20 to 300 Hz and within 2.5 dB overall from 300 to 1,600 Hz (above which a close-miked measurement is no longer meaningful). As our ears confirmed, the Continental's bass response is excellent, very solid to just above 30 Hz, but not quite *that* good.

Combining the bass-response and room-response curves yielded a composite response that conformed quite well to what we heard from the speakers. The frequency response measured with a stepped one-third-octave band of pink noise conformed well to the shape of the composite curve except for a fall-off at very low frequencies, to -10 dB at 30 Hz. Present in all our response measurements was a dip of about 5 dB at 2,300 Hz and a rising output above 6,000 Hz, to a maximum of +6 dB at 13,000 Hz.

The tweeter's horizontal dispersion

45 degrees off the forward axis was good, although it was quite different in the two directions. Facing away from the other speaker, toward the side wall of the room, there was a notch of about 6 dB at 2,300 Hz (apparently associated with a crossover effect). In the opposite direction, toward the other speaker, there was little difference below 7,000 Hz, about 5 dB at 10,000 Hz, and 13 dB at 20,000 Hz.

Sensitivity was 89 dB, slightly higher than rated. With a 3.19-volt input (equivalent to a 90-dB SPL), the woofer distortion was between 0.3 and 0.5 percent over most of the audio range from 80 to 1,500 Hz, increasing to 4.5 percent at 40 Hz and 9 percent between 20 and 30 Hz.

Impedance was a minimum of 5 ohms at 20 and 120 Hz, rising to 9 ohms at 60 Hz and 20 ohms at 3,000 Hz. The impedance characteristic below 100 Hz did not change significantly when the port plug was removed. The group delay was constant within 200 to 300 microseconds in the tweeter range, from 2,500 to 20,000 Hz, and increased by about 1 millisecond at 2,500 Hz, the upper end of the woofer's range.

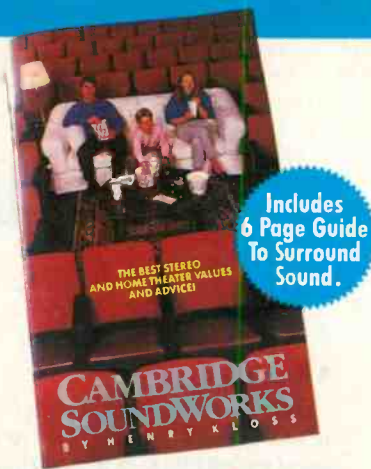
The Continental handled high-power single-cycle tone bursts easily. At 1,000 and 10,000 Hz, the amplifier clipped (at 415 and 800 watts, respectively) before the output of the speaker was seriously distorted. At 100 Hz, the woofers began to sound hard at two or three hundred watts, but the speaker cones did not actually reach their

physical limits until the power exceeded 450 watts.

Overall, the Clearfield Continentals had an effortless, seamless sound quality, with a slight tendency toward warmth in the lower midrange and upper bass. The sound stage was somewhat distant, and comparisons with several more conventional speakers suggested that the Continental's highs might be a bit soft. On the other hand, the measurements showed that the highs were very much present, perhaps even a bit accentuated above 10,000 Hz.

Our best guess is that the upper-midrange dip in the vicinity of the crossover, combined with the slightly emphasized upper bass, contributed to the subjective character of the speaker's performance. Whatever the cause, we found that after a brief exposure to its sound, other speakers seemed too bright and forward (a very normal effect). Furthermore, the Continental's ease and naturalness gave it an especially listenable quality.

We were impressed by how deep into the low bass those two 6½-inch drivers could go. A room-filling 31.5 Hz from a test CD confirmed Counterpoint's claims. This is one speaker that hardly needs a subwoofer to do justice to the lower octaves. If you must have even more extended bass response, you might consider its larger relative, the Clearfield Metropolitan. It has the same woofers and tweeter as the Continental, plus a pair of 8-inch subwoofers. □



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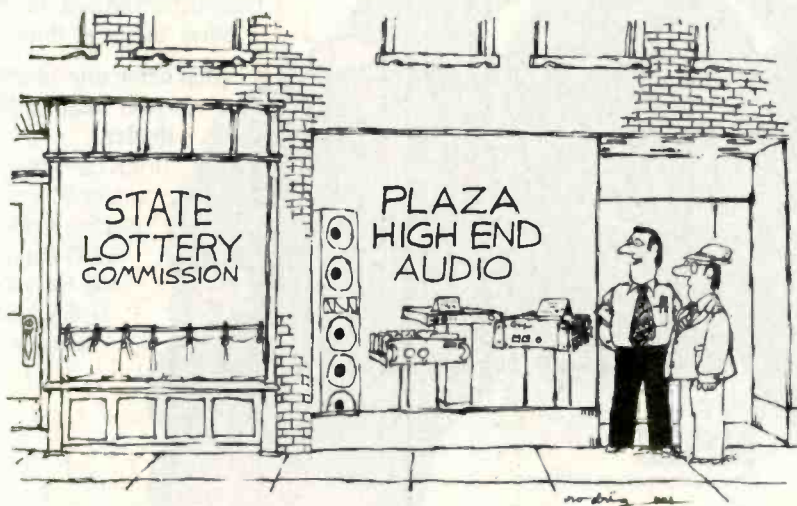
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S HIGH-POWER AMPLIFIERS

PHOTOS BY DAN WAGNER

At one time, amplifiers capable of delivering 200 watts or more per channel were likely to be used only by dyed-in-the-wool audiophiles who were willing and able to make the sizable investment these heavyweights required. Not everyone appreciated or wanted the power that is sometimes needed to reproduce the brief but large musical peaks that can occur even at moderate average listening levels. As compact discs began to supersede LP's and tapes as music sources, their greater dynamic range increased the need for higher-power amplifiers in home music systems, and the trend to home theater and the increasing use of subwoofers have started people thinking about high power who would not have thought about it previously. Simultaneous advances in

BY
JULIAN
HIRSCH





THE GFA-585—the largest, heaviest, most powerful, and most expensive amplifier in this group—is a “limited-edition” model developed to commemorate Adcom’s tenth anniversary. It is essentially a pair of the company’s

GFA-565 mono amplifiers in a single package. Its front panel contains a large rocker-type power switch, three small LED indicators for the protection systems, and a serial-number plate.

The GFA-585’s instruction man-

ual is very complete, including a circuit description. Adcom says that the amplifier is designed to deliver very high currents to complex speaker loads, and each output stage has ten bipolar transistors. No electronic limiting cir-

cuits are used; the only protection against excessive signal levels is fuses in the DC power supply to the transistors. The fuse holders (plus a line-fuse holder) are accessible on the rear of the amplifier, together with the gold-plated input jacks and four heavy-duty binding-post output terminals. The speaker outputs are spaced for dual banana-plug connectors and are also suitable for heavy speaker wires, with lugs or bare.

Adcom rates the GFA-585 at 250 watts per channel continuously into 8 ohms and 400 watts per channel into 4 ohms, both ratings based on operation from 20 to 20,000 Hz with no more than 0.02 percent total harmonic distortion (THD). But for continuous operation into 4 ohms at high power, Adcom recommends installation of an optional cooling fan (the unit we tested did not have the fan).

semiconductor technology, together with lowered prices, have contributed to the increase in power capability of home amplifiers and receivers, from a typical 30 or 40 watts per channel to an increasingly common 80 to 100 watts.

Really powerful amplifiers, able to supply 200 watts or more, have always been expensive but are proportionately less so now than they used to be. Although there are a number of “high-end” amplifiers in this category, with sky-high price tags, there are also many with list prices in the range of \$700 to \$1,200, which make them affordable to any serious enthusiast. The six power amplifiers reviewed here all fall within this price range, most toward the lower end.

The smallest of the group, the Carver TFM-35 and the Rotel RB990BX, are compact enough to fit into almost any installation. The Carver amp is the only one to have level meters on its front panel, and it and the Parasound HCA-1200 are fitted with handles (useful when picking up one of these rather heavy units). The two largest, the Denon POA-2800 and the Adcom GFA-585, weigh substantially more than the others, as well as being bulkier, but are still of a practical size for home installation.

The Tests

Although most of the amplifiers were provided with performance specifications, the specs were not all arrived at by the same procedures, and meaningful comparisons between them would be difficult. Nor did we attempt to confirm all of the specifications supplied for each amplifier; we measured only the key performance characteristics we normally test, under identical conditions for all six amps.

We measured the frequency response of each amplifier at a low power level (about 1 or 2 watts) and the input sensitivity (in millivolts) for a standard 1-watt output into 8 ohms. The A-weighted noise in each amplifier was measured (again, relative to 1 watt) with a 1,000-ohm resistance terminating the input.

We measured the clipping-level power output into loads of 8 and 4 ohms at 1,000 Hz, and from this measurement we derived the clipping headroom (the difference, in decibels, between the rated output and the output at clipping). Similarly, we made a dynamic-power measurement according to EIA standards (a 20-millisecond tone burst at 1,000 Hz, followed by a 480-millisecond “off” time). We then measured the maximum dynamic

power at the clipping point with loads of 8, 4, and 2 ohms and derived from that the dynamic headroom (the difference, in decibels, between the rated continuous power and the measured dynamic power). We also measured each amplifier’s total harmonic distortion (THD) at 1,000 Hz into 8 ohms at its rated output.

Finally, we measured the damping factor of each amplifier. Damping factor is inversely proportional to an amplifier’s internal output impedance and is one of the few characteristics of an amplifier that can actually affect its sound. A higher or lower damping factor won’t necessarily make the sound better or worse, but it may make it different, depending on the impedance characteristics of the loudspeaker being driven. When an amplifier’s damping factor is unusually low, its frequency response may vary somewhat according to the loudspeaker impedance, possibly to a great enough degree to make the sound different from that of the same speaker driven by an amplifier with a higher damping factor. Although such effects, when they occur, are the result of an interaction between the amplifier and the speaker, they are often mistakenly attributed to the amplifier alone.

CARVER TFM-35 (\$700)

THE Carver TFM-35, by a small margin the lightest amplifier of the group as well as one of the smallest and least expensive, is also one of the most powerful. It is rated to deliver 250 watts per channel into 8-ohm loads and 350 watts into 4 ohms, both with less than 0.5 percent total harmonic distortion between 20 and 20,000 Hz. It uses Carver's proprietary Magnetic Field power supply to deliver simultaneous high voltage and high current to the output transistors without the penalty in weight and heat dissipation imposed by a conventional power supply. The TFM-35 is also designed for bridged operation, in which it is rated at 700 watts (mono) into 8 ohms.

On the front panel are concentric level-control knobs that adjust the amplifier's input sensitivity, a pushbutton power switch, two illuminated level meters, and two small buttons used to change the



meters' display range or dim their illumination. The meter scales are calibrated so that 0 dB corresponds to the amplifier's rated output of 250 watts into 8 ohms. The scale goes to +3 dB to allow for pointer overshoot. Pushing in the range-switch button changes the 0-dB calibration to 25 watts.

On the rear of the TFM-35 are the input jacks and insulated binding-post speaker outputs; the standard 3/4-inch spacing is compatible with dual banana plugs. A stereo/mono slide switch converts the amplifier to bridged mode.

The TFM portion of the amplifier's model number stands for

Transfer Function Modified. Like other Carver TFM amplifiers, the TFM-35's frequency response and internal source impedance, or damping factor, have been designed to approximate those of the high-quality vacuum-tube amplifiers favored by some high-end audiophiles.

DENON POA-2800 (\$800)



DENON'S POA-2800 is one of the largest and heaviest amplifiers of the group. It is also one of the least expensive—a somewhat unusual combination.

The most prominent feature of the POA-2800's front panel is the Denon name in its center, with its model designation and a large pushbutton power switch below.

Two barely visible LED indicators show when the amplifier is powered and when it is in standby mode. The panel's rounded corners and a sculptured horizontal

indentation add visual interest. Two small round selector buttons at the lower right corner connect the two pairs of speaker terminals to the amplifier outputs.

The input jacks are at the two ends of the back panel. The left and right speaker outputs (two pairs for each side) are large (3/4-inch-diameter) insulated binding posts; they do not accept banana plugs, but heavy stranded-wire cables can be firmly clamped. Also on the rear are input connectors for remote control of the POA-2800 from compatible Denon pre-amplifiers or amplifiers.

The Denon POA-2800 is rated at 200 watts per channel into 8 ohms from 20 to 20,000 Hz with no more than 0.01 percent THD. It also carries a 4-ohm DIN power rating of 350 watts at 1,000 Hz.

MTX SOUNDCRAFTSMEN A400 (\$800)

THE MTX Soundcraftsmen A400 is a medium-size, relatively low-price entry. It has an attractive sculptured front panel with only a single control—a pushbutton power switch. Two barely visible LED indicators flash on momentary peak overloads.

Unlike the other amplifiers tested, the A400 has a built-in cooling fan that draws in cool air from one side of the back panel while exhausting warm air at the other side. The fan operates at all times, normally at a low speed. If the output transistors become too warm, as in sustained high-power operation, the fan switches to a higher speed until a safe temperature is reached.

The A400 is based on proprietary technology Soundcraftsmen calls PCR (Phase Control Regulation). PCR has several functions: (1) power regulation that is said to enable rated power to be developed even if the AC line voltage



falls as low as 100 volts; (2) protection against overloads or short circuits; (3) thermal protection, which varies the cooling-fan speed or shuts down the amplifier; and (4) efficiency improvement, by automatically varying the output of the power supply to meet program demands, reducing its

output during quiet passages to minimize heating. There are no conventional current-limiting circuits, since the amplifier uses MOSFET power components, which don't need such protection.

The A400's back panel contains, in addition to the air opening to the heat sinks and the corre-

sponding fan opening, the input connectors and speaker terminals. There are no conventional current-limiting circuits, since the amplifier uses MOSFET power components, which don't need such protection. The latter are insulated binding posts on ¼-inch centers, compatible with dual banana plugs, lugs, or wires. The A400 is rated at 205 watts per channel into 8 ohms and 300 watts per channel into 4 ohms.

PARASOUND HCA-1200 (\$845)



"LITTLE" brother to the better-known and even heftier Parasound HCA-2200, the HCA-1200 is appreciably larger than most of the

other amplifiers tested. It also has sturdy handles on its front panel and gives an impression of solidity. Like the Carver amplifier, the

HCA-1200 has input-level controls on its front panel. The pushbutton power switch has a red standby light that comes on while internal

voltages are stabilizing, replaced by a green light when the amplifier is ready for operation. Small LEDs indicate overload or high temperature in the two channels. The amplifier circuit boasts a Class A J-FET input stage and MOSFET drivers feeding high-speed bipolar output transistors.

The rear panel has two pairs of signal inputs, gold-plated phono jacks and ¼-inch phone plugs. The four insulated binding-post speaker connectors are compatible with dual banana plugs. A stereo/mono slide switch converts the amplifier for bridged operation, increasing its normal stereo rating of 200 watts per channel into 8 ohms or 300 watts into 4 ohms to 600 watts mono into either 8 or 4 ohms.

The Winners

It came as no surprise to find that all the amplifiers in this group were capable of delivering excellent performance in almost any home music system. And provided we kept all of them running within their power limits, we heard nothing that would incline us to prefer one over another. Although some people strongly feel otherwise, good amplifiers of comparable quality and power that are not being overdriven will sound very much alike under most conditions to most people.

If amplifiers do sound so much alike (and these did), then why bother comparing them? Because there is more to an audio component than its perceived sound character. There are differences in operational limits (maximum power output into various loads, for example), construction quality and finish, size, weight, price, and features that can affect an amplifier's suitability for any particular installation.

For example, the Adcom GFA-585 was clearly the most powerful and sophisticated of this group in its overall design. The largest, heaviest, and most expensive of the six amplifiers, the GFA-585 has an enormous current capacity, which enables it to drive even a 2-ohm load to more than 1,000 watts on demanding musical transients. It was in a class by itself with respect to its damping factor, which is rated at greater than 600 and measured about 1,500 (corresponding to an internal impedance of only 0.0053 ohm). Its noise level was also lower than that of any of the others.

Although the GFA-585 became very hot to the touch in our bench tests, it ran only moderately warm in normal operation. There should be no heat problem in a home installation, but adequate ventilation is clearly an important factor with an amplifier as powerful as this one.

The Carver TFM-35, in common

with most of that company's amplifiers, packs a lot of power and performance into a compact package. It was the lightest and smallest of the group by a small margin, and easily the least expensive. Although it weighs less than 30 pounds, its dimensions make it seem heavier than it is. It was no lightweight in performance, however.

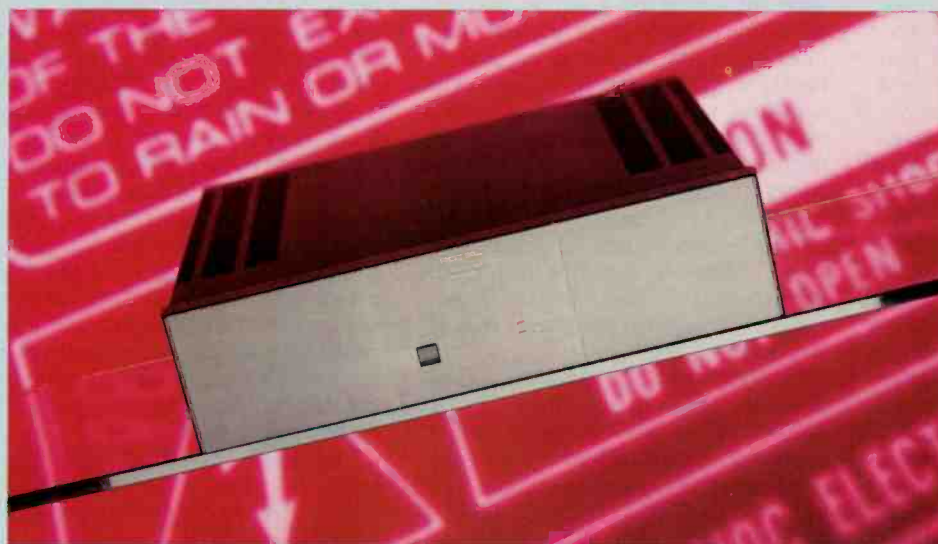
The TFM-35's Magnetic Field power supply gives it a hefty power output, both continuous and dynamic, ranking just barely behind that of the Parasound amp and in third place relative to the Adcom. Its damping factor was next to the lowest of the group, at 87, but even that seems high for an amplifier designed to emulate vacuum-tube performance.

The Denon POA-2800 is a relatively large and heavy amplifier (at 40 pounds, second only to the Adcom). It nonetheless proved very similar to the others near its price in most measurable respects. The most notable depart-

LABORATORY MEASUREMENTS

	ADCOM GFA-585 (\$1,200)	CARVER TFM-35 (\$700)	DENON POA-2800 (\$800)	MTX SOUND- CRAFTSMEN A400 (\$800)	PARASOUND HCA-1200 (\$845)	ROTEL RB990BX (\$1,100)
Clipping-level output (1,000 Hz, watts)						
8 ohms	295	280	220	215	275	210
4 ohms	485	380	360	306	400	340
Clipping headroom (dB)						
8 ohms	0.72	0.49	0.41	0.21	1.38	0.21
4 ohms	0.83	0.36	0.12	0.09	1.25	0.13
Dynamic power (watts)						
8 ohms	350	375	264	203	310	240
4 ohms	612	545	454	377	530	420
2 ohms	1,022	810	783	483	930	720
Dynamic headroom (dB)						
8 ohms	1.46	1.76	1.2	-0.04	1.9	0.58
4 ohms	0.83	2.18	1.13	0.51	2.5	0.92
Frequency response (20-20,000 Hz, dB)	+0, -0.2	+0, -0.65	+0, -0.18	+0, -0.15	+0, -0.28	+0, -0.20
Sensitivity (for 1 watt output, millivolts)	125	93	75	90	62	75
Noise (referred to 1 watt, A-weighted, dB)	-97.3	-94	-76.2	-91.5	-88.5	-94.5
Distortion (THD + N at rated power into 8 ohms)	0.0057%	0.0042%	0.0025%	0.024%	0.0018%	0.08%
Damping factor (8 ohms)	1,500	87	84	216	457	146
Dimensions (inches)						
width	17	19	17½	17	17¼	17¼
height	8¾	4½	7¼	5¼	5½	4¾
depth	12¼	14½	16¾	10¾	14	14¾
Weight (pounds)	45	26	40	27½	38	35½

ROTEL RB990BX (\$1,100)



The Rotel RB990BX is roughly the size of the MTX Soundcraftsmen and Carver amplifiers. Its panel

contains only a pushbutton power switch and two small LED's. The power light comes on when the

circuits have stabilized and the amplifier is operating. If the protection circuit is activated by an

overload or excessive temperature, the amplifier shuts down and the protection light comes on.

The RB990BX has an idiosyncrasy that should never come up in normal use but that can easily make itself apparent in bench measurements. It is vital that a solid connection exist between the ground of the signal source and the ground side of the amplifier's input connector. This may not always occur in lab testing, as we learned the hard way (all the DC fuses in the amplifier blew out).

The rear of the amplifier, like its front panel, is simple and uncluttered. It has only the input connectors and the speaker binding posts on standard 3/4-inch centers, plus the line-fuse connector.

tures from the norm were its damping factor (the lowest of the group, at 84) and noise level (the highest, at -76.2 dB). Although it was 12 dB or more noisier than the others, even this is not likely to be audible under typical real-world listening conditions.

The MTX Soundcraftsmen A400 enjoys the distinction of being designed and manufactured in the United States (the others, even if designed here, are built in whole or part elsewhere in the world). Relative to the others, it had a medium damping factor (216), slightly higher distortion at rated power, and lower dynamic headroom.

The A400 is also the only one of the group to have a built-in cooling fan, which performed very well in its primary function, making this amplifier the only one that ran cool (externally) under most of our test conditions. That ability exacted a price, however, as the fan, which normally runs at a low speed, had a soft whir that was clearly audible anywhere within a few feet of the amplifier. Under high-power test conditions, it sped up and emitted more audible noise. We also found that driving the A400 slightly into clipping caused the fan to come on at full speed in a few seconds, although it returned to its normal speed seconds after the overload was removed. While the only real-world listening conditions likely to elicit full-speed fan operation would probably also involve sound levels from the speakers high

enough to drown out its noise, even on low the fan seemed too noisy to me.

The A400's flimsy top cover seems out of character with what is otherwise a very good amplifier. Every time we turned it on there was a loud noise, apparently caused by the top's being magnetically attracted to the power transformer, and usually there was an audible, though less objectionable, noise when it was turned off. On the plus side, the A400 has one of the most sophisticated protection systems we have seen in an amplifier.

For sheer low distortion, which may or may not be significant for listening purposes but is nonetheless impressive, the Parasound HCA-1200 took the honors with a reading of 0.0018 percent at its rated output of 200 watts. It also had the second-highest damping factor, and its power output, both continuous and dynamic, was in a dead heat with the Carver and ranked behind only the Adcom. The HCA-1200 is also second only to the Adcom in size and is the only one of the amplifiers other than the Carver to have front-panel level adjustments or bridging capability.

Although the HCA-1200 ran only slightly warm in normal use, it became very hot during our preconditioning at one-third rated power and in the tests that followed. In fact, its top could not be touched during that period.

Finally, the Rotel RB990BX, alphabetically last, fell in the middle of the

group in most respects. The only measurement that departed from the center was its 0.08 percent distortion at rated power, which was several times higher than that of any of the other amps though still quite negligible.

The relatively compact RB990BX is heavy for its size and well built. The light-gauge sheet-metal covers merely protect the amplifier from prying fingers (and protect those fingers from electric shock or burns). The heavy power transformer is supported by a fifth mounting foot under the center of the chassis, which makes the amplifier solid and rigid despite the light covers. Full-power operation made the top of the case (over the heat sinks) too hot to touch, but in normal operation it became only moderately warm.

The bottom line, as we see it, is that the amplifiers in the \$800 to \$1,100 range are all good, solid components, with minor differences in features and performance that may lead to a preference for one over another. The lightest and the heaviest—Carver and Adcom—provide some additional power and other features. These two amplifiers are also by small margins the least and the most expensive of the group. The Adcom, at \$1,200, was the top performer overall, with especially impressive power output into low impedances, and on that basis we would say it earns its premium. But at just slightly more than half its price, the Carver is a clear best buy. □

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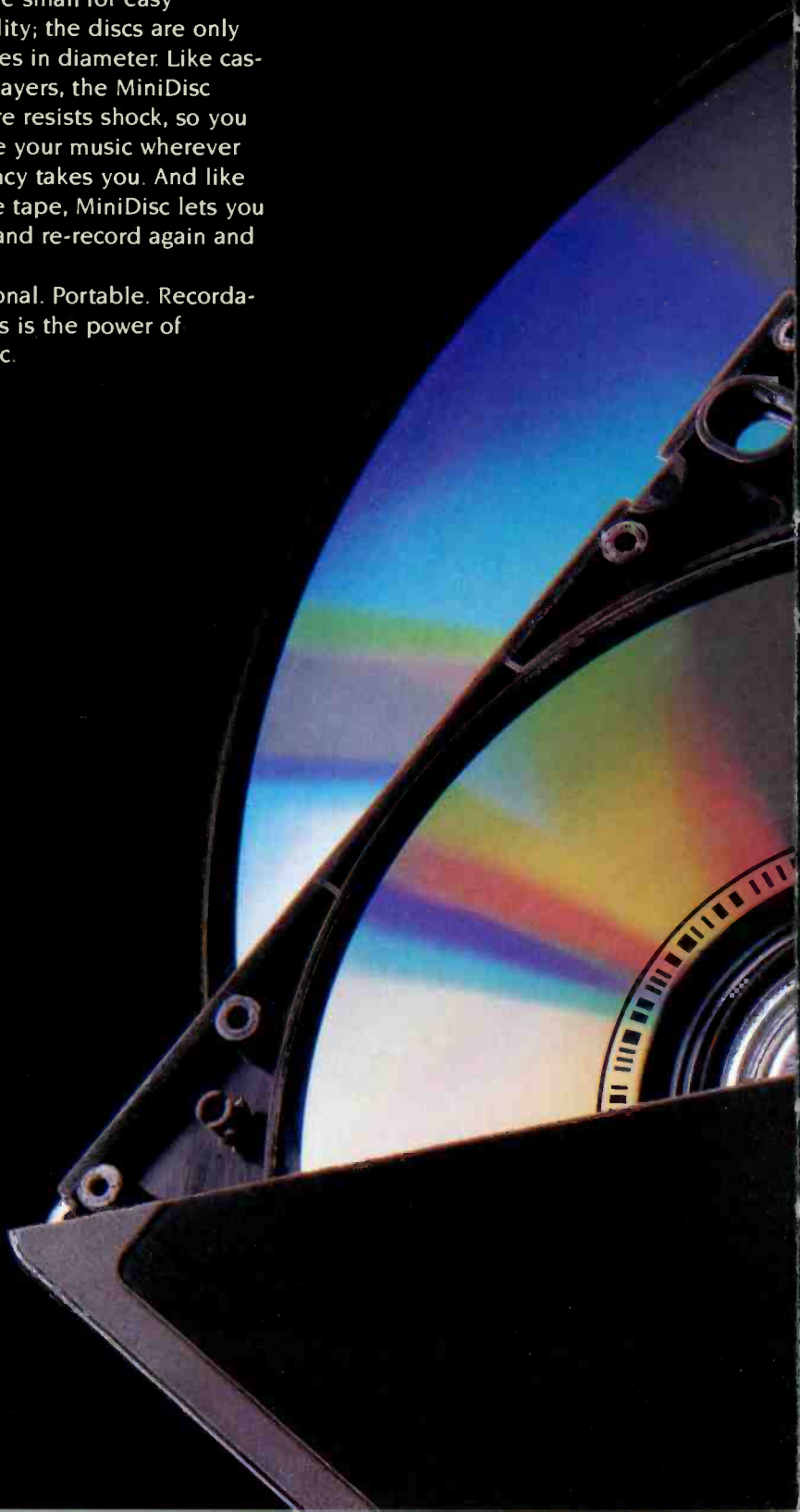
MiniDisc: The New State of the Art in Personal Audio.

