

# Stereo Review

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1J

A photograph of three men in cowboy hats standing in a field at sunset. The sky is a mix of orange, yellow, and blue. In the foreground, the lower legs and hooves of a dark horse are visible, kicking up dust. The men are standing in a line, looking towards the camera. The overall mood is rugged and nostalgic.

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