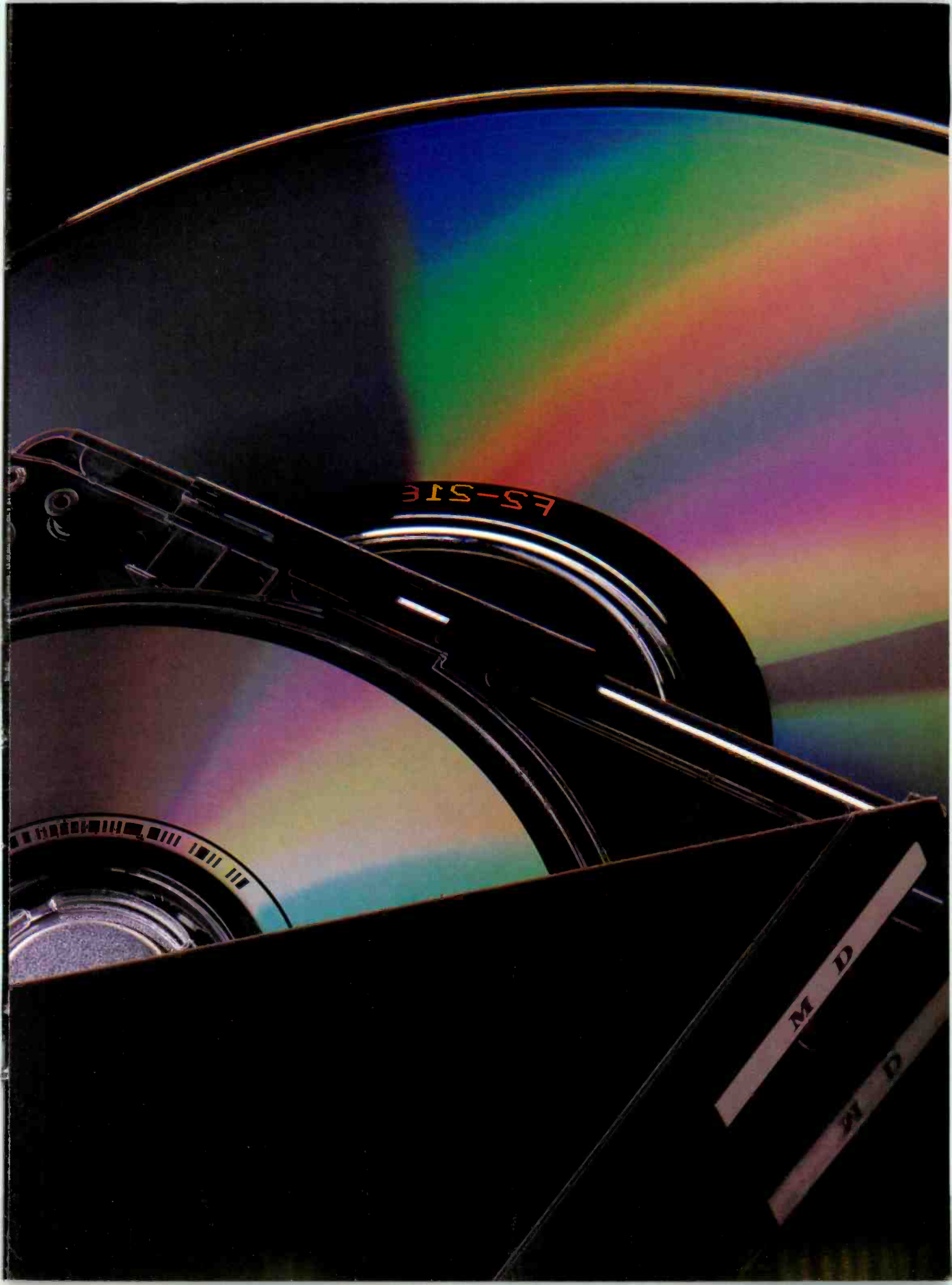
Sony's MiniDisc is an all-new format with an unmatched range of possibilities. Like the Compact Disc, MiniDisc boasts up to 74 minutes of spectacular digital sound—nearly the same sound quality as CD itself. Like CD,

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Rugged Cartridge.

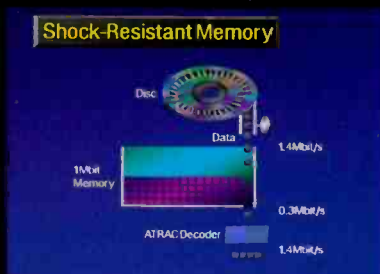
MiniDisc may be small, but to make it truly portable, Sony placed it in a protective cartridge. So MiniDiscs are ready to travel. You can toss them in a glove compartment, briefcase or even your pocket.

Phenomenal Shock Resistance.

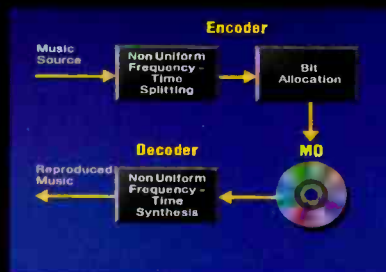
Most CD players try to resist skipping by means of an oil-damped or mechanical suspension. MiniDisc hardware takes an altogether different approach: a revolutionary method called Electronic Shock Protection (ESP).

The heart of ESP is a buffer memory chip that stores digital data from the disc. Thanks to ATRAC bit reduction, a four Megabit chip corresponds to ten seconds of real-time music. So if shock and vibration should make the laser mistrack, music will continue to flow for up to ten seconds. This gives the laser ample time to resume proper tracking, so your music never misses a beat. In this way, MiniDisc matches today's active lifestyles, letting you bring high-

quality digital sound where it's never been before.



As a prerecorded medium, MiniDisc offers still other advantages, like Text Mode. It's an eye-catching display of the disc's title, track title and even the artist's name. Text Mode is just one more example of how MiniDisc puts a new spin on personal music enjoyment.

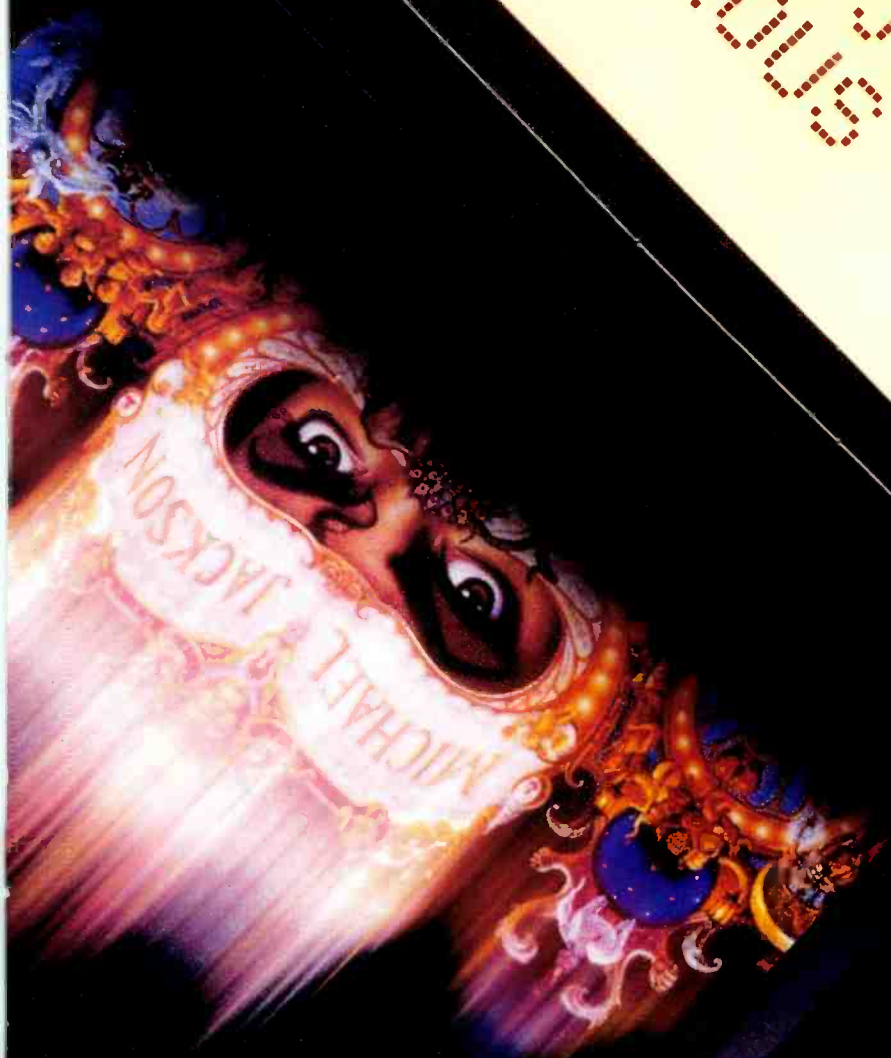


UNLIKE OTHER BIT REDUCTION SYSTEMS, ATRAC PERFORMS NON-UNIFORM FREQUENCY AND TIME SPLITTING.

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MEMORIAL TRIBUTE



STOP/CHARGE

At Long Last, You Can Record on a Disc.

For over forty years, audio recording has meant tape recording. And while tape recording is better than no recording at all, it's always been plagued by tape shedding. Tape stretching. And occasionally even tape jamming.

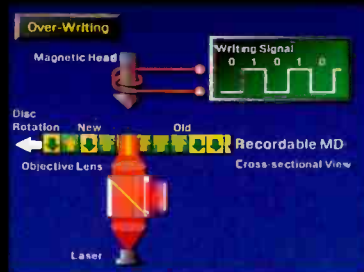
All of this is about to change, thanks to MiniDisc. For in addition to playback-only prerecorded MiniDiscs, there's also another type of MiniDisc you can record yourself. In fact, with MiniDisc you can record and re-record again and again, up to a million times on the same disc! And MiniDisc recordings provide far faster random access than any tape can, as well as new features that tape formats simply can't touch.

Magneto-Optical Recording.

While prerecorded MiniDiscs use the same laser-read "pits" as Compact Discs, recordable MiniDiscs are different. They represent the first consumer product with magneto-optical technology. Unlike the "write-once" recordable CD's that professionals use, magneto-optical discs are erasable. So you can erase and re-record your MiniDiscs just as you can with cassettes.

Magneto-optical recording has long been used for computer storage. However, MiniDisc incorporates a "direct overwrite" capability that's entirely new. First, a high-power laser beam heats the disc's magnetic layer past the Curie point, the temperature above which the magnetic orientation is easy to change. Then, a semiconductor magnetic head

applies the signal from the opposite side of the disc. As the heated spot of the disc rotates away from the laser, it cools and the imprint from the magnetic signal remains embedded on the disc. Because erasing the disc requires at least 400 degrees, the discs are unaffected by stray magnetic fields that might ruin a tape recording.



IN THE MD RECORDER, A LASER HEATS THE DISC'S MAGNETIC LAYER WHILE THE SEMICONDUCTOR MAGNETIC HEAD RECORDS THE SIGNAL BY A MODULATED MAGNETIC FIELD.

As a result of this approach, you get a simpler mechanism. A more accurate spot pattern. Lower error rates. Reduced jitter. And lower power consumption, making battery-powered portable recording a reality.

Take Control of Your Recordings.

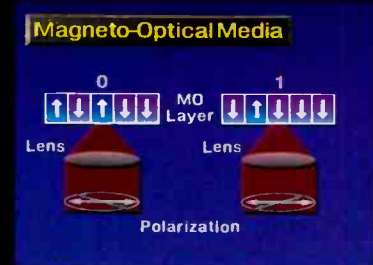
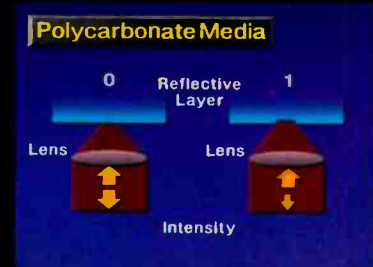
With MiniDisc, you can alter or adjust your recordings as never before. For example, you can easily re-sequence songs after you've recorded them by writing your new sequence into a section of the disc called the User Table of Contents. You can also edit out a track and all subsequent tracks will be automatically renumbered.

Finally, the MiniDisc format lets you re-record individual tracks, even substituting longer songs for shorter ones. When the recorder comes to the end of the original space, the buffer memory gives the machine up to three seconds to find avail-

able disc space and resume recording. So even if your music is recorded on two different sections of the disc, during playback it's never interrupted. To a generation raised on analog recording, these capabilities are nothing short of amazing.

Playback without Pits.

Once recorded, a magneto-optical MiniDisc contains a spiral of magnetic patterns. During playback, these patterns reflect laser light at two different angles of polarization. (This is called the Kerr effect.) Remarkably, this same laser pickup is used for playing back prerecorded MiniDiscs. Both types of playback are performed without contact, so you get an unlimited number of plays without disc deterioration or wear.



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60 min
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MDW-60



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For Recording and Playback
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(MiniDiscs Shown Actual Size)

DISCOVERING

A MERICAN



MUSIC

HEY, COLUMBUS! WE FOUND IT!

Under that headline the New York Chamber Ensemble announced its 1991-1992 season, a celebration of American music. While some performing-arts institutions chose to observe the five-hundredth anniversary of Columbus's first voyage to the Western Hemisphere with a salute to Latin America, others, like the New York Chamber Ensemble, found much to celebrate in the classical music of the United States, and I'm with them.

For a while it seemed insensitive to "celebrate" the quincentennial of Columbus's discovery since its eventual consequences were disastrous for so many original inhabitants of the Americas and so many Africans brought here as slaves. But protests faded this year when replicas of Columbus's ships crossed the Atlantic and when Operation Sail 1992 brought tall ships from around the world into the harbors of New York and Boston. Op Sail '92 seemed to be a tribute to the human spirit. The ships were beautiful, and, like many quincentennial activities from Cádiz, Spain, to Columbus, Ohio, the whole thing was a lot of fun.

In that spirit, I invite you to make a little voyage of discovery of American classical music. Let's skip the tiresome historical approach—that Yankee Doodle Revolutionary music can be as deadly as Gregorian chant—and go directly to the more exciting stuff. By

recommending a couple of dozen recent recordings that I have enjoyed I hope to lead you to music by our own composers that will give you the same things you get from standard European compositions: contact with beauty, truth, fun, and emotional fulfillment.

You probably already know a few of the big names in American music, like George Gershwin (*Rhapsody in Blue*), Ferde Grofé (*Grand Canyon Suite*), and Aaron Copland (*Appalachian Spring* and *Rodeo*). They are the tall ships among American composers, and they invented the idiom that describes the American life and landscape in sound.

Although the late Leonard Bernstein, our first widely recognized world-class conductor, played the standard European repertoire, he was also a champion of American music. And following in his footsteps are a group of younger American conductors who bring glamour to performances of our music and make it attractive and accessible. They include Dennis Russell Davies, Gerard Schwarz, Leonard Slatkin, Michael Tilson Thomas, and David Zinman, all represented below.

Among institutions designed to promote American music are the American Composers Orchestra, founded in 1975 by Davies and the composer Francis Thorne, and New World Records, also founded in 1975 and intended to document American music that is not being

PHOTO OF AARON COPLAND AND LEONARD BERNSTEIN BY WALTER H. SCOTT. COURTESY OF DEUTSCHE GRAMMOPHON

by William Livingstone

recorded by commercial companies. Videmus, a Boston-based performing group, is devoted to music by women, African-Americans, and composers from other minority groups.

Commercial companies large and small are now recording more American music. Delos Records, a smallish company in Los Angeles, has had some of its biggest successes with recordings in its Great American Composers series, conducted mostly by Schwarz. Slatkin's contract with RCA Victor emphasizes American music, and Thomas, who made distinguished recordings of American music for Columbia Masterworks, continues that work with Sony Classical. Zinman has recorded notable American works for Nonesuch.

What do Americans look for in music? I think we are somewhat romantic, somewhat sentimental people who like pretty melodies and music that moves us. According to Paul Marotta, director of marketing for New World Records, this view is borne out by his sales figures. "Americans go for accessibility," he says, "so in this country we sell more John Knowles Paine and Ned Rorem. European buyers prefer our more intellectual composers, such as Sessions, Babbitt, and Elliott Carter."

Everybody I know in the music world has great respect for Carter, and nobody I know listens to his music for pleasure. I'm much more excited by the revival of interest in American symphonists of the Neo-Romantic school—Samuel Barber, Paul Creston, Howard Hanson, William Schuman, and Randall Thompson. I think we are indebted to the film composer John Williams for bringing their music back into vogue. With his soundtracks for *Jaws*, *Star Wars*, and other movies, Williams revived the symphonic style in film scores and reaccustomed our ears to the pleasant sound of Neo-Romantic music for large orchestra.

Stephen Rodgers Radcliffe, the music director of the New York Chamber Ensemble, says that the shift of the power center in American music away from the academic, dogmatic style of the Princeton School (typified by Milton Babbitt) is like the falling of the Berlin Wall and the collapse of the Soviet Union. He says, "The seeds for a 'kinder, gentler' American music style were sown early in the century with composers like Griffes and Swanson and grew,

through Copland and Barber, to a mature American tonal style with works by Lou Harrison and Ned Rorem." Makes sense.

Although our composers have produced a large body of wonderful songs, they have not written great operas in the Romantic mold of

Verdi or Puccini. Nevertheless, contemporary Americans, such as John Adams, are making news with operas based on headline stories like President Nixon's trip to Red China. A recording of Anthony Davis's first opera, *X: The Life and Times of Malcolm X*, has just been released by Gramavision, and John Moran has written an opera about the murderer Charles Manson and his "family," available on Philips.

How much of it appeals to you will depend on your taste. Like jazz, American classical music is having a worldwide renaissance, and there is much here that we can be proud of. Pride seems to be an important factor in winning self-esteem and equality for the various strains that make up the mosaic of American life today, whether it's Chicano pride, gay pride, or black pride.

On the morning of July 4, 1992, with the replicas of Columbus's ships in New York Harbor and sailing vessels moving sedately up the Hudson River, the mayor of New York, David Dinkins, repeated something other black leaders have said before: "Our ancestors may have come here in different ships, but we're all in the same boat now."

Earlier this year the Los Angeles riots that followed the acquittal of policemen on trial for brutality in beating Rodney King demonstrated that five hundred years after Columbus we still have a long way to go in achieving racial harmony. But, like sports, music is an area in which we work together well. Perhaps if we take pride in American music, we can eventually find a way to answer with a resounding "Yes" Mr. King's question after the riots: "We can get along together, can't we?"



Pianist John Browning

CHRISTIAN STEINER/SHIRLEY KIRSCHBAUM & ASSOC.



ADAMS: Nixon in China. Soloists; Orchestra of St. Luke's, Edo de Waart cond. Nonesuch 79177 (three discs, 145 min). The director Peter Sellars,

the Bad Boy of Opera, has done a lot of silly things, but this collaboration with John Adams and their stock company of singing actors works well. I recommend it to more adventurous readers.

BARBER: Piano Concerto; Symphony No. 1; Souvenirs. John Browning, Leonard Slatkin (piano); St. Louis Symphony, Slatkin cond. RCA Victor 60732 (70 min). Depth, substance, and power, which were Barber's long suits, are in abundant supply in his Piano Concerto and First Symphony.

The concerto was written for John Browning, who has both the dazzling virtuosity and the tenderness it requires. A humorous bonus in this recording is the four-hand piano arrangement of Barber's *Souvenirs* played by Browning and Leonard Slatkin.

BARBER: Knoxville: Summer of 1915. HARBISON: Mirabai Songs. Arias by Stravinsky and Menotti. Dawn Upshaw (soprano); Orchestra of St. Luke's, David Zinman cond.

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The Integra DX-C909, for example, incorporates design elements usually reserved for only the most costly single play components.

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Nonesuch 79187 (42 min). America has produced great singers to perform our great songs, and Dawn Upshaw is among the best of them. In reviewing this Grammy-winning disc, Richard Freed waxed eloquent in this magazine in describing the way Upshaw gives herself completely to the sense and spirit of what she is singing. He added, "Everything here, whether humorous, wistful, nostalgic, or erotic, is incredibly touching." Amen.

BERNSTEIN: Songfest; Chichester Psalms. Soloists; National Symphony, Israel Philharmonic, Leonard Bernstein cond. Deutsche Grammophon 415 965 (62 min). I like Bernstein best for the things he's least famous for. *Chichester Psalms* is one of his prettiest pieces, and the poems he chose for *Songfest* show great taste—works by Poe, Whitman, Millay, and Aiken, but also Gertrude Stein, Gregory Corso, and Lawrence Ferlinghetti. *Songfest*, not so immediately accessible as the *Psalms*, yields itself on repeated hearings.

BOLCOM: Violin Concerto; Fantasia Concertante; Fifth Symphony. Sergiu Luca (violin); American Composers Orchestra, Dennis Russell Da-

EARLY IN THIS CENTURY WE SOWED THE SEEDS FOR A KINDER, GENTLER AMERICAN MUSIC.

★ ★ ★

431 672 (74 min). Since you've probably already got some Copland, I chose this recording for the lovely Concerto for Clarinet and String Orchestra, with harp and piano, just to show you this composer in another vein. *El Salón México* is always fun.

COPLAND: Old American Songs. IVES: Songs. Samuel Ramey (bass); Warren Jones (piano). Argo 433 027 (52 min). I had never cared for Copland's *Old American Songs* until I heard Samuel Ramey perform them in this recording, nominated for a Grammy Award this year. His manly simplicity gives them needed depth and dignity. He sings a few of the same Ives songs that Roberta Alexander does (see IVES), and it is interesting to contrast their interpretations.

CORIGLIANO: Symphony No. 1. Chicago Symphony, Daniel Barenboim cond. Erato 45601 (41 min). This live recording is a harrowing performance of a work filled with the rage and grief the composer felt as he saw friends die in the AIDS epidemic. In scope and power it recalls Mahler and Shostakovich. I cannot recall a more stirring contemporary work.

GERSHWIN: Porgy and Bess. Soloists; London Philharmonic, Simon Rattle cond. Angel 49568 (three discs, 190 min). You may argue about which is the best recording of *Porgy and Bess* (the London set under Lorin Maazel and the RCA set under John De Main are both quite good), but there's no arguing this work's position as the greatest American opera. The Angel set, which I recommend, derives from performances at the Glyndebourne Festival and gives the opera almost Mussorgskian power.



GLASS: Mishima. Kronos Quartet; orchestra, Michael Riesman cond. Nonesuch 79113 (46 min). With the Minimalists Philip Glass, John Adams, and Steve Reich, avant-garde classical music comes very close to cutting-edge pop in a form that is accessible to all. Called to my attention by our musically conservative cartoonist Charles Rodrigues in 1986, Glass's score for the film *Mishima*—alternately sensual and ascetic, martial and poetic—holds up very well.

GOTTSCHALK: Piano Music for Two Hands. Alan Marks (piano). Nimbus 5014 (60 min). An innovator, virtuoso, and Romantic, Gottschalk blended Hispanic, African, and European elements in music of no great depth but considerable charm.

GOULD: American Salute. London Philharmonic, Kenneth Klein cond. EMI/Angel 49462 (69 min). Unusually gifted in instrumentation, Morton Gould is a brilliant tone painter who often works with American themes as in this album. His *American Symphonette No. 2*, which weaves together influences from Bach to jazz, was written in 1938, and his lush arrangements of *Spirituals for Strings* date from 1959. His *American Ballads* were a Bicentennial commission in 1976. *Amber Waves* in this set makes me very glad I am an American.



HANSON: Symphony No. 1 ("Nordic"); Symphony No. 2 ("Romantic"); Elegy in Memory of Serge Koussevitsky. Seattle Symphony, Gerard Schwarz cond. Delos 3073 (71 min). Gerard Schwarz told me he recorded Hanson's symphonies as a labor of love and never dreamed the result would hit the best-seller charts.

MALCOLM CROWTHERS/CETERA RECORDS



Soprano Roberta Alexander

vies cond. Argo 433 077 (62 min). William Bolcom, who won the Pulitzer Prize in 1988, has worked so many musical mines that he should probably be given a snappy label like Postmodern. He describes these pieces, however, as Neoclassic. Labels aside, they have the sheen and sophistication of Ravel or Stravinsky, not surprising since Bolcom studied in Paris with Milhaud and Messiaen. He provides excellent liner notes.

COPLAND: Clarinet Concerto; El Salón México; other works. New York Philharmonic, Leonard Bernstein cond. Deutsche Grammophon

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Onkyo's new Integra TX-SV909PRO offers home theater performance so advanced, other receivers are destined for some unhappy endings.

The TX-SV909PRO is the world's first receiver to feature a full digital Dolby Pro Logic surround decoder. The technical benefits are significant: improved signal-to-noise ratio, lower distortion and greater separation. To your ear this means Dolby surround sound that is identical to a first class theater, with pinpoint imaging of all dialog, music and sound effects.

The TX-SV909PRO is also the world's first receiver to incorporate the acclaimed Ambisonic Surround Sound System, which is to music what Dolby Pro Logic is to movies. The Ambisonic process recreates a 360° soundstage, with a seamless, natural transition from the front to rear speakers. Ambisonic recordings (such as those on the

Nimbus label) played back through the decoder on the TX-SV909PRO deliver a sense of musical time and space that is more lifelike than anything you've ever heard.

The high technology found in the TX-SV909PRO can only be achieved by Onkyo's dedication to uncompromised engineering. That's why the TX-SV909PRO features 7 Discrete Power Amplifier Sections and 3 Independent Heavy-Duty Power Transformers. True Multiple Room/Multiple Source capability is assured via this 7 channel design as well - you can have full 5 channel Pro Logic in your home theater/media room while someone in the bedroom listens to a CD in stereo.

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The love comes through in the performances, and so does Hanson's Scandinavian heritage, which explains the resemblance to Sibelius. This CD was the beginning of Delos's now-complete cycle of recordings of all seven Hanson symphonies.



HARBISON: String Quartets Nos. 1 and 2; "November 19, 1828" for Piano and String Trio. Lydian String Quartet; Yehudi Wyner (piano). Harmonia Mundi 907057 (54 min). To get over the idea that chamber music is something written by and for dead male Austrians, try to think of it as the classical equivalent of music for jazz combos. John Harbison (b. 1938) is one of our guys who writes it very well. These three engaging pieces were written on commission, and the composer's program notes are quite enlightening about them. Ironically, the date November 19, 1828 is the day Franz Schubert died, and this piano quartet is an intriguing tribute to that dead Austrian male.

HARRIS: Symphony No. 3. SCHUMAN: Symphony No. 3. New York Philharmonic. Leonard Bernstein cond. Deutsche Grammophon 419 780 (51 min). The third symphonies of Roy Harris, William Schuman, and Charles Ives are ranked with Hanson's "Romantic" Symphony as foundation blocks of the American orchestral repertoire. If these works now recall movie scores, it is because they had great influence on film composers of the Thirties and Forties. Bernstein gives the Harris and Schuman authoritative performances in this recording.



IVES: Symphonies Nos. 1 and 4. Chicago Symphony Chorus and Orchestra, Michael Tilson Thomas cond.

Sony SK 44939 (77 min). For years I was put off from Ives by articles about his methods and techniques and suggestions that it was one's patriotic duty to like him. Nobody bothered to tell me his music was gorgeous and fun to listen to. I especially like the First Symphony. This CD includes a separate performance of the hymns that Ives quoted in the gigantic Fourth Symphony.

IVES: Songs. Roberta Alexander (soprano); Tan Crone (piano). Etcetera 1020 (51 min). Musical sensitivity, subtlety, long breath, and a ravishing tone combine to make Roberta Alexander a treasurable artist. I discovered her with this recording, and in it she revealed to me the beauty of Ives's songs. I am happy to report that she followed this disc with a second Ives recital (Etcetera 1068) as well as song collections by Barber (1055) and Bernstein (1037).

PAINE: Symphony No. 1; Overture to "As You Like It." New York Philharmonic, Zubin Mehta cond. New World 374 (48 min). If you like the symphonies of Mendelssohn and Schumann, this CD might be a good place to start with American orchestral music. A contemporary of Brahms, Paine studied in Germany. These are fine performances, well recorded.

ROREM: Winter Pages; Bright Music. Ani Kavafian, Ida Kavafian (violin); Fred Sherry (cello); Charles Wadsworth, André-Michel Schub (piano); other soloists. New World 80416 (51 min). A student of Copland, Virgil Thomson, and Nadia Boulanger, Ned Rorem retains Gallic polish and chic. He says in the notes here that his music grows more optimistic as he grows older (he was born in 1923). With some up-to-date New Agey twists, these attractive chamber pieces sound like scores for sexy modern ballets.

STILL: Works. idemus (vocals and instrumentals). New World 80399 (64 min). William Grant Still (1895-1978) was the first African-American composer to be widely published and performed. Born in Mississippi, he worked in Memphis and New York with W. C. Handy, Hall Johnson, and Eubie Blake and studied with Chadwick and Varèse. The Neo-Romantic and Neo-Impressionistic works included here are from the 1930's to the 1950's. *Songs of Separation* are five settings of texts by famous black po-

ets, and the suite *Ennanga* (1956) is a tribute to Still's African heritage that is accessible to all.

ZWILICH: Symbalon; Concerto Grosso; Double Quartet; Trumpet Concerto. New York Philharmonic Ensembles; Philip Smith (trumpet); Zubin Mehta cond. New World 372 (64 min). Ellen Taafe Zwilich (winner of the 1983 Pulitzer Prize in Music) says that as a composer she is working in a business dominated by dead male Austrians. She demonstrates in her music how well she is qualified to compete in this crowded field. She explores instrumental texture in a way that suggests New Age music but here has very clear structure. She resists being labeled Neo-Romantic or anything else. Just listen to the music. It's substantial, contemporary, and accessible.



THE AMERICAN ROMANTIC: Music of Beach, Gottschalk, and Helps. Alan Feinberg (piano). Argo 430 330 (61 min). The Romantic spirit of the nineteenth century, captured by Amy Beach (1867-1944) and Louis Moreau Gottschalk (1829-1869), is echoed appealingly today by Robert Helps (b. 1928). Alan Feinberg, a student of Helps's, gives idiomatic performances of works by all three composers, who sound a bit like Chopin and a bit like Liszt. This recording is the first in Feinberg's "Discover America!" series.

THOMAS HAMPSON: An Old Song Re-Sung. Thomas Hampson (baritone); Armen Guzelimian (piano). EMI 54051 (66 min). These American concert songs are by such fine composers as Griffes, Romberg, Foster, Speaks, and Cadman, and I feel indebted to Hampson for reviving them. He does not exaggerate the folksiness of *Shenandoah*, the melodrama of *Danny Deever*, or the sentiment of *In the Gloaming*. I have seen him bring an audience to its feet with *Roses of Picardy*, my favorite of this excellent collection, and if I could be a singer today, I'd want to be Thomas Hampson. □

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A DX loudspeaker can make a room the size of, say, an outhouse, sound very much like an opera house.

INSIDE D·C·C

ALTHOUGH you may not have noticed, trendmongers at audio equipment and record companies have concluded that the venerable analog cassette is nearing the end of its life. The analog cassette won't collapse into obsolescence as precipitously as the LP did, but there has already been a noticeable downturn in analog cassette sales. It's time, they say, for something new.

That something, according to Philips and Matsushita (parent of Technics and Panasonic)—the largest consumer-electronics companies in Europe and Japan, respectively—is the Digital Compact Cassette, or DCC. Co-developed by those two companies in relative secrecy and announced to the world on January 9, 1991, the DCC system is designed to address the principal weaknesses of the analog cassette as determined by consumer surveys and tests.

Those shortcomings include:

- Poor sound quality compared with the LP and, especially, the compact disc.
- Cumbersome cueing, even with blank-hunting players. It's easier to find tracks on an LP than it is on an analog cassette.
- Vulnerability to damage, with both the reel hubs and the tape exposed and unlocked.
- A perception of old-fashioned appearance and "feel."

All of these faults stem ultimately from the analog cassette's having been developed

**Tape
Recording
for the
Nineties**

PHOTO BY JEFFREY KREIN

B Y D A V I D R A N A D A

The Technics and Optimus DCC decks are expected to appear in stores between now and the end of the year, and a number of record companies will be releasing prerecorded DCC's at the same time.



by Philips as a low-fidelity mono dictation system. It took some prodding—and the development of Dolby noise reduction—for it to achieve acceptance as a high-fidelity medium. DCC, on the other hand, has been developed from the ground up as a high-fidelity recording system, the first digital system having some degree of compatibility with the analog system it is meant eventually to replace. All DCC machines will be able to play back analog cassettes as well as DCC tapes, a capability important for car and portable applications and to users who have large libraries of analog cassettes.



Analog cassette and DCC tapes. Note the sliding metal shield on the DCC.

This backward compatibility is possible because the DCC system has been designed to use tape transports that are identical, or nearly identical, to those now used in analog cassette decks. DCC tape is the same width as analog cassette tape ($\frac{1}{8}$ inch), and it runs at the same speed ($1\frac{1}{8}$ inches per second, or ips). In practice, the average DCC tape transport will be somewhat better than the typical analog one. Since a DCC tape has two "sides" but can only be inserted one way into a DCC machine, all DCC players will have some form of autoreverse mechanism. And because all digital playback systems obtain their immeasurably low wow and flutter by synchronizing themselves to ultra-

stable reference signals, all DCC transports will have some sort of speed-stabilizing servo control, which should provide benefits even in analog cassette playback. This slight additional transport complexity may prevent DCC from taking over the very bottom of the cassette market, however—the realm of \$30 portable players and the like.

Not surprisingly, the Digital Compact Cassette itself is a close match in overall size to an analog cassette. It differs mainly in the physical characteristics where the analog cassette scores poorly. When not inserted into a deck, a DCC's reel hubs and tape are covered by a sliding metal shield similar to that on computer microfloppy diskettes. And the top of the cassette shell has been flattened to provide a relatively large and unbroken area for artwork or labeling.

Sound Quality

So far we've been discussing relatively low-tech solutions to the analog cassette's perceived weak points.

But when it comes to weakness No. 1—sound quality—all the technological stops have been pulled out to get a high-quality digital signal onto a tape moving at analog speeds. The challenge was the amount of data that must be recorded.

A standard digital audio signal as carried on a CD consists of an enormous amount of data. In order to provide its superb sound quality, a CD player must read 1,411,200 bits of audio data *per second* from the disc's mirrored surface. In order to cram such a massive amount of information into such a small area, a CD has to spin rapidly (between 500 and 200 rpm) so that the trail of data-bearing microscopic "pits" passes by the pickup laser at 1.2 to 1.4 meters (3.9 to 4.9 feet) per second. In a DAT (digital audio tape) deck—you remember them, don't you?—a VCR-type rotating head drum slides the recording head across the tape even faster, about 3 meters (10 feet) per second, while the tape itself moves at only about $\frac{1}{4}$ centimeter (approximately $\frac{1}{8}$ inch) per second. This rapid tape-to-head speed is necessary to record and play the 1,536,000 bits of audio data that flows through a DAT machine every second when it operates at its standard 48-kHz sampling rate.

Now, let's go back to DCC, where the tape-to-head speed is exactly the same as that of analog cassette tape:

The Foundations of PASC

WHILE the actual operation of Precision Adaptive Subband Coding (PASC), the system that enables a high-quality digital audio signal to fit onto a DCC, is quite complex, the two main psychoacoustical principles underlying it—thresholds and masking—are fairly easy to grasp. The easiest concept is that of absolute hearing thresholds, the level of the softest sounds a person can hear under ideal circumstances. This threshold is what the relatively crude, doctor's-office "hearing test" attempts to determine for a single frequency. Anyone who's taken one of these tests knows that while the human ear can be extraordinarily sensitive, it can't hear everything. There are sounds that are simply too soft to hear, sounds that fall below our absolute hearing thresholds.

For normal ears, the threshold of audibility in the low treble (2,000 to 5,000 Hz) is around a 0-dB sound-pressure level (SPL). But at other frequencies the threshold is higher, several tens of decibels higher at the low- and high-frequency ends of the audible range. That means that sounds at frequencies below 2,000 Hz or above 5,000 Hz have to be louder than a 0-dB SPL ever to be heard at all. It also means that good reproduction of truly audible, above-threshold sounds does not require recording or reproduction of any sounds below the threshold, even if they are picked up by the microphones and would normally impinge on your eardrums in a live listening situation. This situation is graphically depicted in Figure A, where some of the frequency components of a sound spectrum fall below the absolute-threshold curve.

The second main psychoacoustical phenomenon behind the operation of PASC is masking. A common example is the

inaudibility of a nearby whisper on a busy street corner, when that same whisper could be heard clearly in a quiet room. On the street corner, the whisper is masked by the louder sounds of the crowds and traffic. The whisper does hit your eardrum, but you don't perceive it. The masking phenomenon is one of the most thoroughly studied in all of psychoacoustics.

Masking can be thought of as a raising of the hearing threshold in the neighborhood of audible sound components, as illustrated in Figure B, which shows triangular regions where the threshold of audibility is raised because of louder tones in the spectrum. Any sound falling either below the absolute threshold level or within the triangular masked areas will be inaudible and need not be recorded. In practice, since most music contains audible sound most of the time, it is the masking effect rather than the absolute threshold that mainly determines which sounds are inaudible.

Note that audible parts of the music spectrum in Figure B "stick out" of the masking/threshold curve by varying amounts. In PASC, the level of each audible spectral component, together with the distance from its peak to the masking level, determines how many bits are allotted to encode that spectral component. The object is to encode each component with the fewest bits possible in such a way that the distortion and noise added by that encoding is hidden on playback by the same overall masking curve (Figure C). If a PASC encoder has bits "left over" after this minimum criterion is met, more bits are assigned to drive the noise and distortion lower still, up to the limit imposed by the recording data rate of 384,000 bits per second.

In summary, the PASC system "loses" data in three places:

1. It ignores totally inaudible sounds.
2. It ignores sounds masked by louder sounds elsewhere in the spectrum.
3. It records the remaining, audible

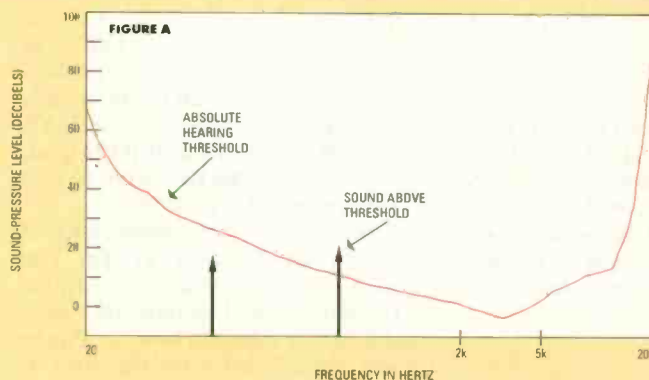


Figure A.
A typical absolute-threshold-of-hearing curve.

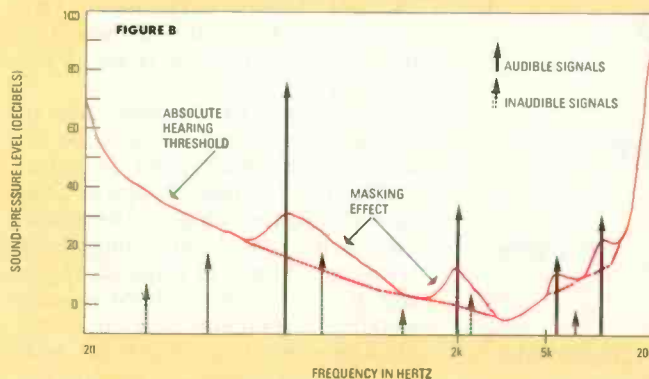


Figure B.
How loud audible sounds mask softer ones.

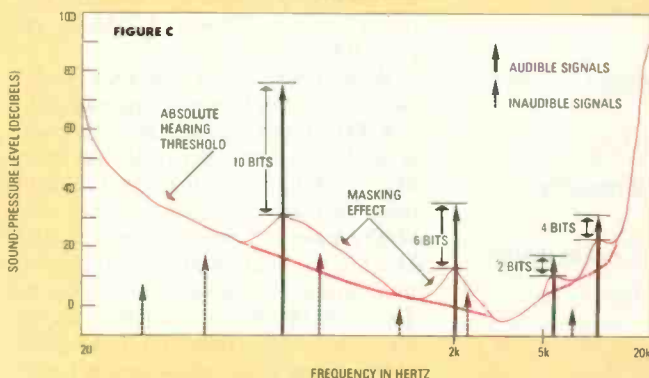


Figure C. The same as Figure B except for the bit indications. In the PASC system, bits are assigned only as required.

sounds with as few bits as possible, usually far fewer than 16, without creating audible noise or distortion.

To make a PASC coder, all you need is (1) a means of continuously and rapidly sorting and classifying every sound component to decide which ones are below the audible threshold or are masked by others and (2) a way to assign bits to the remaining audible sounds. Enter the power of special-purpose digital-computer chips, which can rapidly perform such complicated analysis.

What ultimately ends up on a DCC tape is not a single, complex audio waveform encoded into bits, as on a CD or DAT, but a collection of simpler waveforms that will

reconstitute an audio waveform when run through the PASC decoder in a DCC player. A DCC output signal will not be identical to the one originally entering the DCC recorder. Subtracting the output from the input will yield a difference signal composed of the added distortion and noise caused by the bit-allocation process. But PASC has been so designed that the difference signal, though present in a DCC machine's output, will at all times (if everything is working properly) be masked by the music in the signal. PASC takes advantage of "deficiencies" of our hearing system to produce considerable efficiencies in data storage without loss of sound quality.

—D.R.

4¼ centimeters per second (1¼ ips)—a snail's pace compared to the speed of either CD or DAT. To increase the overall data-transfer rate, the DCC system puts data on eight parallel tracks in each direction of travel. Data are recorded on or played back from all eight tracks simultaneously by a stationary "thin-film" head.

A thin-film head is one whose magnetic elements are created by etching and deposition techniques related to

Highlights of DCC Technology

- Compatible with analog cassette playback
- Digital recording using the PASC data-encoding system
- Cassette shell designed to protect tape and hubs
- Video-grade tape formulation
- Multitrack thin-film analog/digital record/playback head
- Quick cueing features
- Provisions for auxiliary information and displays

those used to produce integrated circuits. The main advantage that thin-film technology brings to DCC is that it enables the fabrication of multiple narrow-track heads simultaneously, without the tedious gap-building and core-winding used to make analog heads. Thin-film heads are regularly employed in computer disk drives, and in a DCC deck they are used not only for digital recording and playback but for analog playback as well.

Even the simultaneous use of eight digital tracks will not sustain a CD-like data rate of more than a megabit per

second, however. The radical solution applied in DCC is to reduce the data rate by recording only a fraction of the original data. At 384,000 bits per second, DCC's audio data rate is only about one-quarter that of CD or DAT. Put another way, it's as if three-quarters of a CD's audio data were thrown out when recorded onto DCC.

That's a gross oversimplification of a very sophisticated system that DCC's developers claim can deliver CD-quality sound despite its vastly reduced data rate. But how can this be when three-fourths of the data is "missing"? Answer: The sounds represented by the missing data would be inaudible even if they were stored and reproduced.

The system a DCC recorder uses to decide which sounds need to be recorded and which don't is called PASC, for Precision Adaptive Subband Coding (meaning, for the technically inclined, subband coding whose precision changes in response to the signal). The details of PASC's inner workings are far too complex to explain here, but the principles behind it are relatively simple and are covered in "The Foundations of PASC" on page 100.

While PASC brings the DCC audio data rate down to a more manageable 384,000 bits per second, the actual rate is double that because of the addition of a lot of digital error-correction data (another factor increasing DCC's reliability over the analog cassette) and bits for modulation and synchronization. So each of the eight tracks carries data at 96,000 bits per second. That is more than three times the bandwidth of an analog audio signal and is therefore unrecordable on typical analog cassette-tape formulations. To overcome this limitation, DCC tape has a magnetic layer similar to that of videotape, which can record much shorter wavelengths.

Above All, Convenience

The analog cassette's more mundane drawbacks, such as cumbersome cueing, are also overcome by technological means. Prerecorded DCC's will carry table-of-contents information indicating where on the tape each selection is located. The program area itself contains timing and cueing signals in a separate data track that DCC decks can use for rapid bidirectional cueing from any point on the tape to any other.

In addition to cueing information, a DCC can provide 400 characters per second of text data for song lyrics,

album notes, track titles, and even multiple simultaneous translations and possibly some sort of graphics. The compact disc has such extra-musical capabilities, too, but unlike DCC's, they weren't standardized when the CD system was introduced, and they've gotten very little attention from player manufacturers or record companies since. All prerecorded DCC tapes will include, at the very least, one-line, twelve-character album- and song-title listings, and the first DCC machines all have some sort of display to show this information. Beyond these "one-liners," any additional information offered on a prerecorded DCC is at the option of the record company.

In what appears to be a concession to those record companies, none of this prerecorded auxiliary information will be copyable on home DCC machines. Also, that information will not be made available in the standard consumer digital audio interface (SPDIF), nor will it be passed directly between decks in a double-transport DCC-dubbing machine. Furthermore, literature I've seen from Matsushita indicates that some of the advanced cueing data supplied on prerecorded cassettes will not be copyable either.

Further copying restrictions will be imposed by the Philips-invented Serial Copy Management System (SCMS), which is integral to the DCC standard and is expected to be legally mandatory in this country on all consumer digital-audio recording machines of any kind by the time you read this. Depending on the copyright status of the original material, SCMS restricts the number of generations of direct digital-to-digital copies that can be made. You could, for example, make any number of copies of a CD from that CD. But none of the copies you make will be copyable by digital-to-digital cloning (you could still use a DCC recorder's analog inputs to copy copies, however).

The rationale behind SCMS is to prevent a geometric progression of digital tape clones from a single original while not restricting the most common non-copyright-infringing uses of a home tape recorder. SCMS and all DCC's developers are expecting that the new format's sound quality, ease of use, and backward compatibility with the analog cassette will enable its market penetration "to surpass even that of the CD, both in terms of product quantity and rapidity of acceptance." It's up to you to decide that, now that DCC has arrived. □



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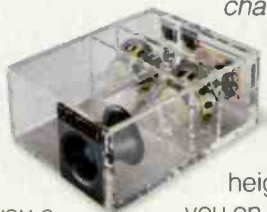
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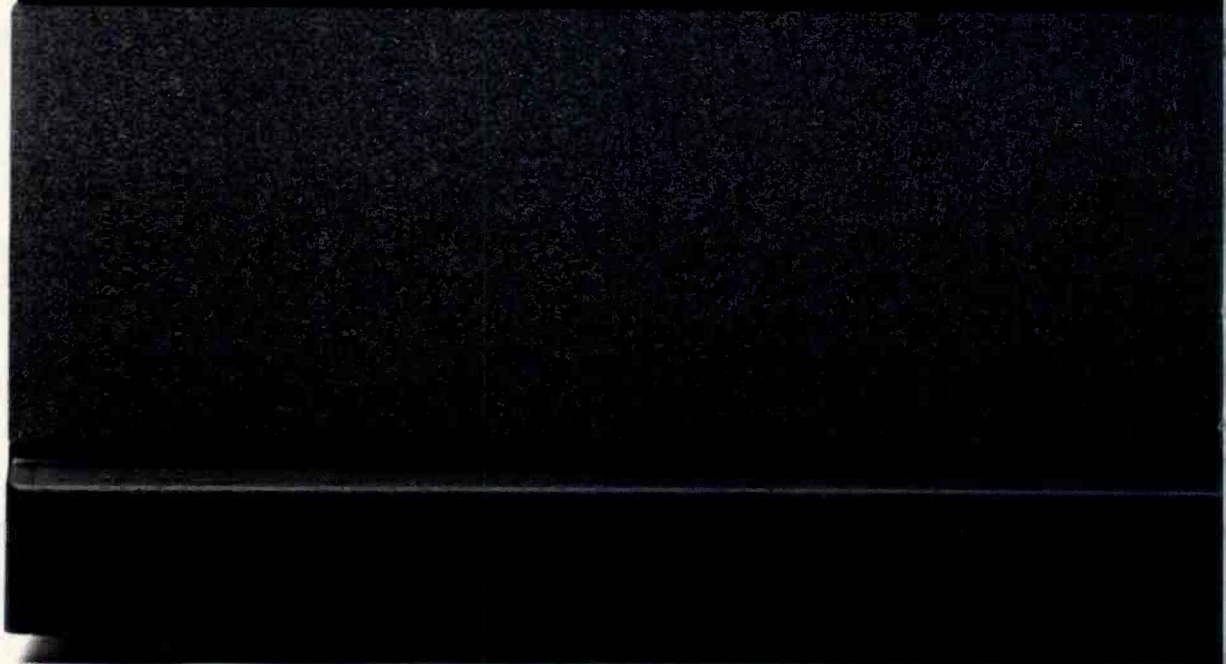
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REPORT

PHILIPS DCC900 DCC DECK

**Just how good is
the world's first
Digital Compact
Cassette recorder?**

BY KEN C. POHLMANN

FROM its home base in the Netherlands, Philips has grown into a huge multinational company that makes a wide range of high-tech products. Readers of STEREO REVIEW are probably most familiar with Philips for its role as inventor and co-developer of the compact disc, its audio equipment (sold under the Philips, Marantz, and Magnavox brands), and its recordings (Deutsche Grammophon, London, Philips, Polydor), but its various branches make everything from light bulbs to television sets. The company's first major contribution to audio was not the compact disc, but the original analog compact cassette, which went on to become the most popular music carrier in history. And now, with

the help of Matsushita, Philips has created a new system that permits high-quality digital audio to be recorded and played back on a new tape cassette developed for the purpose, while also enabling playback of ordinary analog cassettes. This system is called Digital Compact Cassette, or DCC.

The way DCC works is explained in "Inside DCC" on page 98, but key to the system are improvements in magnetic-head and data-coding technology that have occurred since the development of CD and DAT (digital audio tape). Philips has taken advantage of these improvements to create a format that can record digital signals using tape-transport mechanisms like those already in use for analog cassettes. This approach

PHOTO BY JOCK P. LEUNG



holds the promise of delivering a combination of very high sound quality, low price, and portability, all without surrendering compatibility with the vast existing library of music on analog cassette.

The culmination of three years of research and development is the world's first DCC deck: the Philips DCC900. Its outward appearance is conservative, even staid, and belies the high technology within, but closer examination reveals an unusual control panel combining elements from analog cassette, CD, and DAT decks.

A POWER on/off button and infrared remote-control sensor are nestled in a bottom corner, and nearby is a switch for control by an external timer as well as a playback selector for Dolby B, Dolby C, or no noise reduction. On the opposite side of the panel is a selector for analog, coaxial digital, or optical digital input; there's also an automatic option,

mode. It is important to use the Append button when making tapes because it records track and time information on a tape's subcode track.

Once the deck is in record-pause mode, the record button is used to start recording. The Mute button is used to record a 3-second silent interval in the usual way, but since this is a digital recorder, there are some additional twists. During playback, for example, you can use the Mute button to mark an area not to be played, which can be useful for such things as editing out a false start in a recording. Similarly, you can use the Mute button to insert a skip marker or to skip the remaining portion of a track. The CD Sync button is used to synchronize a recording with the start of CD playback in an ESI BUS system.

Playback functions are handled by seven buttons on the lower panel. The Side A/B button reverses the direction of tape travel (all DCC decks will have autoreverse transports). The Previous

current track. The stop button halts playback.

An entire group of buttons is dedicated to manipulating three marker functions: track-start, reverse, and next-side. These markers are written to the subcode track and can be used to index DCC tapes to expedite access to particular sections. The Auto Start Marker button sets the recorder to sense the beginnings of tracks and insert track numbers. This function works automatically when recording from a digital input, but with an analog input you must engage it manually. The Start Marker Write button is used to write a new track number manually. The Renumber button checks a completed user-recorded tape for a correct sequence of track numbers, if necessary reassigning them. The Next Marker Write button marks the end of recording on a tape side and writes the next marker on the other side (if there's room); during playback, the deck will read the end-of-side marker, fast-forward to the end of the tape, and begin playing the opposite side. The Reverse Marker Write button signals the player to reverse playback at that point. The Marker Erase button eliminates an existing marker at the current location.

A repeat button is used to repeat the current track or the entire tape. Two buttons control the display. The Time button selects different time displays—absolute time (from the beginning of the tape), track time, and remaining time—or a simple tape counter. The Text button lets you scroll through the textual information provided on prerecorded DCC tapes. Depending on the particular release, you may find the album title, track titles, artist names, total number of tracks, and total time. User-recorded tapes cannot include any text information, however, bringing up only a counter display until the start marker is encountered and a track number appears.

Besides basic information, the DCC900's blue, fluorescent, twelve-character display can provide troubleshooting suggestions, such as to check the type of input signal. Among the host of other indicators are those for Dolby B or C, repeat, sampling frequency (32, 44.1, or 48 kHz), marker status, cassette side, copy prohibition, and type of input. In addition, two horizontal bar graphs show the signal level during recording and playback over a range of -50 to 0 dB for digital tapes and -40 to +10 dB for analog tapes.



The DCC900's remote control has most front-panel functions plus a few twists of its own.

which selects the correct input automatically when the recorder is connected to a system using the Philips ESI BUS component-interconnection scheme. A large rotary knob sets recording levels for analog input signals, and a smaller knob underneath sets the analog-input channel balance. There is also an open/close button for the CD-like cassette drawer, as well as a headphone jack with level control.

Recording functions are handled by five buttons on a lower panel, some of them similar to those you'd find on an ordinary cassette deck. One that is new is the Append button, which causes the deck to find the beginning of a blank cassette and create a buffer area there or to locate the end of the last selection on a partially recorded tape; in either case, the procedure ends with the deck in record-pause

mode. Track button returns to the start of the preceding track on either an analog or digital tape, and the Next Track button forwards the tape to the start of the next track. DCC decks use a smart sensing system: When you select a track on a DCC, the deck automatically knows whether to reverse tape direction to locate the track in the shortest possible time.

The Previous Track and Next Track buttons also provide a new feature called title search. When you have a prerecorded tape in the stop mode, you can use these buttons to scroll through a title list, then select the one you want by pressing the play button. The Backward and Forward buttons are used to fast-wind a tape. The play button starts playback, and if you press it while a tape is already playing, the deck will rewind to the start of the

The DCC900's back panel provides a full complement of analog and digital inputs and outputs. Specifically, there are six analog phono connectors for line input and fixed and variable output, two phono connectors for coaxial digital input and output, and two Toslink connectors for optical digital input and output. The digital connectors adhere to the SPDIF standard and permit direct digital recording from a CD player or other digital source. Certainly you should use a digital input whenever possible, but all DCC decks contain SCMS (Serial Copy Management System) circuitry that prevents more than a single generation of direct digital copying (in other words, you can make a digital copy of a digital original but not of a previous digital copy). Finally, the back panel has two phono jacks for the Philips ESI BUS and an internal/external switch for the front-panel infrared sensor, which should be set to the external position when the deck is connected to an ESI BUS.

A peek inside the DCC900 reveals rather tidy construction. Many first-generation CD players contained jungles of circuit boards and wires, but Philips has integrated many of the elements of the DCC900 into a fairly concise chip set and kept wiring harnesses to a reasonable number. Not surprisingly, the deck incorporates a number of components originally developed for CD equipment, including the Philips Bitstream 1-bit digital-to-analog converters (it also uses Bitstream analog-to-digital converters for recording from analog inputs).

The two-motor tape transport is housed in a plastic chassis, but the interior portion that holds the cassette is made of metal and appears to be fairly solid. A single reversible head handles digital recording and playback as well as analog playback.

Interestingly, a small label in the cassette well warns against the use of head demagnetizers, which are designed for conventional magnetic heads rather than the advanced thin-film heads used in DCC decks. Future models will undoubtedly bring further integration of electronics and mechanics, but from all appearances I would expect this unit to be reliable and long-lived.

The supplied remote control duplicates most of the front panel's functions and adds a few twists of its own. There are buttons for tape-transport, recording, display, and marker functions. There's also a volume control that sets the level at the unit's rear-panel variable analog output and a ten-

key pad for selecting track numbers directly.

The Philips DCC900 measures 17 inches wide, 5½ inches high, and 11 inches deep, and it weighs about 20 pounds. Price: \$799.

Lab Tests

Our laboratory-testing and critical-listening sessions were cut slightly short by the arrival of Hurricane Andrew, which hammered each and every concrete block that houses Hammer Laboratories. The structure and most of its facilities survived intact, but several test instruments were sucked out a window and borne away, presumably to land somewhere in Kansas. As I doubt that these instruments have retained their calibration, I will not prevail on Midwestern wheat farmers to return them to me in Miami.

Fortunately, we were able to run full digital playback, digital record/playback, and analog playback measurements before the big winds shut us down. The digital measurements showed strong performance, but it is important to remember that the DCC format uses a perceptual-coding system that Philips calls PASC (for Precision Adaptive Subband Coding) to reduce the amount of data that must be stored on the tape, so conventional measurements, designed to measure linear performance, cannot give a complete picture. (Generally speaking, a good perceptual coder will probably sound better than its linear measurements might suggest.)

EVEN so, the DCC900's numbers were quite good. Digital playback (using a Philips DCC test tape with measurements taken at the analog outputs) showed very flat frequency response, signal-to-noise ratio (S/N) around 100 dB, channel separation exceeding 90 dB, and total harmonic distortion plus noise (THD + N) of less than 0.003 percent. There was a little more linearity error at -90 dB than we see in most contemporary CD players; I hope that production units fare better in this respect than the prototype we were given to test.

Digital recording and playback using a blank DCC tape (test signals passing through the DCC900's analog inputs and outputs) showed similarly strong numbers, with the typical degradation that one would expect after adding the analog input circuitry to the test loop. Frequency response was still quite flat, S/N hovered around 90 dB, channel separation exceeded 100 dB, and THD + N was still less than



LABORATORY MEASUREMENTS

Record/playback measurements were made through the analog inputs, playback measurements at the analog outputs. Measurements listed are for the worse of the two channels.

Fast-wind time (C-90/DCC-90) 148 seconds

Speed error

analog -0.38%
digital below measurement limit

Wow-and-flutter

analog (IEC peak-weighted) 0.11%
digital below measurement limit

Line input for indicated 0 dB 210 mV

Line output for indicated 0 dB 1.86 volts

DIGITAL PLAYBACK

Frequency response
+0.02, -0.04 dB, 16 to 20,000 Hz

Channel separation

1,000 Hz 93.9 dB
10,000 Hz 93.9 dB

Signal-to-noise ratio

A-weighted 99.3 dB
unweighted 93.6 dB

Distortion (THD + N at 1,000 Hz) 0.003%

Linearity error (at -90 dB) +3.7 dB

DIGITAL RECORD/PLAYBACK

Frequency response
+0.02, -0.06 dB, 16 to 20,000 Hz

Channel separation

1,000 Hz 103.9 dB
10,000 Hz 101.4 dB

Signal-to-noise ratio

A-weighted 91.5 dB
unweighted 87.2 dB

Distortion (THD + N at 1,000 Hz) 0.006%

Linearity error (at -90 dB) +10.3 dB

ANALOG PLAYBACK

Frequency response
+1.6, -0.2 dB, 32 to 18,000 Hz

Channel separation

1,000 Hz 46.1 dB
10,000 Hz 47.1 dB

Signal-to-noise ratio

no noise reduction (A-weighted) 57.1 dB
no noise reduction (unweighted) 53.1 dB

Dolby B (unweighted) 56.7 dB

Dolby C (unweighted) 62.5 dB

Distortion (THD + N at 1,000 Hz) 0.64%

0.007 percent. As one would expect, low-level linearity error doubled relative to the playback-only measurement, reaching 10 dB.

Analog playback performance was good but not spectacular. Frequency response rivaled that of high-end analog-only cassette decks, with the exception of a low-frequency bump in the right channel. Noise measurements were also about on a par with those of good analog decks, as were channel separation and distortion. Speed error and wow-and-flutter were somewhat lower than in many analog decks, perhaps reflecting greater precision in the DCC transport's mechanical design. On the other hand, the fast-winding time was a very poky 2½ minutes. I hope that the DCC system's ability to read its markers does not demand this slow speed and that future models can improve on this time (Philips has suggested that they will). In short, even if it's not lightning fast, the DCC900 should do a good job of playing existing analog cassettes.

Critical Listening

We conducted several hours of critical listening just before Andrew hit. Casual A/B comparisons of high-quality audio electronics are usually meaningless. For example, unless output levels are carefully matched, you'll hear things that sound like differences in tonal balance or stereo imaging but are in fact caused solely by level differences, not actual sound quality. So for this test we took several precautions. First, we assembled a high-fidelity sound system, including a Marantz CD-11 mkII CD player, Conrad-Johnson Motif MC 10 preamplifier and MS 2001 power amplifier, Mobile Fidelity Sound Lab Ultramp D/A converter, Sony PCM-7010 DAT recorder, and KEF Model 107 loudspeakers.

Most important, we took care to provide a fair comparison between DCC and CD by routing the digital outputs of the DCC900 deck and the reference CD player to the outboard Ultramp D/A converter, preventing any differences in their D/A converters and analog output stages from introducing audible differences in playback. In addition, to insure that any differences in the digital interconnections could not possibly be a factor, we routed the outputs from both the CD player and the DCC900 through the PCM-7010 DAT deck, which relocked both data streams before sending them to the outboard converter.

For the test, we recorded a number of CD's onto DCC's through the

DCC900's digital input. Although the input signals bypassed the deck's A/D converter, they did go through the PASC perceptual coder, and the playback signals went through the PASC decoder. We then compared the PASC-processed recording with the original CD by switching between the digital outputs of the DCC900 deck and the CD player.

WHEN I began the listening trials, it was immediately apparent that the DCC recordings were audibly identical or nearly identical to the original CD's. I listened for a number of factors, such as tight bass punch, fast transient response, and smooth high frequencies. As I started listening, I would think I had pinpointed a difference, only to find that I could not consistently identify it on repeated trials. As time wore on, and the wind outside grew stronger, I stopped trying to identify particular artifacts and instead settled back and compared the total musical quality of one source with that of the other. After some time, I *thought* I heard a subtle difference between them. The DCC recordings seemed to have a somewhat more restrained, subdued sound quality than the originals. The effect was not unpleasant, seeming just barely noticeable during certain passages; practically speaking, it was inconsequential. To determine whether I was in fact hearing a difference or just imagining one, I started a new listening trial, but then the storm hit.

Our answer to the question of whether a DCC recording of a CD is audibly distinguishable from the original will have to wait for the more complete trials we have planned. Meanwhile, anyone who expects to find that perceptual coding is hokum, or that their ears transcend the physiological constraints upon which it is based, will be shocked by the very high-fidelity sound DCC actually delivers. There is absolutely no question that it rivals CD sound quality.

Conclusions

The DCC900 operates very much like a CD or DAT player; in other words, the DCC format is clearly a generation or two beyond analog cassettes. While owners of DCC decks will certainly appreciate the ability to play their analog cassette collection, over time they will undoubtedly find themselves listening less and less to analog and more and more to digital. DCC's compatibility with existing analog cassettes is just a bridge to the

not-so-distant future when digital recording will entirely supplant analog.

There is no question that DCC easily beats the analog cassette in both performance and convenience. A more debatable question is whether DCC has enough perks to compete with CD and the forthcoming Mini Disc (MD). The DCC900's text displays and marker conveniences greatly add to the format's appeal. The title-search feature is especially cool—never again will you have to consult the tape box to correlate a song title with its track number. (I sure wish CD players had this feature.) On the other hand, DCC is still a tape format; track-access times are far slower than with CD or even DAT, which uses much shorter physical tape lengths. And the DCC900's tape transport, though certainly adequate, was frustratingly primitive relative to the machine's otherwise high-tech character. I suspect that many people are abandoning analog cassettes not just because of sound quality but also for conveniences like fast access, where CD and MD are strong. If DCC is to compete well against *these* rivals, much faster tape transports will be needed.

More troubling, the DCC900 we tested, which was a preproduction model, suffered from head clogging. After playing a number of analog tapes, the deck would only intermittently play DCC tapes. Head cleaning solved this particular failure, but even with clean heads, the deck emitted an occasional click as uncorrected errors surfaced in the bit stream—possibly also attributable to head clogging. Philips says that the heads used in DCC decks are more sensitive to oxide shedding from low-quality tapes than are conventional heads (tape shedding can also be exacerbated by high humidity, which we have a lot of in Miami even when there's no hurricane), and that it may be necessary to clean the heads more often than you would an analog cassette deck's.

OVERALL, however, I suspect that such limitations as the DCC900's clunky transport will be overcome in future models and that obvious problems such as error clicks will be fixed before final production of the DCC900 actually begins. In that case, given its analog/digital compatibility, new features such as text display and title search, and gorgeous sound quality, it is easy to see DCC as the worthy successor to the analog cassette and a strong element in the mix of future audio products. □



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SYSTEMS

BY REBECCA DAY

Lethal Weapon

IT started out innocently enough. Rocco Salerno asked a DJ friend to recommend how he could get more bass from his stereo system, a receiver, a CD player, and Bose speakers. Then something happened. "Power and bass were what I was looking for," says the Westchester County, New York, attorney. "I got into the stereo magazines, and one thing led to another. It just sort of mushroomed." Now he has forty-odd components, a 35-inch TV, and main-channel speakers bigger than he is.

Salerno spent three years designing and installing the multiroom system, snaking more than half a mile of Monster Cable wiring through walls, attics, and underground conduits. The 78-inch-high VMPS Super Tower II speakers and the VMPS subwoofer were kit projects he built on weekends.

Most of the source equipment is on the right of the cabinet or above the TV. The left side is reserved for rack-mountable accessories. In the top third are a switch panel for the five fans in the back of the cabinet, a Furman PL 8 power strip, light module, and surge suppressor, an Apex Type C Aural Exciter, a BBE 422A Sonic Maximizer, and a dbx program-route selector, dynamic-range controller, "subharmonic synthesizer," and noise-reduction system.

The middle of the left panel starts with another Furman surge protector/outlet strip but with an LED readout ("I like the lights," Salerno admits). Below it are a Rane AC-22 active crossover for the subwoofer, a Rane RA-27 splitter/mixer for biamping the main speakers, a Rane RA-27 real-time analyzer, and a Rane GE-14 graphic equalizer. Finally, there are three triple-deck sandwiches, each comprising an Adcom GFA-555 power amplifier, a vent, and a Furman VU-40 stereo system monitor, plus two Adcom GFA-555II amps; all are plugged into a Tripp-Lite voltage regulator at the very bottom.

The audio/video source and remote equipment on the right includes a

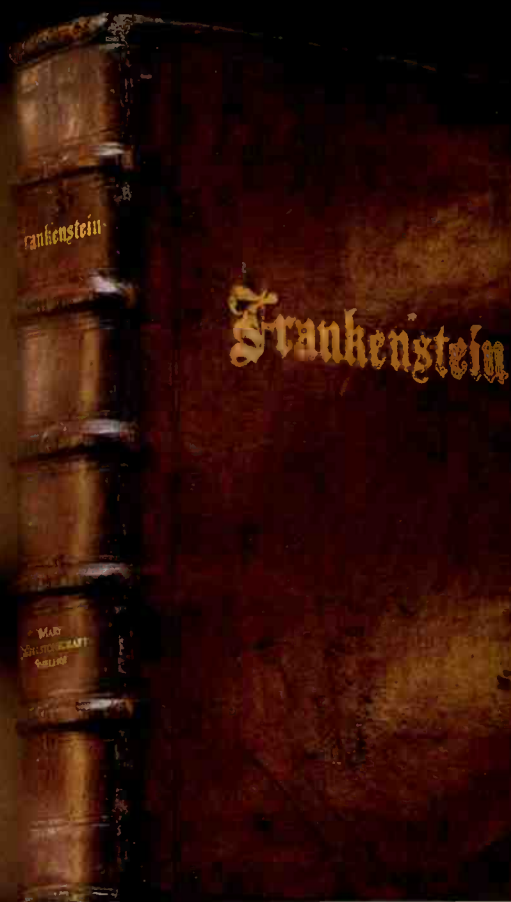
Carver CT-17 preamp/tuner, Sony CDP-C15ESD and CDP-C900 ten-disc CD changers, a JVC XL-V400 CD player, a Mitsubishi HS-430UR hi-fi VCR, a JVC HR-SC1000U Super VHS VCR, a BSR EQ-3000 equalizer/spectrum analyzer, an Adcom GFS-6 speaker selector, an Adcom GTP-500 II tuner/preamp for the living room and outside zone, and a Rane SM-26 splitter/mixer and MA-6 multichannel amplifier for the remote speakers.

Components above the screen include three Adcom-535L power amplifiers just for video, a Vidicraft VDM-300S VidiMate video processor for dubbing, a BBE 1002 Sonic Maximizer, a Technics SH-8017 equalizer to strengthen the highs and lows in video soundtrack reproduction, a dbx 1BX-DS dynamic-range controller, a dbx 500XR audio/video remote selector to channel the VCR's and processors, and a Sony SDP-777ES digital surround processor. Underneath the JVC AV3590S monitor are three Phase Technology speakers (for video left-, center-, and right-channel sound) on a baffle behind a custom-made grille. Two matching rear speakers fire down from the ceiling above the couch.

Running in bridged mode, the big Adcom amps deliver 600 watts each, satisfying Salerno's appetite for power. Feeding his obsession with bass, each 6½-foot speaker system includes a 15-inch floor-firing subwoofer, a 15-inch woofer, two 12-inch drivers, two 10-inchers, four 5-inchers, four tweeters, and a supertweeter. Might there be just a little overkill? Even Salerno admits that the separate subwoofer isn't necessary for music listening. But it does supplement the smaller Phase Tech speakers in the video system. "I was green when I first got it," he says. "I had the settings up too high on the volume level and the crossover. There was this diving-board scene in *Lethal Weapon* with an explosion. The whole room shook, and then my amp blew up." His wife, Debbie, remembers it well. "It sounded like a plane hit the house." □

PHOTO: GEOFFREY GROSS

Once again, science has old parts and bring



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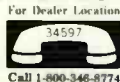
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Joe Ely's American Music, Pure and Simple

OKAY, America, you blew it. You didn't take notice when Joe Ely was originally on MCA in the Seventies, recording such Texas-bred, juke-joint classics as "Musta Notta Gotta Lotta" and "Honky Tonk Masquerade." You didn't pay much attention when he subsequently cut two fine albums for the high-profile indie label Hightone, either. Now he's back on MCA, recording in Nashville with that city's most farsighted producer, Tony Brown, and a tip of the ten-gallon is due all concerned: The new "Love and Danger" is vintage Joe Ely. Now, America, it's your turn to get hip to a home-grown talent so huge they ought to name a national park after him.

While everybody and his brother is crying in his beer about the shape America is in, Ely's characters are still running down the highway chasing their dreams. That Ely has the pluck to conjure dreams in these shabby times is a testament to the never-say-die vitality of the man and his music. Rocking and rolling with unflappable, contagious verve, "Love and Danger" is a fine antidote to disillusionment. Ely makes American music, pure and simple, and categories be damned. It's got the dynamic locomotion of rock, the righteous sassiness of the blues, the narrative twang of country, and the hook-filled, melodic sheen of pop.

Almost as if he knew that this album was his last, best chance to gain a broader audience, "Love and Danger" is easily Ely's best record in a decade. From his own pen have come seven new tunes, ranging from the smoldering, Jimmy Reed-style blues of *Pins and Needles* to the romantic glow of *Slow You Down*, a torrent of sweet, seductive images ("I wanna smear the moonlight in your skin / And put Orion in your crown") sung with aching sincerity to a truck-stop girl. Ely co-wrote *Highways and Heartaches* with the guitarist David Grissom, and it's a high-flying travelogue with a mesmerizing chorus that uses the open road as a metaphor for running away from love. Like most of Ely's songs, it's filled with believable characters and telling details: "I wonder if she's watchin' TV / Cryin' with soap-opera stars / I wonder if she sees them in me / And if we've gone too far." He describes a completely different type of character in *She Collected*, a song as thorny as a desert cactus in its disdain for a woman who uses and discards men to pump up her ego. The punch line is delivered with typical Elyian aplomb: "When her carpenter



came / To measure me for a frame / I walked right out of her collection."

Ely proves he can pick a good tune as well as write one, unearthing a pair of dandies by fellow Texas singer/songwriter Robert Earl Keen. *The Road Goes On Forever* is especially remarkable, sounding not so much like a song as a Hollywood script treatment, incorporating pool halls, drug deals, and aimless lives into an escalating narrative. Keen's other contribution, *Whenever Kindness Fails*, also tells a story, shaping characters who, while not exactly sympathetic, have rationales for their violent, antisocial behavior.

Though "Love and Danger" will seem poppier than usual to long-time Ely fans,

the spines of the songs are still David Grissom's hard-biting electric guitar and Ely's forceful vocal phrasing. With a tone set by the opening track, *Sleepless in Love* (Ely's take on the *Born to Run* myth, set on the Dallas freeway), the album offers a panoramic look at love and danger by an artist who clearly knows what he's singing about.

Parke Puterbaugh

JOE ELY: *Love and Danger*

Sleepless in Love; Pins and Needles; Love Is the Beating of Hearts; Slow You Down; The Road Goes On Forever; Settle for Love; Highways and Heartaches; Whenever Kindness Fails; She Collected; Everynight

MCA 10584 (42 min)

Russian Music for Cello and Orchestra

THE cellist Julian Lloyd Webber and the conductor Maxim Shostakovich have joined forces with the London Symphony Orchestra to bring us the first generally available recording of Nikolai Miaskovsky's Cello Concerto since the Rostropovich-Sargent version of 1957, along with works by Shostakovich and Tchaikovsky. The Miaskovsky concerto, a first-class work in the post-Romantic Russian manner, is in two movements, one ruminatively lyrical, the other contrasting lyrical and

dynamic elements. It should be better known than it is. The soloist and conductor here take a decidedly broader view of the music than the young Rostropovich did, but the music retains its warmth and viability either way.

As a kind of intermezzo, we get the original version of a slow movement from Shostakovich's 1935 ballet *The Limpid Stream*, which suffered the same treatment under Stalin as his opera *Lady Macbeth of Mtsensk* and Fourth Symphony (its premiere was canceled). It

does not, however, rank with those works, amounting to second-drawer Shostakovich in a neo-Tchaikovsky vein. (Much of the other music from the ballet turns up in recordings of the various ballet suites compiled by Levon Avtovmian.)

The third performance on the CD, Tchaikovsky's Rococo Variations, is of special interest in that it is one of the very few recorded versions of the music as it was written, with the variations in the correct order and the original finale restored. What we usually hear is an edition prepared by Wilhelm Fitzhagen, who commissioned the piece and had it published without Tchaikovsky's approval, much to the composer's rage and disgust. The version here is not as flashy as what we're used to, but it *is* the

genuine article and very beautifully played in the bargain. Webber's cello playing is mellifluous rather than aggressively virtuosic, but that style goes with the character of most of the music here, the exception being the more brilliant patches in the Miaskovsky concerto, where Rostropovich remains unbeatable. If sound is a major consideration, you can't go wrong with the new Philips recording.

David Hall

TCHAIKOVSKY: Variations on a Rococo Theme; Nocturne in D Minor.

MIASKOVSKY: Cello Concerto.

SHOSTAKOVICH: The Limpid Stream, Adagio.

Webber; London Symphony Orchestra, M. Shostakovich

PHILIPS 434 106 (64 min)



PHILIPS CLASSICS

Julian Lloyd Webber

Luna²: Velvet Underground Spoken Here

SOMETIMES it seems like the most overused words in rock criticism are "reminiscent of the Velvet Underground," but in the case of "Lunapark," the splendid new Elektra album from Luna², they're unavoidable. So I'm sorry, folks, but the band and the album *are* reminiscent of the Velvet Underground. Quite a lot, in fact. Where this gets interesting, however, is that Luna²'s point of departure isn't primarily the whips-and-chains/feedback explosions of the first two Velvets albums, the ones that most obviously anticipated punk. Instead, the band harks back to the Velvets' third album,

(post-John Cale), with its angelic harmonies, chiming guitars, and delicate, almost folkish songs.

There's a lot of that sort of thing in "Lunapark," and the chief architect of it is the lead singer, songwriter, and guitarist, Dean Warsham, a Harvard grad who previously perfected his Lou Reed impressions as the frontman for the cult favorite Galaxie 500. Like most Reed wannabe's, Warsham lacks the master's reach and depth, but he has his own lyrical voice—dry and deadpan funny—and a not inconsiderable way with words (from *Slide*: "SoHo's got the boots / NoHo's got the crack / New England's

got the foliage / but I'm not going back"). He's also got a Velvets-like fondness for inserting the most homicidally atonal guitar outbursts imaginable into otherwise conventional (and attractive) melodic structures. Warsham and his songs are complemented here by an all-but-perfect rhythm section: The bassist is Justin Harwood, whose relaxed, melodic lines sound uncannily like the Velvets' Doug Yule, and the drummer is Stanley Demeski, a former Feelie whose obviously formidable technique cannot conceal a debt to the Velvets' untutored Maureen Tucker.

If there's a flaw in all this, it's Warsham's obligatory postpunk ironic distance—and, of course, more than a hint of formalism. Certainly the Velvets songs that inspired Warsham's musings dealt with bigger issues and were far more passionately felt than anything in "Lunapark." And despite the glorious noises made here (ably caught by Fred Maher's uncluttered production), occasionally the band is so—well, dagnabbit—reminiscent of the Velvet Underground that, depending on your mood, you might find yourself making *Beatlemania* comparisons. Most of the time, however, I think you'll find the album so disarming that you'll ignore its antecedents and enjoy it on its own terms. And just think—post-Nirvana it might actually get played on the radio. Wondrous times we live in.

Steve Simels

Luna²:
postpunk
irony and
glorious
guitar
noises



PHOTO: MICHAEL LAVINE/ELEKTRA

LUNA²: Lunapark

Slide; Anesthesia; Slash Your Tires; Crazy People; Time; Smile; I Can't Wait; Hey Sister; I Want Everything; Time to Quit; Goodbye; We're Both Confused

ELEKTRA 61360 (42 min)



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All-Star Brahms Sextets

THE gathering together of the violinists Isaac Stern and Cho-Liang Lin, the violists Jaime Laredo and Michael Tree, and the cellists Yo-Yo Ma and Sharon Robinson to record Brahms's two string sextets for Sony Classical is the latest, and one of the most striking, of Mr. Stern's numerous chamber-music projects. Like his others in the last fifty years or more, it reflects the impulse that motivates first-rate soloists to seek opportunities to take part in this intimate and uniquely nurturing category of musicmaking with colleagues on their own level, and it demon-

pelled with a fine sense of momentum. There is exceptional dramatic tension in Op. 18, and the scherzo in the same work has an uncommonly bracing, dancelike quality. The scherzo in Op. 36, on the other hand, is allowed to breathe more naturally than usual, and because full exposition repeats are taken in both opening movements the total timing of the two sextets comes to a minute or two beyond the capacity of a single disc. The 41-minute Op. 36 has the second disc all to itself; the somewhat shorter Op. 18 is followed on the first disc by Emanuel Ax's eloquent performance of Brahms's



Yo-Yo Ma, Isaac Stern, and colleagues at Carnegie Hall

strates again that on that level there is no real generation gap.

The six musicians performed these works together in concert several times before they recorded them in the Troy Savings Bank Music Hall in upstate New York three years ago. Apparent here are a sense of urgency and a cumulative give and take carried over from those live events. There is an abundance of good old-fashioned commitment and warmth of heart in the way these artists respond to one another and to the music, probing the darker facets of both works without striking a tragic pose, and lending a particular radiance to the frequent shafts of light.

While these two works usually fit comfortably on a single CD, this is a two-disc set. Tempos are by no means indulgent; both slow movements are pro-

own piano arrangement of the set of variations that constitutes that work's slow movement.

Whether Ax's little bonus makes up for the extra cost of this set over that of the several single-disc versions of the sextets (among which my own choice would be the Kocian Quartet with members of the Smetana Quartet on Denon) is for the individual listener to decide—as is, for that matter, the desirability of those first-movement repeats. Once heard, though, the set is likely to be self-recommending. The sound is close up and vivid, occasionally a little fiery in the sextets. *Richard Freed*

BRAHMS: String Sextets Op. 18 and Op. 36; Theme and Variations for Piano
Stern, Lin, Laredo, Tree, Ma, Robinson; Ax
SONY S2K 45820 (two discs, 90 min)

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• **THE FABULOUS THUNDERBIRDS:**

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CLASSICAL

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• **HAYDN AND MOZART: Trumpet**

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Tannhäuser, Tristan and Isolde, Die Walküre, and Götterdämmerung. Farrell, Munch. RCA VICTOR 60686. The *Liebestod* and *Immolation Scene*, recorded in 1957, are reason enough to own this CD featuring the great American dramatic soprano Eileen Farrell with Charles Munch and the Boston Symphony.

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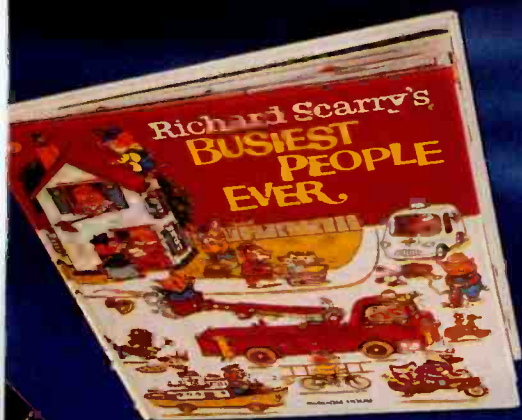
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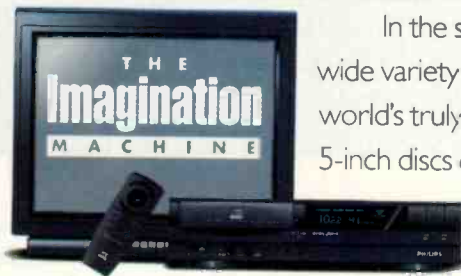
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TONY BENNETT**Perfectly Frank**

SONY/COLUMBIA 52965 (74 min)

Performance: Sturdy and kinetic**Recording: Excellent**

Like Rosemary Clooney, Barbara Lea, and very few others, Tony Bennett is a singer whose voice actually seems to get better with age—along with his unforced yet dynamic way of using it. He's also reached that enviable point where he can take songs long identified with other singers and make them seem his own. So it is here with twenty-four songs recorded over the years by Frank Sinatra. Most of the tracks are in a relaxed, lightly swinging, "soft lights" mood, with perfectly matched backing by the Ralph Sharon Trio. *I'm Glad There Is You*, *I Wished on the Moon*, and *A Nightingale Sang in Berkeley Square* are particular standouts. R.H.

BLUE RODEO**Lost Together**

ATLANTIC 82412 (66 min)

Performance: Honest**Recording: Very good**

Lost Together" is a cornucopia of solid tunes and strong arrangements from a Canadian band that just keeps getting better and better. Though their forte is a kind of cosmic country rock, taking off from roughly the same place as the reverent-outlaw twists on the Nashville verities by Gram Parsons and Elvis Costello, there's plenty of variety in "Lost Together." The band's stylistic diversity in an age of demographic categorization may make it a hard sell in America, however.

Mixing red-hot pub/punk rockers such as *Restless* with jaunty, pedal-steel-filled odes to tall pines and whispering winds such as *Western Skies*, Blue Rodeo displays versatility and verve in abundance. Scuffed, epigrammatic lead-guitar lines cut through the purr of a steel guitar in *Last to Know*, a break-up song that voices a classic country-music sentiment: "Don't say it's so / Let me be the last to know." In *Rain Down on Me*, Bobby Wiseman's keyboards fall as lightly as summer showers amid the Everly Brothers-style close-harmony vocals of the guitarist/songwriters, Jim Cuddy and Greg Keelor. Blue Rodeo reaches a peak in *Angels*, an 8-minute finale that breaks loose of gravity via jazzy breaks and an epiphany as jolting as anything in *The Electric Kool-Aid Acid Test*. It's a transfixing end to a long, engaging album. P.P.

Blue Rodeo: hard-sell cosmic country rock

ATLANTIC RECORDS

REVIEWS**POPULAR MUSIC****Discs and tapes**

**reviewed by Chris Albertson,
Phyl Garland, Ron Givens,
Roy Hemming, Alanna Nash,
Parke Puterbaugh, and
Steve Simels**

DAVID CASSIDY**Didn't You Used to Be . . .**

SCOTTI BROS. 72392 75264 (42 min)

Performance: Hermetically sealed**Recording: Okay**

Give former bubblegum star David Cassidy some credit: The title of this comeback album demonstrates a sense of humor, though as a record it's not strong enough to rouse a reunion of the Partridge Family fan club. Also to his credit, if you didn't know this was his album, you'd probably be able to listen all the way through the program of ersatz r-&-b, funk, and disco without once connecting the singer to the insidious crap Cassidy used to sing. These are slightly more cerebral and tasteful groin teasers, including a respectable revamping of Dee Clark's 1961 classic *Raindrops* and a bitter, soul-searching meditation on the relationship between parent and child (*Like Father, Like Son*). But Cassidy's voice, whether he's doing an almost passable imitation of Michael McDonald or George Michael, is simply too slight to send this material home with any convincing passion or angst. In the end, this album, held up by synthesizers, prayers, and dark, moody dreams, simply sinks, leaving not so much as an air bubble behind. A.N.

**The Chills: formalist pop****THE CHILLS****Soft Bomb**

SLASH/REPRISE 26787 (51 min)

Performance: Understated brilliance**Recording: Crisp**

Between his deft, adroit lyrics and disciplined, formalist pop tunes, Martin Philipps of the Chills sneaks in a lot of not-so-blithe commentary. In "Soft Bomb" he grapples largely with the musician's lot. A boat adrift on a sea's high swell serves as a metaphor for a band on tour in *Ocean Ocean*. The title track looks with disdain on the performer-audience relationship in rock ("They say you have to give them what they want / . . . I'm tearing all my hair out with my hands"). The intriguingly titled *Song for Randy Newman Etc.* cautions that sensitive-genius types ("men like [Brian] Wilson, [Syd] Barrett, [Scott] Walker, [Nick] Drake") are ill served by dependence on a fickle mass audience. *Entertainer* compares the musician's profession to that of a taxi driver: a hired hand who'll "keep you entertained" for a little filthy lucre.

Granted, it's all a little mopey and esoteric, but "Soft Bomb" is redeemed by its unflinching pop sheen and the fetching incongruity between the music and lyrics. Only a first-class eccentric would hang a title like *The Male Monster from the Id* on a jaunty pure-pop jig for mandolins and guitars. If there's a discernible R.E.M. influence on the rustic, quasi-acoustic arrangements, credit adjunct R.E.M.-er Peter Holsapple, who's a ubiquitous presence in "Soft Bomb." But the overall tone is a lot closer to Robyn Hitchcock, as Philipps shares a similar gift for couching his cheerful madness in an aurally accessible package. "Soft Bomb" is a diatribe—gentle and generous even at its most disillusioned—that falls easily on the ears. P.P.

EDDY CLEARWATER**Help Yourself**

BLIND PIG BP 74792 (43 min)

Performance: The real thing**Recording: Quite good**

His real name is Eddy Harrington, but a booking agent with a sense of humor dubbed him Clearwater (Chicago's top blues name was, after all, Muddy Waters). He has also performed as Guitar Eddy, and some refer



Faith No More: blistering

to him as the Chief because of his fondness for wearing Indian headdress. If you are into contemporary urban blues, you have surely heard this artist work under at least one of those names. If not, I suggest you help yourself to this album, a set of twelve tracks that attest to his versatility. The accompanying band is rock solid and greatly enhanced by Clearwater's cousin, Carey Bell, whose harmonica has long been a blues asset. The closing instrumental, *We're Out of Here*, is a bit sluggish, but the rest is pure joy.

Clearwater has a compelling voice and properly rooted guitar style. He handles the pop-oriented material skillfully, including slivers of country-and-western, but he is at his best when he digs deep down into the blues, as in *Chicago Weather Woman*, *Big Time Gambler*, and, especially, *Messed Up World*. Variety may be the spice of life, but sometimes it gets in the way, which is to say that I hope we get a dedicated blues set from the chameleonic Mr. Harrington. **C.A.**

BRENDAN CROKER
The Great Indoors

SILVERTONE 41471 (58 min)
Performance: Hit and miss
Recording: Good

Best known as a member of the Notting Hillbillies, Brendan Croker is like a lot of Englishmen who fall in love with the music of the American South. Arriving here infatuated with the Great Southern Myth, they often glorify a so-called populist sound with a glossy sheen that has little to do with the roots of the genre. The Notting Hillbillies did this all to hell and back in their 1990 album, and Croker continues the tradition here with a "gumbo" of blues, New Orleans jazz, Randy Newman-ish ditties, and homogenized reggae.

Backed by the dark and brooding guitar of Hillbilly pal Mark Knopfler (and the occasional lighthearted six-string natterings of Chet Atkins), Croker moves across much of the American landscape in fourteen songs, demonstrating the best regional absorption in the Louisiana funk of *Send Me to New Orleans* and the Chicago blues of *Anything I Can Say*. The album starts off very slowly as Croker gathers steam with too many songs intended to establish his persona as an itinerant, carefree rogue. Pretty soon, though, we see through it—he's gotten his heart not only broken but shredded,

and that ends up being the subject of his strongest musical dreams (*I Guess That Says It All, One Day*). In *Running on down the Road*, where he seems to be trying to escape not only his life but his skin, Croker is a disillusioned figure, panting for air and gasping for deliverance. Maybe he's picked up the real taste of America after all. **A.N.**

JERRY DOUGLAS
Slide Rule

SUGAR HILL 3797 (41 min)
Performance: Masterly
Recording: Good

Jerry Douglas is finally showing up on Instrumentalist of the Year nomination lists, about ten years later than he should have. America's premier dobroist, Douglas has played in literally thousands of Nashville sessions. Here he gets to come up front for what is by turns an invigorating and soothing little album.

Backed by a sterling band, which includes the impeccable Stuart Duncan on fiddle, Douglas moves through an eclectic program of bluegrass, revamped rock (*Hey Joe*), and original meditations and reflections, all of which he plays with eloquence, texture, and taste. Essentially a bluegrass-oriented musician, Douglas calls on the like-minded Brother Boys, Alan O'Bryant, Alison Krauss, and Tim O'Brien for occasional vocals, while also luring Ireland's Maura O'Connell for the affecting *It's a Beautiful Life*. One short tune (*Rain on Oliviatown*) grates on the nerves, but only

**TALES FROM
THE VAULTS**

DONOVAN

Troubadour: The Definitive Collection, 1964-1976. EPIC/LEGACY
E2K 46986 (two discs).

Poor man's Bob Dylan or visionary space cadet? You make the call. Good news: Jeff Beck, Jimmy Page, and John Bonham make impressive cameo appearances. Bad news: Don's anthemic *I Love My Shirt* is, unconscionably, not included.

THE STIFF RECORDS BOX SET

RHINO R2 71062 (four discs).
A lot of Stiff Records (1977-1988) functioned as the soundtrack to my second childhood, so there's no way I can be objective about this amazing collection—ninety-six songs by the likes of Nick Lowe, Elvis Costello, Ian Dury, Lene Lovich, Madness, Tracey Ullman, Wreckless Eric . . . and the list goes on and on. Not everything here is great, but the best stuff is out of this world, and hearing it all again makes you painfully aware that a certain kind of unselfconscious fun has all but vanished from contemporary pop and rock. An essential purchase. **Steve Simels**



because Douglas's Weissenborn guitar is woefully out of tune. That only proves he should stick with the instrument he can get more poetry out of than anyone else on earth. **A.N.**

FAITH NO MORE
Angel Dust

SLASH/REPRISE 26785 (59 min)
Performance: Relentless
Recording: Very good

Hyperactive, totally distracted, and half-mad, Faith No More uncorks a blistering spray of vitriol in "Angel Dust," aimed at those hidden forces that conspire to shape lives in the late twentieth century. If you were to cross the edgy, minor-key rock polemics of the Doors with the pulverizing attack of the Rollins Band, you'd have a rough idea of what Faith No More, and particularly its lead singer, Mike Patton, are up to in this album. Patton's lyrics defy literal analysis; rather, he fires out his rage in sharp, terse bullets that blind-side you. The object isn't any one thing so much as the whole morass—the dehumanizing corporate/capitalist/mind-control complex that the MCS dubbed "the human being lawnmower" back in 1970.

Patton peoples the songs here with a gallery of different characters: a self-help huckster in *Land of Sunshine*, a low-life rube in *RV*, a squashed, pathetic charity case in *Smaller and Smaller*. He screams venomously in *Caffeine*, which seems more about cocaine, and coats the nightmarishly epic *Everything's Ruined* in an acid bath of contempt. The band shows no quarter, either, playing with focused intensity and unabating fire. Stretches of dissonance and aural dyspepsia are relieved by relatively lighter, but no less black-humored, moments—like the infectious *Be Aggressive*, an energetic hip-hop chant that mocks our winner-take-all acquisitiveness.

On the back cover of "Angel Dust" is a photo taken in a slaughterhouse, with sides of beef, chicken carcasses, and a cow's head. To Faith No More, it's all too emblematic of our bloody appetite for consumption and destruction here in the land of the free. Though the message isn't pretty, "Angel Dust" hits home with the force of a sledgehammer. **P.P.**



FLAMIN' GROOVIES
Rock Juice

NATIONAL NAT-030 (42 min)
Performance: Great fun
Recording: Fine

The Flamin' Groovies have been making exhilarating rock-and-roll for over a quarter of a century without much to show for it except cult status, and one has to wonder why they keep plugging. Perversity? Sheer love of

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Sharp Electronics Corporation offers the latest in home theater video projectors, an integral part to any home theater. By incorporating LCD (Liquid

Crystal Display) technology, Sharp has created SharpVision video projectors that not only provide stunning, clear, larger-than-life images, but are also portable in design.

Weighing only 28 lbs., Sharp's new high resolution SharpVision model, the XV-S250ZU, is easy to take to a friend's house, move from room-to-room or store away when not in use. SharpVision adds extra convenience because it can be projected onto either a screen or a white wall.

This kind of versatility is only available with LCD projectors. The "LCD advantage" means no more large, bulky picture tubes, which make the units heavier and more cumbersome. LCDs also last years longer than standard CRT picture tubes, providing years of brilliant images and picture clarity, far superior to any other large-screen video alternatives.

SharpVision is also perfect for those who prefer to watch some programs with a smaller, standard-size television image, because SharpVision's projected image adjusts easily from a giant 150-inches down to a conventional 20-inches (measured diagonally), with a simple turn of the lens. Perfect for any size room, SharpVision needs as little as - 12.5 feet for a 100-inch image and only 18.5 feet for a 150-inch image (measured diagonally).

"Home theater is a perfect way to enhance any home environment," explains Sherman

Langer, general manager, Sharp Consumer LCD Division. "Large screen entertainment is also ideal for social get-togethers. The decision for today's family is not where to put the television, but at what picture size to watch the SharpVision."

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The top-of-the-line XV-S250ZU SharpVision has a suggested list price of \$7,495, with other SharpVision models available for under \$2,500. Imagine your favorite football player doing his endzone dance, a spectacular rock concert's laser light show with a musician playing guitar or a passionate movie scene coming to life - all right in your living room!

However, SharpVision home theater does present one problem - once you experience it, you may never want to go out again!



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Television Returns



Television vanished after two mesmerizing late-Seventies records, only to reappear now with an album so much of a piece with their earlier work that it's like they never left. If anything, Television's musical language is both more solid and more obtuse than before, embodying contradictions without qualms. The guitars of Tom Verlaine and Richard Lloyd tickle and sting, alternating terse, Morse Code-type clusters and elaborate long lines that seem to burrow for hidden meanings (check out the ultra-misterioso track *In World*). Effects are employed liberally but not ostentatiously; seldom has a wah-wah pedal produced such an understated yet eerie sound as in the brief solo section of *No Glamour for Willi*.

Verlaine revisits the haunting, spare, but rooted style he pursued in his solo instrumental album, "Warm and Cool." With Lloyd once again engaging him in elliptical thrust-and-parry, it's an exercise in guitar genius squared—something along the lines of the Ventures in outer space—with a little beat-generation bebop sensibility dropped in. Verlaine's lyrics eschew linear narrative for cryptic, William Burroughs-style cut-and-paste or imagery derived from the symbolist poets.

the music? Probably both, actually, and this new album—the band's first American release in over eight years, not counting a 1989 "Best of" compilation on Sire—is thus inspirational for both musical and extra-musical reasons, which is to say that even if it weren't good you'd have to love it. Fortunately, it's very good indeed (with one caveat I'll get to later).

The mix here is the usual purist rock-and-roll based on Fifties and Sixties models, from rockabilly to power pop, and the songwriting, by long-time Groovies leader Cyril Jordan, is uniformly sharp, from the soaring twelve-string-driven beauties of *Over My Head* to the

Driven by impulses both dangerous and romantic, he sings in *1880 or So*, "In the fragrant sweep of the evening air I could leave this world quite without a care." In *Rhyme* he ticks off disjointed phrases, leaving it to the listener to imagine the details. In a similarly fractured vein, he chants in *The Rocket*, surely the world's strangest car song, "Gotta car / gonna go / gonna go-go / in my car / rocket! / blast off!" Then there's the cryptic *Call Me Mr. Lee*, evoking some illicit transaction: "Call Mis-tah Lee, he'll know the code is broken / Tell him the dog is turning red."

Television has made no concessions to popular taste in their reunion album, once again leaving it to the intrepid listener to come to them. You'll surely revel in the mystery of their impenetrable codes, delight as they plumb the collective musical subconscious in search of rapturous release, and marvel that it ever occurred to anyone to play music of such strange, surpassing beauty. P.P.

TELEVISION

1880 or So; *Shane, She Wrote This*; *In World*; *Call Me Mr. Lee*; *Rhyme*; *No Glamour for Willi*; *Beauty Trio*; *The Rocket*; *This Tune*; *Mars*
CAPITOL 98396 (43 min)

crunching riff rockers like *Give It Away*. As a bonus, there's a clever Merseybeat-style cover of Brian Hyland's 1962 kitsch classic *Sealed with a Kiss*, which works both as a wry joke and (surprisingly) as an honest-to-God song. Overall, the album is just great, unaffected fun, and I heartily recommend it to anybody who's ever swooned over a rock record (from Presley to Nirvana). Consumer note: The production, alas, is a little slapdash, a problem that has dogged the band through its career. Critical entreaty: Somebody get these guys on a major label that will give them a decent recording budget. S.S.

JEFFREY GAINES

CHRYSALIS 21840 (49 min)

Performance: Promising

Recording: Very good

Newcomer Jeffrey Gaines has been blessed with a wealth of talent and a rare measure of insight and compassion. His debut album is eloquent about the honest, hard-working people trying to make sense of a world that gets progressively more dangerous and uncaring by the day. The subjects of the songs seem like the agenda of a contemporary support group: abrogation of fatherly responsibility (*Didn't Wanna Be Daddy*), the need for self-love (*A Dark Love Song*), fear of failure (*Hero in Me*), and paralyzing neurotic insecurity (*Scares Me More*).

Gaines is intensely sensitive but in a completely disingenuous, unaffected way, and his grasp of the gulf between inner dreams and street realities makes these twelve unvarnished narratives completely believable. Where the album as a whole comes up short is on the musical end. Gaines has a rich, expressive voice, husky and forceful; there's a hint of Elvis Costello's throaty distemper, though Gaines is more generally restrained. But the spartan musical settings aim at hushed subtleties and sometimes seem to vaporize instead. Still, there are exceptions, notably *Hero in Me* and *Scares Me More*, where he comes up with arrangements that flow with the clarity and focus of his words. Despite some dirgelike numbers, which tend to make Gaines sound like a male Tracy Chapman, this debut holds a lot of promise. P.P.

JOHN GORKA

Temporary Road

HIGH STREET 10315 (46 min)

Performance: Heavy load

Recording: Very good

"I don't feel like a train anymore," the yuppie folk singer John Gorka confesses in his new album, "I feel like the track." Gorka, who carries a varied inventory of emotion between the engine and caboose of this thirteen-track album, specializes in transporting heavy loads, most of them personal. Smart, literate, and earnest, he offers a confident brand of cracked-heart romanticism. But in this case, when he isn't turning out wary declarations of new love and fresh starts, he's walking the halls of the house of correction—aside from *Grand Larceny*, a simple tale of innocence and corruption, and *Vinnie Charles Is Free*, a more complicated story of a man jailed for trafficking dope, he includes two more references to men in prison or leading lives of crime.

I suspect Gorka would like to have a shot at a life of crime himself: His guitar-and-keyboard-laced songs of bittersweet adventures always hold back the heart of his anger and joy. Knocking off a bank or associating with the menacing *Brown Shirts* of his closing song might give him a liberating rush. Gorka knows how to pack a seductive blues and to unmask the face of manners ("People love you when they know you're leaving soon"), but just once it would be great to hear him get so stoked about something he'd run that old locomotive of his clean through the depot walls. Until then, Gorka's trip offers lots of placid landscape with temporary stops for worthwhile contemplation. A.N.

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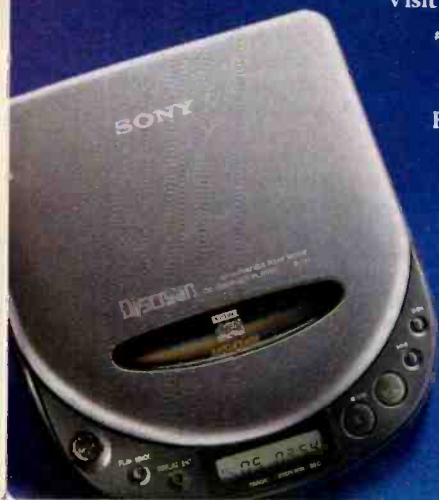


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JEFF HARNAR

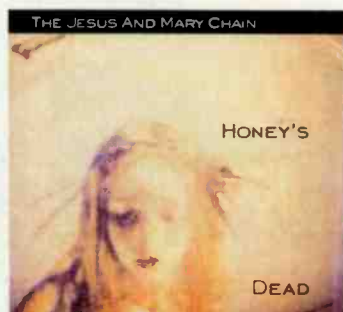
Sings the 1959 Broadway Songbook

ORIGINAL CAST OC 919 (66 min)

Performance: A winner

Recording: Front-row ambience

Jeff Harnar is the freshest, most vocally engaging young singer to hit the cabaret circuit since Michael Feinstein. This debut album—recorded live in the same *boîte* that turned Feinstein into a star, the up-market Oak Room of New York City's Algonquin Hotel—is an imaginative program of some forty-eight songs (including several medleys) from the bountiful treasure chest of shows that were on Broadway in just one year, 1959. Represented are not only such major hits as *My Fair Lady*, *The Sound of Music*, *West Side Story*, *Gypsy*, *The Music Man*, and *Bells Are Ringing* but also such musically fertile “forgotten” shows as *The Nervous Set*, *Jamaica*, *Redhead*, *Saratoga*, *Fiorello*, and *Little Mary Sunshine*. Harnar sings everything with debonair romantic style, verve, and humor (and with occasional vocal interplay by his splendid pianist, Alex Rybeck). R.H.

THE JESUS AND MARY CHAIN
Honey's Dead

DEF AMERICAN 26830 (43 min)

Performance: Heavenly racket

Recording: Distorted to the max

The Jesus and Mary Chain is living proof of the cleansing power of high decibels. Expose your urban angst to their cathartic noise machine, and you'll feel *lots* better afterward. “Honey's Dead” is the J&M Chain's most satisfying eardrum liquidizer since “Psychocandy,” their 1985 debut album that jolted youthful Britain out of its postpunk doldrums. The band's edgy chiaroscuro derives from setting Jim Reid's ghostly vocals against brother William's cacophonous guitar, which inhabits that noisome no man's land between early Stooges and Lou Reed's “Metal Machine Music.” The songs here alternate between distorted two-chord grunge and what can only be described as industrial bubblegum. Here and there the black-clad duo even sounds—horrors!—happy, as in the chipper, discom-bobulated *Far Gone and Out* (“I can't explain exactly what I'm doing standing in the rain”).

Tumbledown is the best of the Double-Bubble punk numbers, approaching a state of electric nirvana that the Ramones and precious few others have been able to achieve. *Rollercoaster* most successfully bridges the two sides of the J&M Chain, first sounding like a hyper-electric Byrds, with echoes of *Mr. Tambourine Man* in the vocal and twelve-string, then driving toward meltdown in the

speeded-up finale. The duo gives voice to their darker side in *Reverence*, the banned-in-Britain opener containing the controversial lines, “I wanna die just like Jesus Christ / I wanna die just like JFK.” The album closes with a reprise of *Reverence*, titled *Frequency*, that interpolates the Modern Lovers' great *Roadrunner*. All in all, “Honey's Dead” is a spellbinder, juggling dissonance and accessibility to hypnotic ends. P.P.

DAVID LYNN JONES

Mixed Emotions

LIBERTY 97251 (42 min)

Performance: Preacher man

Recording: Good

David Lynn Jones, who wrote Willie Nelson's hit *Living in the Promiseland*, was once hailed by Waylon Jennings as the “leader of the new generation in Nashville.” So far, Waylon's about the only one to get in line. As in Jones's other efforts, this new album features intelligent songwriting about social issues, such as fighting in the name of religion (*The Land of Ala*), and personal issues, such as appreciation of family (*Her Love Don't Lie*) and balancing Christian teachings and modern temptations (*The Sailor*). But even when he brings things down to gut level, as in the Delbert McClintonish *Talk to Me*, Jones, who's inappropriately marketed as a country performer, sings with a gruff touch of the Boss in his voice, and he writes with the esoteric flair of a poet in need of an editor.

Jones is a talented guy—a little obsessed with Satan, and maybe even the Church Lady—but his work, produced with lots of instruments to fill out his big, expansive melodies, desperately needs focus. Until then, he'll be a leader in search of a following. A.N.

J&M Chain:
cathartic

SCOTT KEMPNER

Tenement Angels

RAZOR & TIE RT 2809 (45 min)

Performance: Honest

Recording: Good

With “Tenement Angels,” the New York City rocker Scott Kempner becomes the second former Del-Lord to record as a solo artist backed by the champion roots-rockers the Skeletons. It's a fortunate combination; Kempner gets a crateload of rapport and expertise from the Skeletons' bassist/producer Lou Whitney, guitarist D. Clinton Thompson, and the rest, enabling him to come up with a modest rock-and-roll classic. The emphasis is on “modest,” as Kempner achieves the companionable naturalism that eludes Springsteen, Seger, and all the other well-intended overreachers. At first his voice might seem a little ordinary, but soon enough that's what you come to like about it. Conversational and unaffected, except when he slips into a bassy, Iggy Pop-style snarl in *I.C.U.*, Kempner sings about love and dreams in the great big city. He's a fine, flinty rhythm guitarist, providing the backbone while the Skeletons flesh out his musical visions of subways, city streets, cold-water flats, and love affairs chased down in this tattered but addictive urban bazaar. The album is a wealth of riches, but Kempner especially shines in such indomitable, heart-on-sleeve rockers as *Lonesome Train* (subway train, that is) and *Love Among the Ruins*.

Ultimately, as with all great New York City albums (like those by Elliott Murphy, Lou Reed, and the New York Dolls), “Tenement Angels” is as much an ode to the damnable charms of the five boroughs as it is to any flesh-and-blood inamorata. Makes me regret moving away—how's that for convincing? P.P.

CHAKA KHAN

The Woman I Am

WARNER BROS. 26296 (65 min)

Performance: Loud and energetic

Recording: Satisfactory

One thing about Chaka Khan: You'll never have trouble hearing her. She seems even louder than usual as she shrieks her way through this album, her first try at self-production. Maybe that's why the energy and volume level both seem so high here. This is a good disc to play when you're trying desperately to stay awake to complete some onerous task, like doing laundry. With the thunderous bass and percussive thrust, I dare you to fall asleep to it. Yet there are some moments when the tumult subsides and Khan actually sings. The best moments occur in *Love You All My Lifetime* and *You Can Make the Story Right*, but the catchiest song here is the infectious *I Want*, with its sizzling vocal interplay. While those accustomed to Khan's incendiary approach will take to this set, more timid souls are forewarned. P.G.

KILLBILLY

Stranger in This Place

FLYING FISH 70599 (31 min)

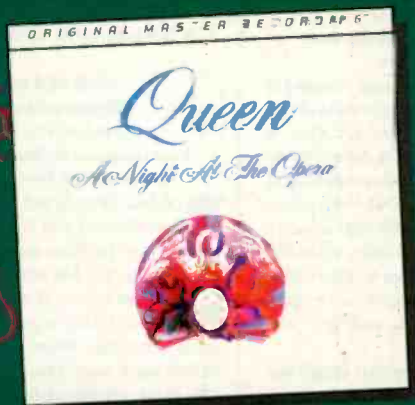
Performance: Loose and manic

Recording: Good

For the uninitiated, Killbilly is a six-man lunatic assemblage out of Dallas that practices a deranged form of country and bluegrass. They've got various names for it: killer

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hillbilly music, country-and-Western world beat, banjovi, metalliccountry, thrashgrass, peckerwood soul... you get the picture. Better instrumentalists than singers, the Kill-billy boys write their own stuff, like *Hang My Head*, an old-fashioned Western story with a bluegrass attitude, and *Boot Scootin' Gal*, with such lyrics as, "She's got six inches on me / But she's still my pal."

These guys have hair longer than ZZ Top's and dress in leather—they look like redneck hippie bikers on speed. Come to think of it, they sound like it, too. Ever heard a banjo-and-mandolin-driven version of *Maybelline*? Start livin'.

A.N.

SONNY LANDRETH Outward Bound

ZOO/PRAxis 11032 (45 min)

Performance: Sincere
Recording: Good

Afficionados of record credits may recognize Sonny Landreth as the extraordinary guitar sideman who's been making John Hiatt sound good. Now on his own for the first time, Landreth shows great promise as a singer and a songwriter, even if those skills don't yet quite equal his instrumental prowess. Landreth's light-yet-earnest tenor is most convincing when he tells a simple story, such as *Common Law Love*, in which an unmarried young couple puts a little strain on their respective families by living together, and *Back to Bayou Têche*, about a woman who doesn't want her musician lover to hit the road. Even when Landreth's voice is defeated by the melodrama or piety of his songs, he can always let his fingers do the talking. Whether he's adding a white-hot edge to his slide guitar, bursting with inventiveness in a blues number, or floating out tiny notes like soap bubbles, Landreth shows that he's a young master of the frets.

R.G.

CHRIS LEDOUX

Whatcha Gonna Do with a Cowboy

LIBERTY 98818 (33 min)

Performance: Not ready for prime time
Recording: Adequate

Chris LeDoux's music rocks and boogies a bit, but mostly it just hangs out around the rodeo chutes, and for good reason: LeDoux, a former world-champion bareback-bronc rider, started working as a cowboy and competing in rodeos at the age of fourteen. Out West some folks regard him as a legend, although exactly why isn't apparent from his records, since his vocal range is slightly less than a cigar-store Indian's, and his Western imagery never gets more imaginative than boots, saddles, and sunsets.

This album mixes LeDoux's own simplistic weddings of rhythm and rhyme (*Little Long-Haired Outlaw*, *Hooked on an 8 Second Ride*) with songs by Ed Bruce (*You Just Can't See Him from the Road*) and Chris Waters (*Cadillac Ranch*), none of them improved by his well-intentioned but amateurish performance. Garth Brooks, who really digs this guy for some unfathomable reason (it was Brooks who brought him into the mainstream), duets in the title tune, a fanciful Western-swing number that cautions women to think twice before lassoing a cowpoke for the night. Think twice before toting home this record.

A.N.



L7

Bricks Are Heavy

SLASH 26784 (38 min)

Performance: Louder than bombs
Recording: Razor-sharp racket

No, they're not the kind of girls you'd bring home to mother, unless mother plays roller derby for a living. L7 proves, like no other women's band before them, that gals can rock and rumble as hard as guys. If anything, these "four talented hags" (as they refer to themselves) go at it so hard they run the risk of frightening off all but the most feral carnivores. "Bricks Are Heavy" is a relentless barrage of riffs coated in thick gobs of biker grease, chords that grind like nails dropped in a garbage disposal, and vocals wrenched from hoarse, jaded throats. Produced by Butch Vig (Nirvana, Sonic Youth), "Bricks Are Heavy" is so pulverizing it will loosen your fillings. And it works, at least half the time.

The album opens with L7 standing down the Pentagon in *Wargasm*, riffing with Motorhead-style abandon in the skinhead parable *Scrap*, and tethering a Blondie-ish pop hook to a two-ton anchor in *Pretend We're Dead*. Put this one into the annals of great opening lines: "My diet pill is wearing off." Eventually, however, the sludge factor overwhelms the album, and any sign of songcraft disappears like a dinosaur sinking into a tar pit. Still and all, "Bricks Are Heavy" cooks like a nuclear reactor before it finally melts down.

P.P.

ROD MACDONALD Highway to Nowhere

SHANACHIE 8001 (45 min)

Performance: Ridiculous to the sublime
Recording: Better than needed

Rod MacDonald put in his time at Columbia Law School and *Newsweek* magazine, but somehow—perhaps unwisely—the pull of folk music won out. He has a sweet, high, kind of Paul Simon voice, if a routine way around a guitar. But it's his songwriting that causes the most concern. Veering wildly, like a drunk driver on a tear, MacDonald either writes in the most amateurish mode possible, badly copying early Dylan in such tunes as *The Coming of the Snow* and *After the Singing*, or reporting with bone-chilling beauty the pain in his own darkened heart (*Moonlight and Fire*).

The oddest thing here is *Norman*, a funny yet pathetic one-sided conversation between *Psycho*'s Norman Bates and his mother ("Guess I'll go light the sign / Wash the shower curtain clear"). Treat this album as you would a rummage sale. There's a treasure or two in here, but you'll have to go through a lot of junk to find it.

A.N.

HEATHER MYLES**Just Like Old Times**

HIGHTONE HCD 8035 (39 min)

Performance: May be a corner**Recording:** Very good

Twenty-seven-year-old Heather Myles hails from Riverside, California, but her music hangs around the dusty fringes of Bakersfield, where they still like their country hard-edged. Steeped in the traditional honky-tonk style, Myles updates the Merle Haggard-Buck Owens-Wynn Stewart sound with a rocking attitude and a Western beat.

In "Just Like Old Times," her album debut, Myles veers from a ballsy, "don't mess with me" vocal in *Love Lyin' Down* to an early Tammy Wynette quality in a cover of Stonewall Jackson's *Why I'm Walking*. She hits her stride with *One Good Reason Why*, a heart-break ballad of shame and confusion in the aftermath of an affair. Much of her original material needs fine tuning—her lyrics tend to splinter into nebulosity—but this newcomer has a gift for melody, and her sensibility is in the right place. She opts for the sparse, crisp accompaniment of such West Coast pickers as Skip Edwards and Brantley Kearns (from Dwight Yoakam's band) and Greg Leisz (from k.d. lang's). While Myles has a way to go to sort out her presentation—her lower register sounds too inexperienced—she's onto something good. Keep your eye on this gal. *A.N.*

**NRBQ****Honest Dollar**

RYKO RCD 10240 (49 min)

Performance: Grungy**Recording:** Fair

Recorded live to two-track tape between 1981 and 1991, this eclectic collection of NRBQ goodies—everything from the bitter-sweet insouciance of *Ridin' in My Car* to the fluff of the *Batman Theme*—alternately thrills and frustrates. The band sounds stoned throughout most of it, and the singing and playing go way beyond relaxed toward sloppy, something not improved by the quality of the recording, which generally sucks donkeys. But NRBQ is always fascinating in a kind of Marx Brothers way. On that level, it doesn't disappoint here. *A.N.*

LIONEL RICHIE**Back to Front**

MOTOWN 37463-6338 (59 min)

Performance: Almost new**Recording:** Satisfactory

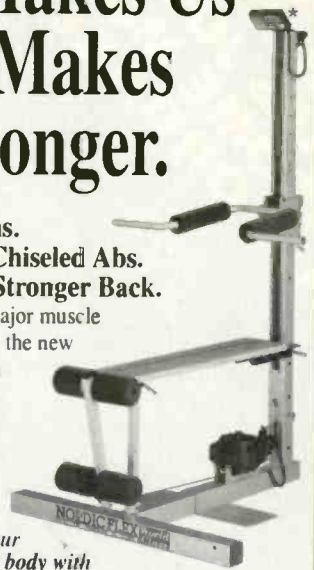
After a five-year hiatus to deal with personal problems, Lionel Richie has returned with what is almost a new record—almost,



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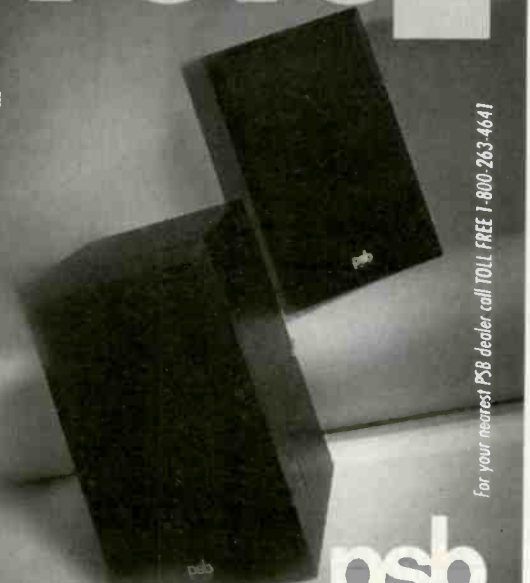
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because three excellent new songs are followed by eleven of his most memorable hits. That may disappoint those hungry for fresh Richie morsels, but this compilation should serve to remind everyone just how talented a songwriter he is, with a gift for highly appealing melodies. His lyrics are usually sentimental, but when he ventures forth a bit he can come up with something as surprising as *All Night Long (All Night)*, his one and only calypso hit.

While pop music has changed considerably during his absence, Richie picks up where he left off, ignoring the raucous secular sermons of rap to give us quality love songs. Two of the three new selections take us back to the Motown of two decades ago, when Richie began recording with the Commodores. He left that group in 1981 for a solo career, but he pays tribute here to his former colleagues with *Do It to Me*, a delightfully mellow ballad. The instantly likable *My Destiny* sounds even more like a Motown oldie in its rhythm, structure, and arrangement. The third original, *Love, Oh Love*, is patterned after *We Are the World*, which Richie wrote with Michael Jackson, and is no less lovely. Now let's have that all-new album Richie promises to deliver. *P.G.*

SANTANA Milagro

POLYDOR 314 513197 (71 min)

Performance: Still exhilarating

Recording: Very good

Although Carlos Santana, the seminal San Francisco-based composer-guitarist, has been through many changes since he made his recording debut twenty-three years ago, the music performed by the Latin/rock group bearing his name still resonates with the spirit of the Sixties. One of the most dazzling creations of that time was Santana's brilliant fusion of black and Latin sounds, marked by propulsive polyrhythms and the leader's biting, ever-imaginative guitar lines.

The group's marvelously musical and spirited new album takes us into a kind of time warp where the spirit of the Sixties lives again. A clue to its intent is the dedication to the late Miles Davis, the father of fusion, and to Bill Graham, the rock promoter who once served as Santana's producer and manager.

The set opens with the sound of Graham introducing Santana at a 1986 concert, but it is not a live recording. After the rousing Latin title track, *Milagro*, we hear an excerpt from

Santana: time-warped



Martin Luther King, Jr.'s historic "I have a dream" speech during the 1963 March on Washington, which introduces the ethereal *Somewhere in Heaven*, recalling the slain leader. After these themes are established, the album ranges through a variety of selections, from the lyrical *Saja* to the jazz fusion of *Red Prophet*, all resonating with the spirit and vigor of a time to be treasured. *P.G.*

MEL TORMÉ AND CLEO LAINE

Nothing Without You

CONCORD CCD-4515 (58 min)

Performance: Blantly genial

Recording: Okay

America's Mel Tormé and Britain's Cleo Laine may seem well matched in their jazz-influenced approach to pop songs, but their actual sounds, beyond their equally smoky timbres, are another matter. Tormé projects most of the lyrics in a laid-back and unpretentious way, but Laine sometimes has a sharper edge to her voice and can seem quite pretentious. The contrast makes for a few interesting takes in this first duet album—especially in a breezy version of *I Thought About You* and a swingingly scatted *After You've Gone*—but not for an interesting hour-long program. John Dankworth leads the orchestra in all fourteen tracks, including a 5-minute medley with faceless snippets of some nineteen (count 'em) different tunes. *R.H.*



UNCLE GREEN

Book of Bad Thoughts

ATLANTIC 82374 (47 min)

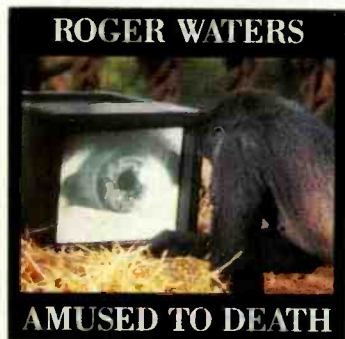
Performance: Infectious

Recording: Good

As catchy as they wanna be, Uncle Green is a band of precocious popsters whose cleverly crafted songs reverberate with influences like Squeeze, XTC, and the Beatles. Though they may be riding on the shoulders of giants, they add a youthful spark that elevates "Book of Bad Thoughts" beyond the realm of brainy but derivative tributes.

Check out *I Know All About You*, in which slashing, *Helter Skelter*-type chords and caustic vocals segue into a dreamy hard-pop bridge built around the chant, "Don't forget about me." *Wake Up Now* opens cold with a sunburst of harmonized a *cappella* that would do the Hollies proud—although the Hollies seldom thought to insert a lead guitar as fat-toned and fuzzy as the one that winds python-like through this song and others here. The guitars crunch more crisply than cold cereal in *Look into the Light*, and the harmonies that back-drop the clipped, fast-tongued lead vocal are spot-on. Uncle Green betrays a romantic

fatalism worthy of Squeeze in *She's Storing It Up*, admitting that the inevitable comeuppance is deserved while guitars arpeggiate restlessly. With its boundless palette of quirky lyrics and trippy melodies, "Book of Bad Thoughts" bears rereading—er, *replaying*—over and over. *P.P.*



ROGER WATERS

AMUSED TO DEATH

ROGER WATERS

Amused to Death

COLUMBIA 47127 (73 min)

Performance: Strangulated

Recording: Good

You've got to agree with Roger Waters that the world is a plenty messed-up place and that the militaristic mentality of the West is largely to blame. You can understand his dissing the notion of war as spectacle in the wake of our televised adventure in the Middle East. He is further to be admired for his attempts to elongate the rock-album format into something almost cinematic and certainly *not* commercial. Nevertheless, in "Amused to Death" he never quite gets past his curdled misanthropy, and the music plods at a snail's pace, making the album agonizing to listen to no matter how correct the politics. A screed is a screed, and this one's a whopper. *P.P.*

Collection

RIG ROCK JUKEBOX

A Collection of Diesel Only Records

FIRST WARNING/BMG 75710 (44 min)

Performance: Raw and rowdy

Recording: Good

A compilation album put out by the folks who service your friendly neighborhood record-playing machines, "Rig Rock Jukebox" is an unexpected delight—a funny, original, and utterly off-the-wall collection of country-rock tunes by regional bands and lesser-known cowpunk practitioners, such as the World Famous Blue Jays, the Blue Chieftains, Courtney & Western, Mark Brine, and Five Chinese Brothers. The operative word here is "original," because even when the Jays do a send-up of Johnny Cash (*Good Morning Mr. Trucker*, a full-throttle, power-rockabilly offering), they do it with terrific verve and wit. The same goes for everybody here, including Courtney & Western, who deliver such lines as, "If I'll never be this young again / At least I'll never be this drunk again."

Anybody whose taste runs along the lines of the Oak Ridge Boys probably won't dig this the most, but if Rosie Flores or the Cowboy Junkies race your motor, be sure to ferret this out. Tell 'em good buddy sent you. *A.N.*

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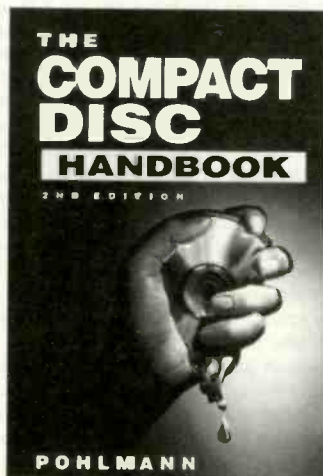
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JAZZ

AFTER FIVE Jazz Expressions

CHEZ NOUS/WARLOCK WARCD-2733 (58 min)

Performance: **Has potential**
Recording: **Good**

This album is an odd mixture of the good, the bland, and the beautiful. All I know about After Five is what I hear in "Jazz Expressions," an album packaged with minimal information. I gather that the three-piece group and its guest players hail from the Dallas area, that they have numerous people to thank for reaching this point in their career, and that they are currently in search of the expression that will best further their career. I base the last inference on the variety of sounds contained in this record, which includes bland lounge fare, New Age noodling, notch-above-Kenny G stuff, plodding elevator music, game-show walking music, and the obligatory rap. But there is also some spirited, well-conceived, unpretentious jazz that made me pay attention. After Five probably does well in local lounges and at weddings and parties. We have all heard such bands, and every good-sized town seems to have at least one, but I hear in this one a potential that their CD barely explores. I hope the same talent—and that includes such guest players as Tre' Balfour—teams up for more, and that it isn't another sampler. C.A.

LOUIS ARMSTRONG The California Concerts

DECCA GRD-4-613 (four discs, 254 min)

Performance: **Superb**
Recording: **Fine mono remotes**

No doubt about it. Louis Armstrong is the most famous jazz musician of all time, and few will deny that he was also the greatest. But to categorize him as only a jazz musician is to short-change him. His infectious smile, humor, gravel voice, and soaring trumpet style were known from Biloxi to Baghdad, and his artistry touched people of all musical tastes. "The California Concerts" is brimming with all of those attributes except that beaming smile.

The material stems from two concerts by the All-Stars, the group that marked Armstrong's return to small-band jazz, brought him renewed worldwide popularity, and—in a sense—served as the bridge by which he crossed over into the postwar pop field. Some of these performances were released on vinyl, but never as many as here, where the fifty-nine selections appear in chronological order and include twenty-four that were previously unissued. The first eighteen tracks were taped at the Pasadena Civic Auditorium in 1951. With Jack Teagarden, Barney Bigard, Earl Hines, Arvell Shaw, and Cozy Cole on hand, the sextet certainly lives up to its All-Star billing. The music is predictably smooth and substantive, and a good deal of showmanship, comic routines, and banter are woven in. This was a good period for Armstrong, who is captured here in splendid form.

The remaining forty-one tunes are equally prepossessing. Recorded four years later at Hollywood's Crescendo Club, they feature a slightly changed All-Stars group: Trummy

Young has replaced Teagarden. Billy Kyle has taken over the piano, and Barrett Deems is on drums. Only twenty-three of these performances were previously issued, and the CD set's producer, Orrin Keepnews, admits to omitting a couple more because they were not up to snuff. There is an occasional sign of weariness, but not from Armstrong himself. I love this set, all 4¼ hours of it. C.A.

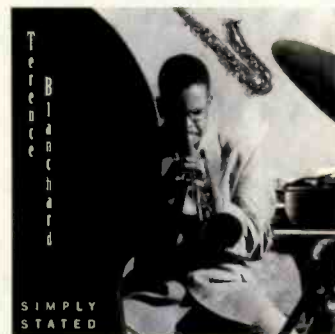
ART BLAKEY Buhaina's Delight

BLUE NOTE 84104 (63 min)

Performance: **Buds**
Recording: **Very good**

Few jazz musicians have had as prolific a recording career as the late Art Blakey's, and even fewer have managed to maintain the high standard he did. "Buhaina's Delight" is a reissue of a 1961 album with one alternate take (*Moon River*) and alternate versions of three tunes (*Backstage Sally*, *Reincarnation Blues*, and *Bi's Delight*). Blakey's Jazz Messengers groups were a proving ground for some of today's most interesting young instrumentalists, but this one goes back thirty years, and its key players—Freddie Hubbard, Wayne Shorter, Curtis Fuller, Cedar Walton—have long since become famous jazz names. It's great to hear Hubbard again, captured when he still played with fire and emotion, and to be reminded that Wayne Shorter has been a fascinating, complex player for more than three decades, as he continues to be.

As Blakey albums go, this one is not exceptional, but time has given it added value—not just because the players have since attained star status, but also because we can now hear in the music qualities that easily escaped our ears in 1961. C.A.



TERENCE BLANCHARD Simply Stated

COLUMBIA 48903 (63 min)

Performance: **Sublime**
Recording: **Excellent**

Terence Blanchard has never sounded better than he does in "Simply Stated," and that's saying something. This is a flawless album by a man who—when last I heard him on disc—was trapped in the soundtrack for a dumb Spike Lee film called *Mo' Better Blues*. I have always maintained that Columbia placed its booster machine behind the wrong trumpeter (Wynton Marsalis), but if Blanchard keeps playing this well and puts out more albums of this high caliber, he won't need anybody's hype—the fans will place him where he belongs. Just listen to him soar in *Central Focus*, shift into mellow for a smooth

ride with the tenor saxophonist Sam Newsome in the title tune, swing ever so gently with Roy Hargrove's sidekick Antonio Hart in *Dear Old Stockholm*, and take *When It's Sleepy Time down South* to an artistic height that would have brought a smile and loving grunts from his fellow New Orleansian Louis Armstrong. There's also *Little Miss Olivia Ray*, a lovely, loving piano solo by Blanchard, and . . . need I say more? This album is a good hour of pure joy—let's leave it at that. C.A.

CHARLIE HADEN
Haunted Heart

VERVE 314 513 078 (66 min)

Performance: Exquisite
Recording: Excellent

Charlie Haden has always combined extraordinary skill and creativity with impeccable taste, but he's never before made an album as deeply satisfying and interesting as "Haunted Heart." This is not just a set of twelve tracks; it's Haden's personal odyssey, a trek through time for which he has expertly woven nostalgic tidbits into a fresh pattern of sounds by his current group, Quartet West. You know he has something unusual in store when the album begins with the famous Warner Bros. fanfare and segues into Adolph Deutsch's intro to *The Maltese Falcon*. What follows is an audio movie, if you will, starring not only Quartet West but also Jo Stafford, Billie Holiday, and Jeri Southern, who are heard in transfers from records in the bassist's private collection.

The quartet's program includes fine originals by the pianist Alan Broadbent, Lennie Tristano's morphed *Pennies from Heaven* (Lennie's *Pennies*), Bud Powell's *Dance of the Infidels*, Charlie Parker's *Segment*, and a version of the old Glenn Miller theme, *Moonlight Serenade*. Everything is played to perfection, and the seams are invisible. C.A.



COURTNEY PINE
Closer to Home

ANTILLES 314-510 769 (52 min)

Performance: Compelling
Recording: Very good

The Jamaica-born tenor saxophonist Courtney Pine has gone reggae with a new album appropriately titled "Closer to Home." What could easily have been a bland offering à la Nadje or Kenny G is instead a compelling blend of sounds reflecting both Pine's ancestral roots and his love for the music of John Coltrane. Occasional back-up vocals make the sound rather more poppish than anything Pine has treated us to before, but even at its most commercial the music has an engaging quality.

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BIG STAR**#1 Record/Radio City.**

STAX FCD-60-025 (73 min).

Two cult albums that, for a change, deserve their cult status—melodic, guitar-driven pop/rock still doesn't come any better. *S.S.*

DAVID BOWIE**Ziggy Stardust: The Motion Picture.**

RYKODISC RCD 40148 (70 min).

Early-Seventies Bowie in concert and (for me, anyway) at best a period piece. Consumer warning for fans: The sub-bootleg sonics here make "The Beatles Live at the Star Club" sound like "Dark Side of the Moon." *S.S.*

**CHRIS CACAVAS & JUNKYARD LOVE****Good Times.** HEYDAY HEY025 (50 min).

An intriguing sophomore effort by the former Green on Red keyboard maestro, neatly mixing Neil Young-style guitar and vocal tricks, depressing (occasionally political) songs, and angelic harmonies. Think "Everybody Knows This Is Nowhere" with a hangover and you've got the idea. *S.S.*

FASTER PUSSYCAT**Whipped!** ELEKTRA 61124 (53 min).

You know, some days I really kind of miss Quiet Riot. *S.S.*

**FISH****Internal Exile.**

POLYDOR 314 513 765 (50 min).

In which Marillion's lead singer goes solo with predictable results—portentous synthesizers, bad poetry ("hunched foetal in the corner of my soul"), and would-that-only-dogs-could-hear-him vocals. Topic for future research: In France, do they call this guy Le Poisson? *S.S.*

FLIPPER**Generic.** DEF AMERICAN 26915 (41 min).

And speaking of fish, here's a 1982 album by the lamented San Francisco punk band

that, as they say, died for your fins. One of Western Civilization's all-time-great infernal rackets. *S.S.*

DICK HAYMES**Star Eyes.** JASS J-CD-633 (70 min).

Thirty-one songs, superbly remastered from 1943-1950 airchecks, with the rich-voiced baritone in peak form—proving that before booze and women did him in (by his own admission) he was one of the true greats of pre-rock pop. *R.H.*

LEMONHEADS**It's a Shame About Ray.**

ATLANTIC 82397 (29 min).

Jangly alternative rock and not without its pleasures, even though lead singer/songwriter Evan Dando's undergrad Elvis Costello act tends to highlight the difference between talent and genius. *S.S.*

SUN'S GREATEST HITS

RCA 66059 (41 min).

Early rock goodies including Charlie Rich's epochal *Lonely Weekends* and Roy Orbison's metaphysically puzzling *Ooby Dooby*. Over-familiar, perhaps, but nice. *S.S.*

**TWIN PEAKS—
FIRE WALK WITH ME**

WARNER BROS. 45019 (56 min).

In the soundtrack for the big-screen version of *Twin Peaks*, composer Angelo Badalamenti is up to his usual tricks—surf guitars, minimalist melodies, Fifties jazz, and electronics. Unsurprisingly, the results aren't as minty fresh as the original TV score, but since the movie is nonstop sex-and-violence, why complain? *S.S.*

WALT MINK**Miss Happiness.** CAROLINE 1721 (37 min).

Named, like Lynrd Skynyrd, after a real-life teacher, Walt Mink offers a mixture of guitar-driven sass and twee-voiced smarm, sufficiently virtuosic to recall the likes of Nick Drake and Captain Beefheart. At the same time, they nod to the kind of power-trio racket-making that was one of the guiltiest pleasures of the Seventies. *P.P.*

YOUNG TURK**N.E. 2nd Avenue.** VIRGIN 86350 (48 min).

Sex, drugs, and rock-and-roll, Hollywood heavy-metal style, by a young band that might be Guns 'n' Roses with a richer inner life. Interesting. *S.S.*

If you're a jazz purist, you'll pine for the Courtney of old, but no matter which direction your taste runs in, you won't find it easy to sit still while Pine and his band of music makers take the Trane to Jamaica. *C.A.*

JUSTIN ROBINSON**Justin Time**

VERVE 314 513 254 (49 min)

Performance: Superb
Recording: Very good

The alto saxophonist Justin Robinson has been drawing praise for a few years, yet he is only twenty-three. A New Yorker, he began studies with Frank Wess when he was sixteen and was soon heard in heavy company at some of the city's top clubs. In 1988 Robinson appeared in the Harper Brothers' debut album, and that association continues today. "Justin Time," his debut as a leader, is a sparkling affair featuring a quartet completed by the pianist Kenny Barron, the bassist Peter Washington, and the drummer Lewis Nash. Other musicians lending variety to the sound and mood of this set include the pianist Stephen Scott, the trumpeter Eddie Henderson, and the saxophonists Javon Jackson, Gary Bartz, and Bobby Watson, Robinson's later teacher and one of the most remarkable young musicians around today. Watson produced the album, which shows several sides of Robinson's talent, but he says it represents "only a fraction" of what Robinson wants to achieve. My favorite track is *Kaireese*, a liquid, Hodges-like piece that oozes ever so wistfully into one's memory. *C.A.*

**CHARLIE WATTS QUINTET
A Tribute to Charlie Parker**

CONTINUUM 19201 (76 min)

Performance: Worthy tribute
Recording: Excellent remote

You might call Charlie Watts a crossover artist. Firmly embedded in rock history as the Rolling Stones' drummer, he makes no secret about his long-standing passion for jazz, a love that first manifested itself some thirty years ago in the form of a children's book he wrote called *Ode to a High Flying Bird*. Watts's new album, "A Tribute to Charlie Parker," is the latest manifestation. Recorded at the opening of Ronnie Scott's new club in Birmingham, England, it features a sprightly quintet spearheaded by the alto saxophonist Peter King, along with a string section from a second club session. Tying it all together is Watts's poem to Bird, narrated by Bernard Fowler, who also turns vocalist in *Lover Man*. King and the group perform the whole program, which includes four Parker compositions, with great tenderness, capturing the spirit that has kept Bird flying high all these years since his death.

At the time of these recordings, the Watts Quintet was already a seasoned ensemble, having played in various parts of the Continent, at New York City's Blue Note club, and on tour in Japan. It's a superb, cohesive unit that does far more than mirror Parker's performances. Watts's 1986 big-band album, "Live at Fulham Town Hall," was a loving but somewhat chaotic tribute to jazz that featured too many musicians because Watts found it impossible to turn anyone down. This release is quite another matter, and I recommend it highly. *C.A.*

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BACKBEAT

BY STEVE SIMELS

Noise in the Attic

EVERYBODY'S in a band / They can't get enough of it," Pere Ubu once sang, and our more politically astute readers are no doubt aware that recent proof of this proposition has emerged during the current election campaign. I refer, of course, to the startling news that Tipper Gore, wife of the Democratic Vice Presidential nominee but better known for getting record companies to slap Parental Advisory labels on naughty rock and rap albums, played the drums in an all-girl garage band in the mid-Sixties. Talk about cognitive dissonance.

Or maybe not. Actually, it's occurred to me that wanting to be a rock star is pretty much the universal fantasy of our age. In fact, when I researched the subject back in 1989, I was able to locate lots of nonmusical celebrities with rock bands in their closets. Some were willing to speak to me about it, among them Chevy Chase (a godawful group called Chameleon Church, with a 1968 album on MGM) and *Saturday Night Live*'s Kevin Nealon (several mid-Sixties garage bands with names like the Hallucinations and the Atomic Bombs). Others were less forthcoming, like Diane Keaton (who sang with a New York City band called the Roadrunners circa 1966) and the former Bush Administration drug czar William J. Bennett (who played guitar and sang with an *Animal House*-style

frat-rock outfit at Williams College back in 1961).

My favorite celeb with a past rock life, however, is unquestionably Frederic Barthelme. These days Barthelme is a highly regarded member of the so-called minimalist school of fiction, and his work appears in tony outlets like *The New Yorker*. But few readers of his story collections *Moon Deluxe* and *Chroma* know that back in the acid-drenched Sixties he pounded the drums as a member of a band called the Red Crayola, or that he co-wrote such unforgettable songs as *Pink Stainless Tail* and *War Sucks*.

"What happened," Barthelme told me in a not-at-all minimalist manner, "was [that] I had already been booted from architecture school [University of Houston, 1966] for a kind of too-wicked treatment of an architectural problem. So I was making pictures, and Mayo Thompson was a friend who had been in Europe for a year. And when he came back he decided we ought to have a rock-and-roll band."

"He and I and a guy named Steve Cunningham, who was a year or two younger, got together and started playing *Hey Joe* and all that. And we sort of developed at the same time the psychedelic stuff was going on, and we used to play for hours and hours."

Once christened the Red Crayola, Barthelme and his fellow arty hippies began to garner a local reputation. Eventually, they got to do an album "because we won some kind of idiotic mall Battle of the Bands. It doesn't occur to me now that we won, actual-

ly, but we played in it and were heard by Lelan Rogers, who was a small-time producer and Kenny Rogers's brother-in-law."

The album, "The Parable of Arable Land" on the Texas-based International Artists label, sold fitfully at best, perhaps because "the guy who did the recording recorded it in mono," Barthelme recalled. "We thought it was a good idea at the time."

Undaunted, the Crayolas went out to California in the summer of 1967, where one performance, at the Berkeley Folk Festival, has become almost legendary. "That's when Cunningham played the famous block of ice," Barthelme explained. "He brought a block of ice on stage, put it on a stand with some aluminum foil under it, and miked the foil. It was an outdoor concert, and it melted attractively."

After their California trip, the Crayolas went back to Texas and "just broke up after that season." Mayo continued with another album called "God Bless the Red Crayola" and later reappeared in Europe along with, of all people, members of Pere Ubu.

Today, from his teaching post at the University of Southern Mississippi, Barthelme looks back on his brush with rock stardom. "It was pretty interesting," he recalled. "Of course, the idea that I was a rock star—or even a qualified performer—is, I think, a stretch. You do understand I was the world's worst drummer . . . very far ahead of my time, but the world's worst drummer."

Still, history plays odd tricks, and after the first Red Crayola album was reissued in the late Seventies, some rock theoreticians actually hailed the band as unsung Godfathers of Punk.

"Mayo said something about that when he was in Europe," Barthelme told me, "that in England we were a proto-punk band, and people had heard of us and had the record." He reflected for a moment. "I don't really know if that's true," he said finally. "But wouldn't it be lovely to think so?"

Well, yeah, it would, actually. Meanwhile, "Parable" is now available on a Charly CD (a Brit import available at hipper record stores), so you can check it out for yourself. □

**The Red Crayola
backstage at the
Berkeley Folk
Festival, 1967:
from left, Steve
Cunningham,
Mayo Thompson,
and Frederic
Barthelme**



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BACH: Orchestral Suites Nos. 1-5

C. P. E. Bach Chamber Orchestra, Schreier
 PHILIPS 432 969 (two discs, 112 min)

Performance: Suave clarity
Recording: Crystalline

Five Bach orchestral suites? No one anymore attributes the quirky, Rococo/Romantic, and theatrical G Minor Suite (BMV 1070) to Johann Sebastian; it is perhaps by one of his sons. Whoever wrote it, it is a fascinating rediscovery and provides an intriguingly dramatic contrast here to the more familiar Baroque foursome.

Peter Schreier, the East German singer turned conductor, is a proponent of performing Bach with one musician to a part. He takes all repeats, including the overture, usually without elaboration. He likes lively tempos with no internal changes, a bare-bones clarity of texture, and an emphasis on high energy, combined or contrasted with suave phrasing. Listen to his upbeat opening "adagios," which are in the same tempo as the ensuing "allegros." Or try the rolling pulse he gives the so-called Air for the G String. There are historical arguments for these decisions (the tempo markings were added by later editors), but this is essentially a postmodern rather than a neo-Baroque approach. It is almost aggressively anti-Romantic and quite effective—curiously enough, most of all in that mysterious and operatic Suite No. 5. *E.S.*



BERLIOZ: Symphonie Fantastique; Les Troyens, Royal Hunt and Storm

Berlin Philharmonic, Levine
 DEUTSCHE GRAMMOPHON 431 624 (66 min)
Performance: Well-judged, but . . .
Recording: Impressive

The reason collectors hunt for the recently deleted Angel/EMI compact disc on which Thomas Beecham conducts these same works, plus *Le Corsaire*, is in most cases the quite incomparable performance of the "Royal Hunt and Storm." Like Beecham, James Levine includes the choral part (performed here by the RIAS Chamber Choir and Berlin Radio Chorus), and he finds the right pulse for the piece. He does just about everything right, in fact, in respect to phrasing, pacing, and balances in both works. He takes the first-movement repeat in the symphony (Beecham did not, in either of his recordings), he has the Berlin Philharmonic at the top of its form, and the recording is impressive in its close-up way. For all there is to admire, though, there is little to draw one back to these performances, which never quite catch fire. There are more than a few recordings of the *Symphonie Fantastique* that are more thoroughly involving,

REVIEWS
CLASSICAL
MUSIC
Discs and tapes
reviewed by Robert Ackart,
Richard Freed, David Hall,
George Jellinek,
Eric Salzman, and
David Patrick Stearns

and Beecham's "Royal Hunt" is still incomparable—it ought to be restored to the catalog at once. *R.F.*

BRAHMS: Variations on a Theme by Haydn. IVES: (arr. Schuman): Variations on "America." REGER: Variations on a Theme by Mozart.

New York Philharmonic, Masur
 TELDEC 74007 (56 min)
Performance: Promising
Recording: Excellent

In many ways, this live recording illustrates the kind of pleasant surprises that the New York Philharmonic's new music director, Kurt Masur, has been giving its audiences. The program is more than just a clever juxtaposition of variations by three composers. The

Peter Schreier: lively Bach



Ives and Reger pieces both seem to have been written in reaction to the Brahms—in fact, Ives occasionally sends up Brahms by taking his variation techniques one step further into the preposterous. The Reger seems less interesting, because the invention is uneven, but it's worth hearing in this context. It encapsulates variation techniques from Brahms's era and later, and the orchestration has a sheen that may seem kitschy at first but can become charming on repeated hearings.

Masur's interpretations find all kinds of hitherto undiscovered treasures in the harmonies while always taking a strong overview of the music, never pulling it apart needlessly. In a number of places I sensed that he might have preferred more precise rhythms, but the orchestral playing in general has a graininess that gives character to his interpretations. Although I probably wouldn't recommend this compact disc for any of the individual performances, together they make quite an attractive package. *D.P.S.*

CARTER: Cello Sonata
MIASKOVSKY: Cello Sonata No. 2
POULENC: Cello Sonata

Wick; Rhee
 MD+G/KOCH INT'L IMPORTS L 3397 (63 min)
Performance: Very good
Recording: Excellent

Cello Sonatas of 1948" is the collective title of this absorbing recital by the German-born Tilmann Wick and his Korean keyboard collaborator, Heasook Rhee, but the chronological designation belies the stylistic diversity of the three works. The composers' birthdates tell the real story: Nikolai Miaskovsky (1881-1950), Francis Poulenc (1899-1963), and Elliott Carter (b. 1908 and still active).

Except for a Scriabinesque "modern" phase in his earlier works such as the Sixth Symphony, Miaskovsky's musical language continued on the same Russian lyrical symphonic line as Glazunov, Rachmaninoff, and Medtner. The Cello Sonata No. 2 falls neatly into place, with two predominantly songful movements giving way to a more dynamic finale with *moto perpetuo* elements.

Poulenc started off as a kind of musical playboy *à la* Satie and "*Les Six*" but developed a more serious side in his song cycles and religious works. The four-movement Cello Sonata displays both aspects: the playboy in the third movement, the lyrical singer in the first and second, and a sharp contrast between them in the finale. The piece is beautifully written, but it does not jell convincingly.

The Carter Cello Sonata is a real masterpiece that demands the utmost virtuosity and musical insight. It represents a transition between Carter's early Neoclassical manner and his later works that make use of metrical modulation and strongly characterized instrumental interaction. The elemental phenomenon of time sets the tone at the start and finish of the score, and in between there is lyrical flow leading to a jazzy or Stravinskian scherzo and a slow movement with powerful arioso recitative episodes. The work culminates in a dazzlingly mercurial finale. The lean-toned cellist and his nimble-fingered partner give a splendid account of themselves in all three works, and they are accorded virtually ideal sonics. *D.H.*

PHOTO: TANJA NIEMANN/PHILIPS

CHOPIN: Preludes, Op. 28; Cantabile; Contredanse; Three Nocturnes

Tzimon Barto
EMI CDC 54367 (66 min)
Performance: Poetic
Recording: Very good

The pianist Tzimon Barto has had the good fortune to avoid—so far, at least—electronic overexposure. Each of his recordings can be savored on its own terms, not as part of the Complete Works of Everybody, and surely Chopin playing as beautiful as his calls for that kind of attention. Barto very strongly emphasizes the poetic nature of the music here, in the slightest pieces as well as the more ambitious ones. He distills the utmost beauty and meaning not only from every phrase but from every individual note, and he manages to do it without distorting the line or impeding momentum—though his tempos are slowish and sometimes stretched to the very limit.

The risks taken in spinning out some of the familiar pieces at something like half their normal speed can pay off in a tenderness almost beyond description, but one might well feel that a greater sense of contrast would be welcome, particularly if you listen to all twenty-eight preludes in one sitting. Still, taken individually, not one piece misses fire. On balance I find myself a bit happier with Jean-Yves Thibaudet's Denon disc of the preludes, with two of the same nocturnes Barto offers as fillers, but Barto does weave an unusual enchantment, EMI has given him glorious sound, and the seldom heard *Cantabile* and *Contredanse* are welcome makeweights. R.F.

DANIELPOUR: First Light; The Awakened Heart; Symphony No. 3 ("Journey Without Distance")

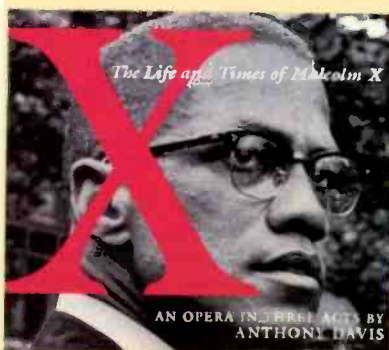
Esham; Seattle Symphony and Chorale, Schwarz
DELOS DE 3118 (66 min)
Performance: Underripe
Recording: Okay

DANIELPOUR: Urban Dances; Psalms; The Enchanted Garden; Piano Quintet

O'Riley; Saturday Brass Quintet; Chamber Music Society of Lincoln Center
KOCH INTERNATIONAL 3-7100-2H1 (78 min)
Performance: Authoritative
Recording: Excellent

Richard Danielpour, a graduate of Juilliard and a student of Vincent Persichetti and Peter Mennin, has an aesthetic anchored in an inspirational ideology. He sees his music as a reflection of his spiritual evolution, though with none of the traditional devoutness of a Bach or Bruckner. Unfortunately, he pursues his programmatic concepts so doggedly that his music is often a self-conscious succession of sounds without much sense of freedom or fantasy. A distinctive voice has still not emerged, and he does not use his repertoire of familiar twentieth-century orchestral techniques with any great originality. Although there are fine things on these two CD's, they are highly inconsistent, not only from piece to piece but from movement to movement in the same piece.

The first part of the two-part Symphony No. 3, for example, is full of annoyingly repetitious rhythms and unconvincingly alternates between intense passages and more meditative ones. The ethereal, expansive second part,



Politics and opera have never been natural allies, but in Anthony Davis's 1986 opera *X, The Life and Times of Malcolm X*, a lot of seemingly unresolvable things are reconciled. Classical and jazz styles meld together as though they're long-lost brothers. Political slogans that would seem to defy vocalization are set like incantations and repeated periodically in a way that makes them seem like recurring characters. Having developed this distinctive sound world, Davis displays a breathtaking sense of invention, with gliddy rhythms, unexpected harmonic turns, and virtuosic feats of thematic development amid the constantly shifting tonality. In just the first few minutes, he makes a lullaby evolve into a raffish street scene. No wonder his subsequent stage works, *Under the Double Moon* and *Tanya*, have had such a hard time living up to the promise of *X*.

If *X* hasn't been produced often since its New York City Opera world premiere, it's probably because Thulani Davis's libretto is top-heavy with scene setting and populates the opera with too many stereotypes and not enough real people. These shortcomings only seem magnified in the recording, though the quality of the performances compensates for a lot. William Henry Curry, who conducts the Orchestra of St. Luke's and Davis's jazz group Episteme, allows the opera to unfold with a rambunctious spontaneity. In the title role, the fine singing actor Eugene Perry helps make Malcolm a genuinely fascinating figure, adapting his vocal style as the part's ruggedly lyrical lines evolve into something more spare when Malcolm undergoes his spiritual and personal identity crisis. Listening to *X* may require a bit of patience, but it's also the most exciting contemporary opera recording since John Adams's *Nixon in China*. D.P.S.

A. DAVIS: X, the Life and Times of Malcolm X.

E. Perry, Young, Baskerville, Harris, H. Perry; Episteme; Orchestra of St. Luke's, Curry
GRAMAVISION 79470 (two discs, 140 min)

however, borders on the sublime, with a setting of passages from the popular New Age book *A Course in Miracles* for chorus and soprano (a somewhat unsteady Faith Esham in this performance) decorated by polytonal comments from winds and piano.

Of the other works on the Delos disc, I greatly enjoyed two-thirds of the triptych *The Awakened Heart*, whose second movement is reminiscent of Bartók in his best "night music" vein. The tone poem *First Light* is also inconsistent, though a performance less underripe than this one by Gerard Schwarz and his Seattle Symphony could prompt a change in heart.

On the Koch disc of chamber music, I can't work up any enthusiasm for *Urban Dances*, for brass quintet, or *Psalms*, for solo piano. *The Enchanted Garden*, however, played with unusual relish by the pianist Christopher O'Riley and recorded with lots of air and resonance, shows the composer at his most personal and imaginative. And the middle movement of the Piano Quintet, with its gently dovetailed polytonal counterpoint, suggests a cross between Hindemith and Messiaen. D.P.S.



Composer Richard Danielpour

GILBERT & SULLIVAN: The Mikado

Soloists; Chorus and Orchestra of the Welsh National Opera, Mackerras
TELARC CD-80284 (79 min)
Performance: Lively
Recording: Very good

When a respected conductor and a leading opera company address themselves to Gilbert & Sullivan, the results are likely to be well worth attention. Such is certainly the case with this recording, which dispenses with the dialogue and focuses on the music. Charles Mackerras conducts with sympathetic wit and a palpable pleasure in Sullivan's melodies—I felt as if I were hearing them for the first time. The cast is strong throughout, with laudably intelligible diction even in the patter numbers. Anthony Rolfe Johnson (Nanki-Poo), Richard Suart (Ko-Ko), Richard Van Allan (Pooh-

Bah), Marie McLaughlin (Yum-Yum), and Felicity Palmer (Katisha) deserve accolades for their particularly stylish contributions. Donald Adams makes a rich-voiced Mikado, his performance tarnished only by bursts of demonic laughter in "My object all sublime," weakening its gothic ironies. That was my only negative reaction, however, as I listened happily to the familiar G&S tunes and satirical lyrics. Recommended. R.A.



Composer John Moran: serious fun?

IVES: The Unanswered Question; Central Park in the Dark; Robert Browning Overture; Three Places in New England

Gulbenkian Orchestra, Swierczewski
NIMBUS NI 5316 (59 min)

Performance: Good
Recording: Lots of ambience

This Charles Ives collection from Paris-born Michel Swierczewski and the Lisbon-based Gulbenkian Orchestra includes the first digital recordings of that 1911 blockbuster, the *Robert Browning Overture*, and *Three Places in New England* in its full-orchestra version. *The Unanswered Question* represents the Transcendentalist Ives in his most rarefied mystical mode, but in the overture's allegro episodes the Transcendentalism is overpoweringly activist. Neither of these scores makes use of quotations from vernacular hymn or popular tunes (save for glancing references in the coda of the overture to *Adeste Fideles* and *Awake My Soul, Stretch Every Nerve*). *Three Places in New England* and *Central Park in the Dark* are among the most familiar Ives works that do use his collage technique.

The performances and recordings here are highly creditable, especially *The Unanswered Question*, *Central Park in the Dark*, and the first and last movements of *Three Places*, "The 'St. Gaudens' in Boston Common" and "The Housatonic at Stockbridge." Even in conventional stereo playback, the acoustic surround of the high-ceilinged stone church in Lisbon is

wonderfully captured by Nimbus's Ambisonic microphone setup, with precise localization of separated instrumental groups in the small-ensemble scores and a most effective sonic "wash" as "The Housatonic at Stockbridge" builds to its climax. But the rich ambience serves to muddle the complex textures of *Robert Browning* and of the "Putnam's Camp" movement in *Three Places*. Perhaps the textures would be clearer with Ambisonic decoding equipment and the requisite speaker setup (four speakers at the same height facing the center in an "X" pattern). The decoding apparatus seems to be available only on a limited basis in this country, but the system is better established in Britain, and a substantial number of British labels other than Nimbus ambisonically encode their releases. D.H.

JANÁČEK: Glagolitic Mass; Sinfonietta

Soloists; London Symphony Chorus and Orchestra, Thomas
SONY SK 47182 (64 min)

Performance: Mostly very good
Recording: Handsome

Neither the *Glagolitic Mass* nor the *Sinfonietta* lack for distinguished recordings. What Michael Tilson Thomas has going for him here are splendid soloists: the soprano Gabriela Beňačková, mezzo-soprano Felicity Palmer, tenor Gary Lakes, and bass Anatoly Kotcherga. In some performances one feels at times that Janáček is subjecting the sopranos and tenor to cruel and unusual punishment. Not so here: The singers meet the challenges with the greatest of ease, particularly in the *Verju* (*Credo*). Thomas gets a splendid response from both the chorus and orchestra, and the acoustics of All Saints Church, Tooting, are well suited to the music and well managed by the production crew. The important solo-organ episode in the *Mass* is brilliantly played, albeit at a terrific clip, by John Scott (recorded separately at the Ratzeburg Cathedral in Germany). Nonetheless, I still prefer overall the version of the *Mass* by Charles Mackerras on Supraphon. Recorded in 1984 in Prague with Czech forces (save for soprano Elisabeth Söderström), it has more of the cutting edge and raw thrust essential to the Janáček idiom.

The *Sinfonietta* here was recorded at Watford Town Hall and comes off creditably enough, though the second movement is somewhat fast for my taste and the third a bit too sentimental. The engineering crew has done an exceptional job, however, both in capturing the kaleidoscopic variety and coloration of the music's inner voices and in lateral imaging. But once again I prefer the gutsiness of Mackerras's recording, this time with the Vienna Philharmonic on London (paired with *Taras Bulba*). D.H.

LALO: Symphonie Espagnole VIEUXTEMPS: Violin Concerto No. 5 SAINT-SAËNS: Introduction and Rondo Capriccioso

Mintz; Israel Philharmonic, Mehta
DEUTSCHE GRAMMOPHON 429 977 (60 min)

Performance: Mintz *con amore*
Recording: Uneven

The opening of the *Lalo* is not very promising. The orchestra seems less than fully engaged, and its sound is somewhat amor-



phous, as if absorbed by a huge acoustic blotter. Shlomo Mintz's first solo shoots out like a rocket. The dullish ambience seems improved in the work's concluding movements (or possibly the ear makes its own compensations by then), and so does Zubin Mehta's contribution to the performance. The one consistent element is the one that matters most: Mintz plays with all the brilliance one could want, and with exceptional subtlety and all-round conviction as well.

As effective as Mintz is in the *Lalo*, he surpasses himself in the *Vieuxtemps* concerto, in which he enjoys a higher level of partnership from Mehta. It is a charming piece, and a most effective contrast to the *Lalo*, with an expansive opening movement followed without pause by a very brief adagio (based on a Grétry tune) and a finale that recaps the earlier portions in barely more than a minute. It has become a stranger to our concert halls and can only benefit from the sort of advocacy Mintz and Mehta bring to it. The *Saint-Saëns* piece, of course, has never been a stranger, but it, too, receives a performance that is striking for its freshness. Mintz plays it *con amore* and with delightful regard for the *capriccioso* in the title. R.F.



J. MORAN: The Manson Family

John Moran, Iggy Pop, Terre Roche, Paige Snell, others

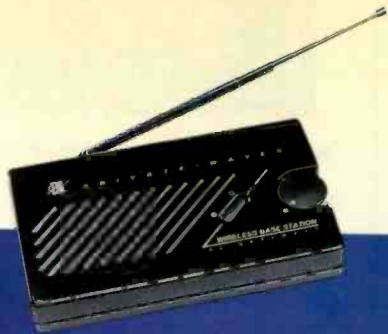
POINT/PHILIPS 432 967 (53 min)
Performance: Chilling
Recording: Avant-pop

This opera—well, sort of—about the Manson Family is John Moran's fourth in a series of odd and original music-theater works. The first to be recorded, it was originally performed at Lincoln Center's Serious Fun Festival. The serious part is obvious, the fun a little less so. The composer himself plays Manson, Iggy Pop plays his prosecutor, and Terre Roche plays Squeaky Fromme. We may have a trend here, since Squeaky also appears

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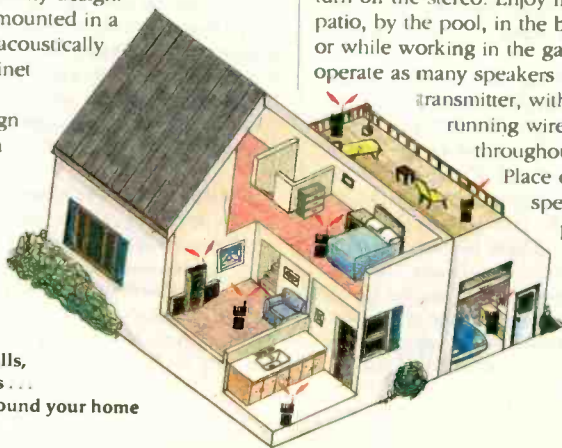
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in Steven Sondheim's recent unsuccessful musical, *Assassins*.

The Sondheim, although considered far out by Broadway standards, is really quite straightforward and tuneful compared with *The Manson Family*, which is, to put it mildly, funky and scary. Moran, a protégé of Philip Glass, is a proponent of the dark side of minimalism. His mixture of repeated musical fragments, off-key pop singing, recorded and distorted sounds, imitation Beatles, and bits of incoherent speech (some of it quoted right from Manson himself) suits the surrealist subject matter very well. The production, from the avant-garde side of pop (with Glass listed as an executive producer), uses contemporary audio technology in a highly creative way.

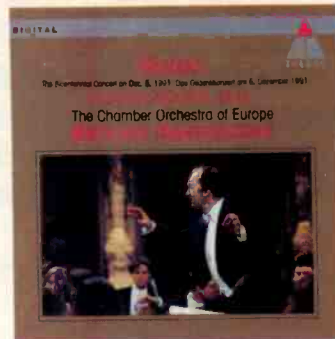
In short, chilling and provoking. If watching a slow-motion horror film on late-night TV orchestrated to the sound of freeway smash-ups and out-of-sync car stereos playing distorted Sixties music is your idea of serious fun, you may find this compelling. Moran is some kind of extraordinary, cockeyed talent, and *The Manson Family* is a highly original, disturbing work. E.S.



MOZART: Concert Arias
Gruberova, Chamber Orchestra of Europe,
Harnoncourt
TELDEC 72302 (66 min)
Performance: Dazzling
Recording: Excellent

The eight arias on this CD, written between 1775 and 1788, are phenomenal showpieces that test the soprano's range and accuracy as well as dramatic expressiveness. Edita Gruberova recorded them all about a decade ago (on Deutsche Grammophon and London), and this new recording made at an unidentified concert finds her in undiminished form. Some of Gruberova's past recordings have emphasized the metallic edge of her timbre. Here the tone has warmth, her extraordinary range (up to F over high C) is intact, and the runs, wide leaps, and trills are fearlessly and accurately negotiated.

Most of the selections were inserts to tragic operas on texts by Metastasio or his imitators. *Voi avete un cor fedele* (K. 217) provides a welcome lighter touch. *Or che il cielo a me ti rende* (K. 374), something of a mixture, is the best of the lot musically along with *Vorrei spiegarvi, oh Dio!* (K. 418). But all of the arias here are close to topflight Mozart, rendered with astonishing expertise. Under Nikolaus Harnoncourt's fastidious direction, the recitatives receive as much care as the arias themselves. Applause follows each selection, but otherwise there are no aural distractions. G.J.



MOZART: Symphonies Nos. 39, 40, and 41 ("Jupiter")
Chamber Orchestra of Europe, Harnoncourt
TELDEC 74858 (two discs, 109 min)
Performance: Frustrating
Recording: Good live takes

After giving us what must be the most all-around persuasive set of the Beethoven symphonies, recorded live with the Chamber Orchestra of Europe, Nikolaus Harnoncourt has turned his attention once more to symphonies by Mozart, again live with the COE. This set documents the concert given in Vienna last year on the bicentenary of the composer's death, but despite more than a few wonderful moments, it's a disappointment.

Not in the quality of the playing, to be sure. The COE is its usual superb self, responding with at least as much brilliance and flexibility as any other ensemble with which Harnoncourt has recorded. And his way of bringing out detail without artificially spotlighting, his fine sense of momentum, his refusal to allow a single phrase to go by without meaning—all these are gratifyingly in evidence, too. But such virtues are offset by a number of frustrations. Harnoncourt takes absolutely every repeat and gives very expansive pacing to the slow movements; the combination makes for an impression of aural distention, as if a part of a totally different performance had been inserted between each allegro and minuet. A similar effect, on a smaller scale, occurs in the minuets—particularly that of No. 39.

Of the three symphonies, No. 40 (in which Harnoncourt does use the clarinets Mozart added) seems least "all of a piece." Here the opening movement is perfunctory, the minuet and trio again exaggerated in their contrasts, and the finale distressingly tame. Those repeats are hard to justify when so little of the tragic drama is even hinted at.

The "Jupiter" proves to be a largely successful redemptive gesture, charged with real nobility and no little drama, and rising to a truly Olympian level of conviction and grandeur in the great finale. The sound throughout is exemplary, as is the silent self-discipline of the audience, but this set is not really in the running. Among various superior versions are Harnoncourt's own earlier ones. R.F.

MUSSORGSKY: Khovanshchina
Kirov Opera and Orchestra, Gergiev
PHILIPS 432 147 (three discs, 196 min)
Performance: Dedicated, stirring
Recording: Rich, sonorous

Mussorgsky's historical epic, unfinished at the time of his death, is offered here in the rich orchestration by Shostakovich. It

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BACH: Italian Concerto; French Overture in B Minor; Four Duets; Chromatic Fantasy and Fugue. Rousset. L'OISEAU-LYRE 433 054 (68 min). Christophe Rousset plays Bach on a restored 1751 harpsichord with a coloristic range so vast and luscious that each strand of music has its own distinct color and character. He sometimes lingers over details at the expense of forward motion, but that's a small price for hearing every phrase inflected with his inquisitive personality. *D.P.S.*

BIZET: Carmen Suite; Jeux d'Enfants; L'Arlésienne Suites Nos. 1 and 2. Orchestre de la Bastille, Chung. DEUTSCHE GRAMMOPHON 431 778 (69 min). The new Bastille Opera has barely been able to get a production onto the boards, but it seems to have had no trouble turning out a fast and facile recording of Bizet orchestral favorites. The clean brilliance of the performance under musical director Myung-Whun Chung and the dazzling recording rescue it from the category of complete kitsch. *E.S.*



RACHMANINOFF: Symphony No. 2; Vocalise. McNair; Baltimore Symphony, Zinman. TELARC 80312 (68 min). David Zinman's sympathy for Mozart is refreshingly apparent in his approach to Rachmaninoff's most popular symphony. Rarely have I heard it come off with such a clear sense of architecture, though the more emotional aspects are never slighted. In fact, Zinman's expressive phrasing makes this an unusually intimate reading. The recording quality is very good, and the filler *Vocalise* is thoughtfully and beautifully sung by the soprano Sylvia McNair. *D.P.S.*

SIBELIUS: Symphony No. 1. Vienna Philharmonic, Bernstein. DEUTSCHE GRAMMOPHON 435 351 (41 min). Despite the short measure—this is the only CD of the Sibelius First Symphony without a filler—the 1990 concert performance is electrifying, even with some exaggerated emphases in the lush lyrical episodes. A “maybe” for Sibelius purists, but a “must” for Bernstein admirers. Good sound all through. *D.H.*

TCHAIKOVSKY: Symphony No. 6 (“Pathétique”); Romeo and Juliet. Montreal Symphony, Dutoit. LONDON 430 507 (67 min). Charles Dutoit's “Pathétique” is on the cool side. The first movement is strong, straight,

sinewy; the second movement's 5/4 “limping waltz” needs more lilt and grace; the frenetic third-movement march gets virtuoso treatment. But it is the steadily paced *Adagio lamentoso* finale that works best. *Romeo and Juliet* is also cool, but it finally catches fire in the reprise of the love theme. As always from Montreal, excellent sonics. *D.H.*



WAGNER: Tannhäuser, Overture and Venusberg Music; Parsifal, Prelude to Act I and Good Friday Music; Rienzi, Overture. New York Philharmonic, Mehta. SONY SK 45749 (65 min). These are highly satisfying treatments of familiar orchestral excerpts (with the brief choral episode in the Venusberg Music sung by the Westminster Choir). Both *Parsifal* excerpts are expansively performed, perhaps too much so for the Good Friday Music. The orchestra plays well, and Zubin Mehta sensibly understates the bombast in the *Rienzi* overture. The oft-maligned Avery Fisher Hall provides a warm and resonant ambience. *G.J.*

ALEXANDRE LAGOYA: Plays Bach/ Scarlatti/Weiss. ERATO 45692 (55 min). This album of guitar arrangements includes Bach's *Jesu, Joy of Man's Desiring*, a suite of familiar pieces from his Anna Magdalena Notebooks (none by Bach himself), four neat and free transcriptions of sonatas by Domenico Scarlatti, and four pieces by the Baroque lutenist Silvius Leopold Weiss—all arranged and cunningly strummed by Alexandre Lagoya. Nice going—even if there is something pat and calculated about it all that leaves me in a state of decidedly modified rapture. *E.S.*

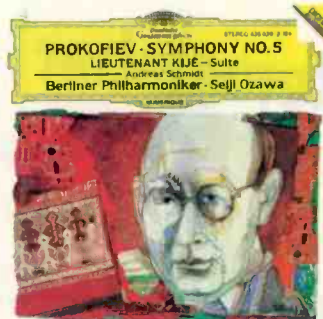
NATHALIE STUTZMANN: Ravel and Debussy Méloides. RCA VICTOR 60899 (67 min). The lush timbre of the young French mezzo Nathalie Stutzmann casts a warm spell over this recital. Debussy's *C'est l'Extase* and *Green* seem overdrawn, but the brooding passion of *Spleen* is vividly caught (all from *Ariettes Oubliées*). Stutzmann is in her element with his declamatory *Le Balcon* (one of five Baudelaire settings), but the three *Chansons de Bilitis*, though securely and attractively vocalized, are short on intimacy. Ravel's *Histoires Naturelles* is a problematic group of songs, but the performance is certainly praiseworthy. Catherine Collard's assertive and colorful pianism matches the singer's approach, and the recorded balance between them is excellent. *G.J.*



embraces some of the composer's most affecting music, but it is not an easy opera. Depicting the religious and social strife in Russia just before the ascension of Peter the Great, Musorgsky's libretto, written by himself, presents a sprawling series of events and emotions. There is no truly unified plot, no truly central character, unless—as in *Boris Godounov*—it is the people of Russia. But in *Boris* there is the towering figure of the Tsar to hold things together, and the people have a single voice in the Simpleton. Such focal points are absent in *Khovanshchina*.

There are a few set pieces—Marfa's song and Shaklovitya's aria in Act III, the Persian dances in Act IV, and the colloquy between Golitsyn and Ivan Khovansky in Act II—but for the most part, the music reflects the rhythms and cadence of speech rather than offering soaring melodies or dramatic effects that are primarily musical. And yet there are passages I can only describe as glorious; happily, their number seems to increase as the opera progresses, and the concluding scenes offer greater musico-dramatic cogency than earlier sections.

Among the huge cast, special mention should be made of Alexei Steblianko's Golitsyn, Olga Borodina's Marfa (her divination scene in Act I is especially memorable), and Bulat Minjckiev's Prince Ivan Khovansky. The Kirov Opera Chorus sings with uncommon fervor, and the orchestra plays expressively. Molding his immense forces into an effective ensemble, Valery Gergiev proves an exacting and sensitive conductor. *R.A.*



PROKOFIEV: Symphony No. 5; Lieutenant Kije Suite
Berlin Philharmonic, Ozawa
DEUTSCHE GRAMMOPHON 435 029 (62 min)
Performance: Beautifully played
Recording: Striking

Prokofiev, who went back to Russia and made his peace with Stalin, has not fared well in these post-Communist days—at least

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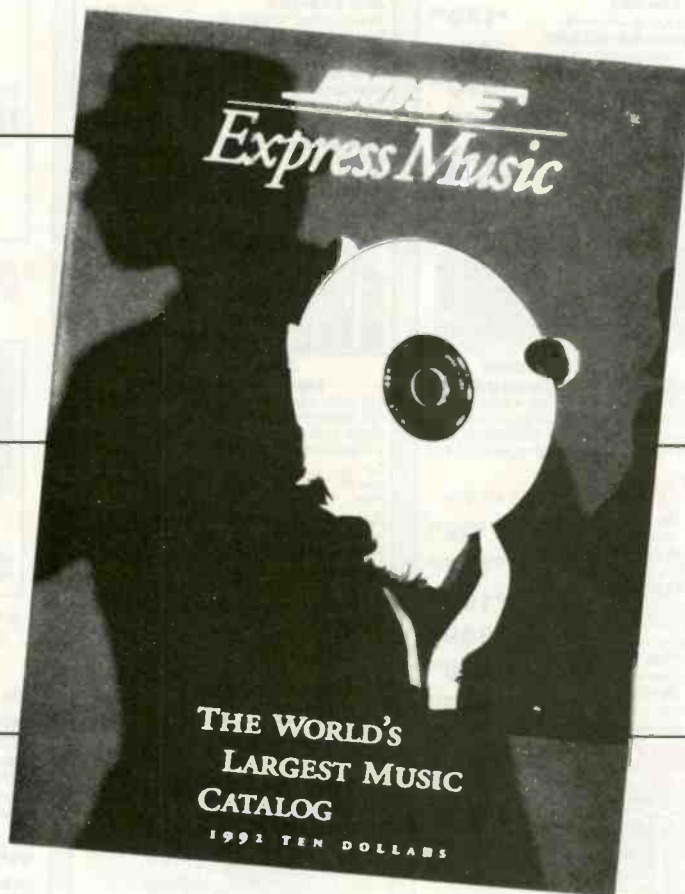
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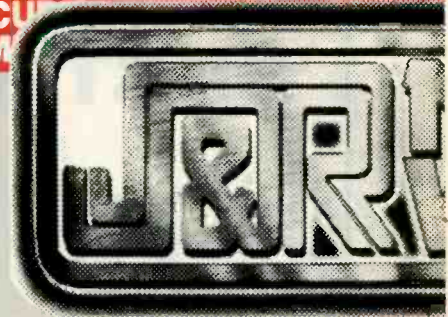
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Remote Audio/Video Receiver
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Our Low Price **\$399⁹⁵** (TEC SAGX710)

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•70 watts/channel remote

JVC RX-307 \$199⁹⁵
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Sherwood RV-5010R \$259⁹⁵
•85 watts/channel, Dolby surround sound

Technics SA-GX303 \$279⁹⁵
•85 watts/channel remote

JVC RX-707V CALL
•100 watts/ch. remote, Dolby Pro Logic

JVC RX-905 CALL
•120 watts/channel, remote, 7 band EQ

Receivers/Amps

JVC RX-206
Remote Stereo Receiver
•40 watts per channel •AM/FM tuner with 40-station presets •4-speaker matrix surround •Discrete output transistors •Full-function wireless remote control

Our Low Price **\$149⁹⁵** (JVC RX206)

Sherwood RA-1140 \$99⁹⁵
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Teac AG-500 \$159⁹⁵
•Integrated Amp 50 watts/channel

Technics SA-GX530 \$359⁹⁵
•Receiver, 110 watts/ch, Dolby Pro Logic

Sherwood RV-6010R \$399⁹⁵
•Receiver, 105 watts/channel

Technics SA-GX730 \$549⁹⁵
•Receiver, 125 watts/ch, Dolby Pro Logic

JVC RX-507V CALL
•Receiver, 80 watts/ch, Dolby Pro Logic

Compact Disc Players

Technics SL-PG300
CD Player with Remote Control
•MASH 1-bit digital-to-analog converter •Digital servo system •Peak level search •20 track programming •Edit guide for taping •Headphone jack •Wireless remote

Our Low Price **\$149⁹⁵** (TEC SLPG300)

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•4X oversampling 16-track programming

JVC XLV-151 \$129⁹⁵
•6X oversampling, titanium finish

Teac PD-555 \$129⁹⁵
•6X oversampling, remote control

JVC XLZ-451 \$199⁹⁵
•6X oversampling, remote titanium

Technics SL-PS700 \$269⁹⁵
•32X oversampling, MASH, remote

Technics SL-PS900 \$399⁹⁵
•64X oversampling, remote w/ level control

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Teac V390CHX
Cassette Deck
•Direct function mechanism •Dolby B & C noise reduction •Dolby HXPro headroom extension •Bias fine adjustment •2-color LED peak level meters

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Teac V-510 \$109⁹⁵
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JVC TDR-441 \$199⁹⁵
•Auto-reverse, Dolby B/C/HX Pro

Technics RS-BX606 \$259⁹⁵
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JVC TDV-541 \$299⁹⁵
•3-head, Dolby B/C/HX Pro, bias control

Technics RSB-965 \$499⁹⁵
•3-heads, Dolby B/C/HX Pro, dbx

Double Cassette Decks

Technics RS-TR232
Auto-Reverse Dual Cassette Deck
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Technics RS-TR15 \$249⁹⁵
•Dual auto-reverse, Dolby B/C/HX Pro

Teac W-6000R \$449⁹⁵
•Dual auto-rev, Dolby B/C/HX Pro, pitch

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Aiwa NS-X330
Mini Stereo System
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Aiwa NSX-D2 \$249⁹⁵
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Panasonic SC-TS230 \$319⁹⁵
•CD turntable, dual cassette, A/V remote

Aiwa NS-X350 \$499⁹⁵
•3-Disc CD Carousel, Dual Cassette

Denon D-120 \$799⁹⁵
•6 + 1 CD/tuner/ double cassette, remote

Denon D-150 \$999⁹⁵
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Technics SCC-H700 CALL
•Double auto-reverse cassette/ CD/tuner

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Studio Monitor Loudspeakers
•Professional monitoring quality •3-way with 12" low frequency driver, 5" midrange, and dome tweeter •Front panel controls •Oiled walnut finish •8 ohm •100 watt capacity

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•3-way, floor standing, 8" woofer

Bose 301-III Pair \$318⁰⁰
•Direct/reflecting 2-way

Cerwin-Vega AT-12 Pair \$399⁹⁵
•3-way, 12" woofer

Loudspeakers

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Two-Way Speaker System
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Technics SBL-80 Pair \$169⁹⁵
•3-way speakers, 12" woofer

Advent 350 Pair \$499⁹⁵
•2-way, 2.6-5" to-active woofer, floor standing

Cerwin-Vega AT-15 Pair \$599⁹⁵
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•Acoustimass 3-pc system

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•Transmits sound by utilizing RF radio frequencies •Fine tune circuit prevents drift •2-way •Includes speaker with built-in receiving circuit plus transmitter

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Bose 101 Pair \$169⁹⁵
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•Roommate II Powered Speakers

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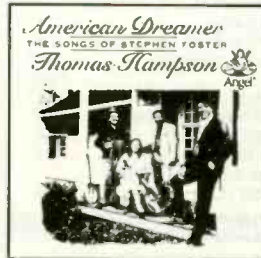
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 •Designed to allow the changing of 4 discs while one is in play •MASH 1-bit D/A converter
 •32X oversampling •10 key direct access remote •Spiral play •Synchro-editing
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 - JVC XLM-407 CD changer, 6 disc magazine + 1 in tray \$249.95
 - Technics SL-PD927 5-disc rotary 1-bit MASH, remote \$279.95
 - JVC XLM-507 6-disc + 1 changer, remote CALL

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 •Calibrated microphone •32-function remote •Black finish
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Headphones



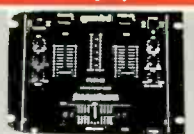
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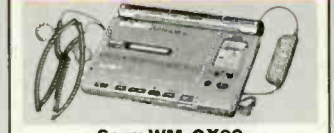
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with certain commentators, who seem to regard the composer as having been fatally tainted by collaborationism. Does the charge stick? There is, first of all, still a public for his music, especially for the hardy perennials like these. And in both of the cases at hand, Prokofiev seems to have succeeded in writing a work of popular appeal without losing his musical integrity or, for that matter, his critical faculties. *Kijé* is music for a satire on bureaucracy. Even that old wartime rouser, the Fifth Symphony, is full of ironic twists and turns.

Having been brought up on Leonard Bernstein's teeth-rattling Mahleresque version of the symphony, I find Seiji Ozawa's a little tame. But by any normal standard the music is beautifully played and strikingly recorded. A somewhat unusual and appealing feature of the *Kijé* suite here is the inclusion of the original vocal tracks for the second and fourth numbers, sung in Russian by the German baritone Andreas Schmidt.

R. STRAUSS: Don Juan; Metamorphosen; Death and Transfiguration

Vienna Philharmonic, Dohnányi
LONDON 430 508 (68 min)

Performance: Reserved
Recording: Muscular

The Vienna Philharmonic's special identity with the music of Richard Strauss is as much a matter of its own character as its close association with Strauss himself. Christoph



Christoph von Dohnányi: cool Strauss

von Dohnányi has forged close links with the orchestra, but I can't help feeling that his approach to Strauss would have been more happily realized with his own orchestra in Cleveland—which, of course, also has a proud Strauss tradition, shaped by Artur Rodzinski and George Szell. Dohnányi's cool, somewhat "distanced" readings are not without their strong points (clarity, precision), but they so

lack the direct, communicative emotion in these scores that one imagines he must have put some effort into expunging those qualities—and, with them, a good deal of the Philharmonic's rich, embracing string sound. Herbert Blomstedt takes a similar approach to two of the works here in his Denon recording without dulling the music's emotional impact. But most listeners will prefer straightforward, unsuppressed (not exaggerated) passion in these works—for example, the way the Vienna Philharmonic plays them (some on Telarc, some on Philips) under André Previn, who has become one of today's most persuasive Strauss conductors. R.F.

**TCHAIKOVSKY: Piano Concerto No. 1
GRIEG: Piano Concerto
LISZT: Piano Concerto No. 1**

Rodriguez, Sofia Philharmonic, Tabakov
ELAN/KOCH INT'L IMPORTS CD 2228 (77 min)

Performance: Fresh and grand
Recording: Sumptuous

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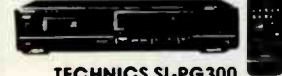
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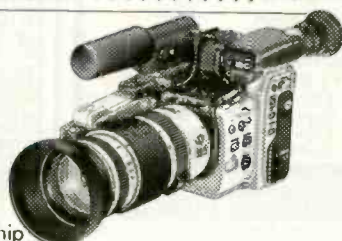


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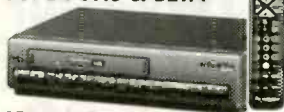
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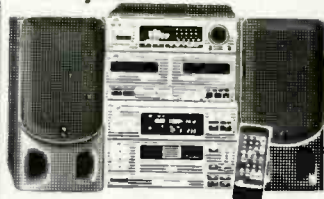
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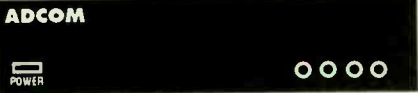


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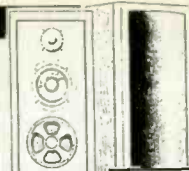
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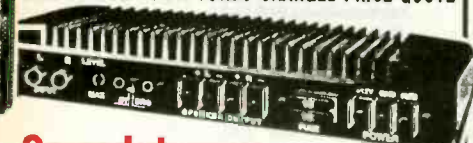
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trance that's both stylish and commanding, and his interpretations have a largeness and spontaneity to them. Few other pianists use rubato so unselfconsciously and with such heartwarming musical results.

But the most gratifying aspect of this disc is the close collaboration between pianist and conductor. You don't realize how much that is missing both on records and in the concert hall until you hear a meeting of musical minds like this one. It makes the Liszt seem less sprawling and the Grieg, which can seem a succession of miniature pieces, a more integrated whole. Though Rodriguez's previous recordings in Sofia haven't always been well recorded, this one could teach a lesson to engineers from much larger labels. *D.P.S.*

Collection



TRIO FONTENAY: Piano Trios by Ravel, Debussy, and Fauré
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Performance: Refined
Recording: Excellent

The young Trio Fontenay, named for a street near the Hamburg College of Music, where the group was organized in 1980, clearly aims to be comparable to the long-established Beaux Arts Trio. Over the past half-dozen years the Trio Fontenay has tackled much of the German and Slavic repertoire, along with Charles Ives. This CD appears to be its first excursion into the French repertoire, and they do well by the sharply contrasting Ravel, Debussy, and Fauré trios, each its composer's only essay in this form.

"Limpid" would best describe the opening pages of the Ravel, for me one of the composer's peak works. There is prickly brilliance aplenty in the second and fourth movements, but it is the noble *Passacaille* that is the high point here. The Debussy Trio in G is a student work evidently composed when he was house pianist to Tchaikovsky's erstwhile patroness, Nadejda von Meck. It has its pleasing moments, as in the third-movement cello solo, but it's certainly not in a class with its companions on this disc. The Fauré D Minor Trio was next to the last work from the composer's pen, and by that time he had become quite deaf and was in poor health. The first movement is deceptive in its seeming serenity. The intense slow movement carries the most musical substance, but only the finale has real rhythmic energy, with a figure curiously akin to the familiar opening pages of Leoncavallo's *Pagliacci*. The Fontenay's reading is eminently satisfying and very well recorded. *D.H.*

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CENTER STAGE

BY HERBERT KUPFERBERG

Simon Rattle

SIMON RATTLE is reliving the twentieth century, ten years at a time. The gifted thirty-seven-year-old British conductor, who has built the City of Birmingham Symphony Orchestra into a world-class ensemble, is burnishing his reputation for inventive programming with a series of concerts entitled "Towards the Millennium."

Each year he sets aside six weeks of his Birmingham season for concerts devoted to one decade of the past century. In April he brought a sampling of his series to the U.S. when the Birmingham orchestra—consisting of players whose average age is even younger than his own—gave three concerts each in Boston's Symphony Hall and New York's Carnegie Hall of music written in the years 1911 to 1913. Composers represented included Nielsen, Ravel, Schoenberg, Prokofiev, Debussy, Elgar, and Stravinsky—a surprising variety of nationalities and styles.

"This has been an eventful, bizarre, and chaotic century for music," Rattle said in an interview during his visit to New York, "and what we are doing reflects this. Our decade-by-decade approach throws up some odd combinations, but the works we are playing really are the foundation pieces of the century. The nineteenth century began to hold retrospectives of itself as far back as the London Exhibition of 1851, and it kept right on doing so. It was at the Paris Exposition of 1889 that Debussy and Ravel first heard gamelan music.

"So it occurred to me that we might begin celebrating our own century with the same kind of love and care, and we decided to do it bit by bit. We started last year with 1900-1910, and now we're doing 1910-1920. By the year 2000 everybody will be looking back with a rosy glow. Perhaps in 2001 our project can be new commissions!"

Rattle, who launched his brilliant career by winning the John Player International Conducting Competition in 1974 when he was nineteen, is by no means limiting his innovative activities to his Millennium series. Indeed, he remains fixedly on the relatively narrow but productive path he has followed so successfully, centering his activities in Birmingham, where, as a kind of local idol, he can play what he wants. He limits his guest conducting mainly to the Glyndebourne Opera, the Berlin Philhar-



monic, and the Los Angeles Philharmonic. A devoted family man—he and his wife, the American soprano Elise Ross, are the parents of two boys aged eight and two—he avoids leaving home for more than two months at a stretch and as a result has turned down prestigious offers, including one from the Metropolitan Opera.

"In Birmingham," he said, "I have a group of very enthusiastic young musicians who want to explore and play music in a different way. Bernard Haitink once told me: 'Only four or five orchestras in the world are better than yours, and you don't really want any of them.' I have no plan or desire to move. But whatever happens, I certainly intend to continue my relationship with Birmingham."

Rattle maintains an active recording schedule for EMI. Slated for release soon is Mahler's Symphony No. 7 and Walton's Symphony No. 1, and for next year Henze's Seventh and Elgar's *Falstaff*. Already out is Janáček's opera *The Cunning Little Vixen* (sung in English), Ravel's *Daphnis et Chloé* coupled with the inevitable *Boléro*, and Mahler's Tenth.

He would like to see his Millennium series better represented on records, with perhaps one CD devoted to each decade. "But record companies move slowly," he said. "EMI has helped us enormously by producing a tape cassette for study in

schools, with excerpts on one side from Charles Ives to Jelly Roll Morton and the complete *Rite of Spring* on the other. But it's not for sale."

Rattle says he tries not to build his concert programs around his recording schedule, lest "the tail wag the dog." In operatic recording he decries what he calls the "rent-a-cast" procedure of some record producers: "You know, they engage the obvious people, fly them in and out, often without having worked together before. When we recorded *Porgy and Bess*, the singers and I had worked together for two and a half years, and I believe you can hear that. In general, I like to work with older singers—they bring so much more to their parts. I've had violent differences with producers about casting; I'm interested more in character and understanding than in pure beauty of sound. So I don't know where I'll go with operatic recordings."

One operatic enterprise, as yet unscheduled for recording, is Debussy's *Pelléas et Mélisande* staged by Peter Sellars, which Rattle will be conducting next year both with the Rotterdam Philharmonic and the Los Angeles Philharmonic. His own favorite *Pelléas* recording, Rattle says, is the half-century-old version conducted by the late Roger Désormière.

Rattle is becoming interested in the period-instrument movement. "I'm dipping my toe into the waters," he said. "I've been doing some work with the Age of Enlightenment Orchestra, which was formed by some of the leading players of other period-instrument ensembles. Many conductors are also working in the area. If you want to hear really good Haydn, listen to Frans Brüggen. If you want to hear great Beethoven, listen to Nikolaus Harnoncourt. I see a synthesis developing between period instruments and modern instruments, with many conductors doing both."

Certainly there is every reason to expect Simon Rattle to be increasingly involved in this aspect of orchestral music, as he is in so many others. "Conductors are supposed to get better when they grow older," he said with a smile. "I've got time." □

Herbert Kupferberg, a senior editor of *Parade* magazine, is the author of *The Book of Classical Music Lists* (Penguin) and other books on music.

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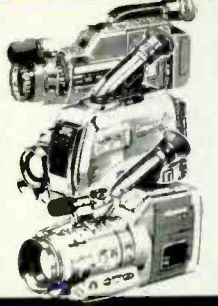
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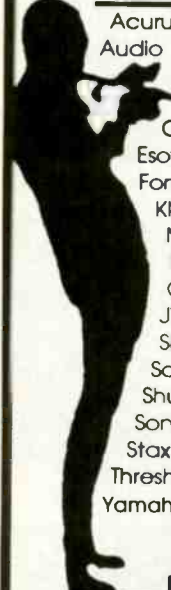
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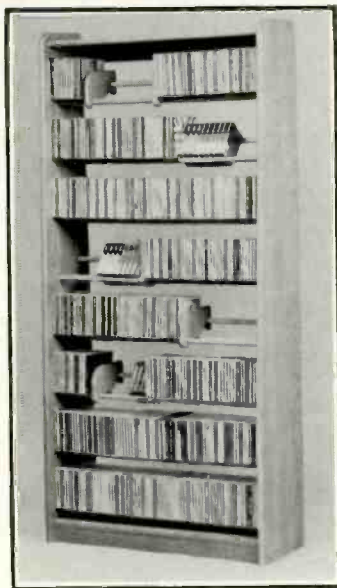


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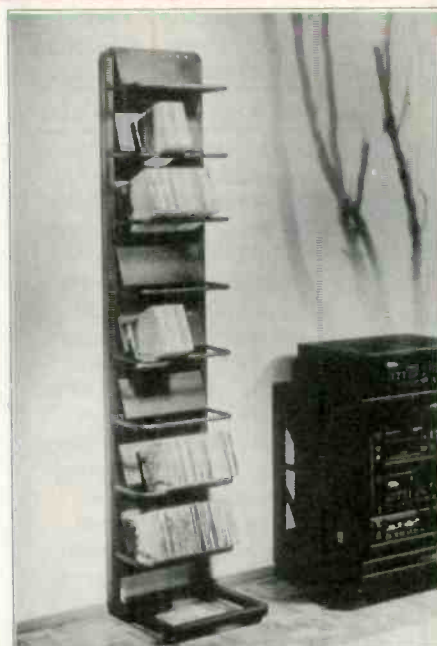
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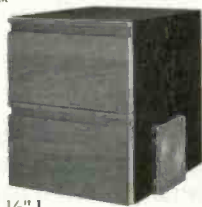


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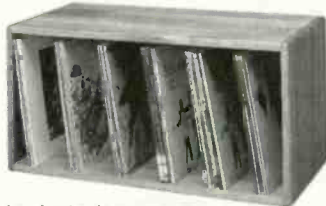
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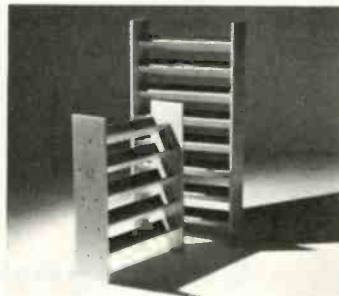
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THE HIGH END

BY RALPH HODGES

The Cornucopian Basement

"It's always happening. A guy has an idea for an audio product, and when initial development shows promise, he gets carried away. Suddenly there are several engineers, secretaries all over, telex machines, photocopiers, and who knows how many square feet of factory space. Even before the product is ready for market, the guy has serious debt, and he needs a backer. If he finds one, the backer will own the company in the space of a few years. That's what backers are good at.

"I have a factory. It's in my basement [in Westfield, New Jersey]. It does product design, development, and assembly, plus sales and billing operations. It does all these things very well and very profitably. And I'll never lose it."

Joseph Grado also has some storefronts in Brooklyn where workers produce phono cartridges, the product he's best known for, with practiced and largely unsupervised ease. They can do this because Grado's first career, in which he won international acclaim at the age of sixteen, was as a master watchmaker, and now, at almost seventy, his skills in precision fabrication and production techniques may be unsurpassed. To my reasonably certain knowledge, he has never made an undistinguished product, and he has never failed to back up his work, on the telephone, in your ear. (My first conversation with Grado occurred when I was sixteen; he's the person who answers the phone.)

The irony of Joe Grado's existence is that his technical accomplishments are overshadowed by the man himself. As many audiophiles know, he is an operatic tenor. The presumption instantly arises that he is a pretentious amateur, but the fact is that he is a major talent. Should you ever have occasion to talk with him (he's still the one who picks up the phone), you might consider that every syllable he utters could be worth many dollars were he dispositionally inclined to-

ward a performing career (it's actually the rehearsals he likes, not the schedules of the stage business). He has also made violins, and he is starting in on elaborate piano modifications for which he evidently has industry backing. According to his needs, he designs microphones and amplifiers and produces recordings, some of which turn up commercially in various forms. Considering the foundation of his business, you'd expect him to favor analog recording and reproduction, but he's aggressively pro-digital and has been for years, rebuilding VCR's and digital encoders to meet his standards. And these are merely his activities, past and present, that relate to audio and musicmaking.

The Grado legend, as fostered by the faithful, insists that the hand of the master has been laid upon every phono cartridge that leaves his shop. This is not strictly true. After assembling several dozen preliminary samples to refine production procedures, Grado

winning back much of his market share. Somewhat later, he led other cartridge makers, largely Japanese, on a merry chase to stratospheric price levels, and once he got them there announced that he was going to aggressively defend his basic patents on moving-coil cartridge design. The licensing fees most of them agreed to pay amounted to a handsome income in themselves.

The most noteworthy new products in Grado's Signature line are an all-out headphone that has received the endorsement of many music, recording, and audio people, a small amplifier to drive it, and a forthcoming speaker system. The speakers, 7-foot towers with outboard bass modules, have forty 1/4-inch drivers in a vertical line array. (These drivers happen to be the same ones used in the headset.) Grado vows that when the design is complete, you will be able—with his microphones, presumably—to record the speakers' acoustical output and

**Considering the foundation of Joe Grado's
business—phono cartridges—you'd expect him to
favor analog recording and reproduction,
but he's been aggressively pro-digital for years.**

does make the first 1,000 production units of any new model, even the least expensive. After that, assuming all has gone well, he considers the design sufficiently bullet-proof to be handled by the Brooklyn facility.

Grado readily admits—and even glories in—manipulating the cartridge market now and again. Several decades ago, when a major turntable manufacturer (Dual) teamed with a major cartridge manufacturer (Shure) to provide a virtually free cartridge with every turntable, Grado, who had a turntable in his line at the time, felt his back against the wall. So he threatened, and delivered, a premium-quality cartridge for under \$10, thereby

get a tape that is indistinguishable from the original source material. I have heard this attempted many times but never with any great success, so I look forward to challenging Grado's claim. There's no telling when I'll get the chance, though. Grado is not interested in putting himself on any timetable for product introductions.

As he says, "I already have enough money and enough notoriety, as well as enough things to do. I'm not interested in being a pioneer anymore. I am willing to teach, however. Just come to me and I'll tell you what I know, and even what I *think* I know, gladly. This torch has burned pretty brightly. I'd rather pass it on than see it go out." □

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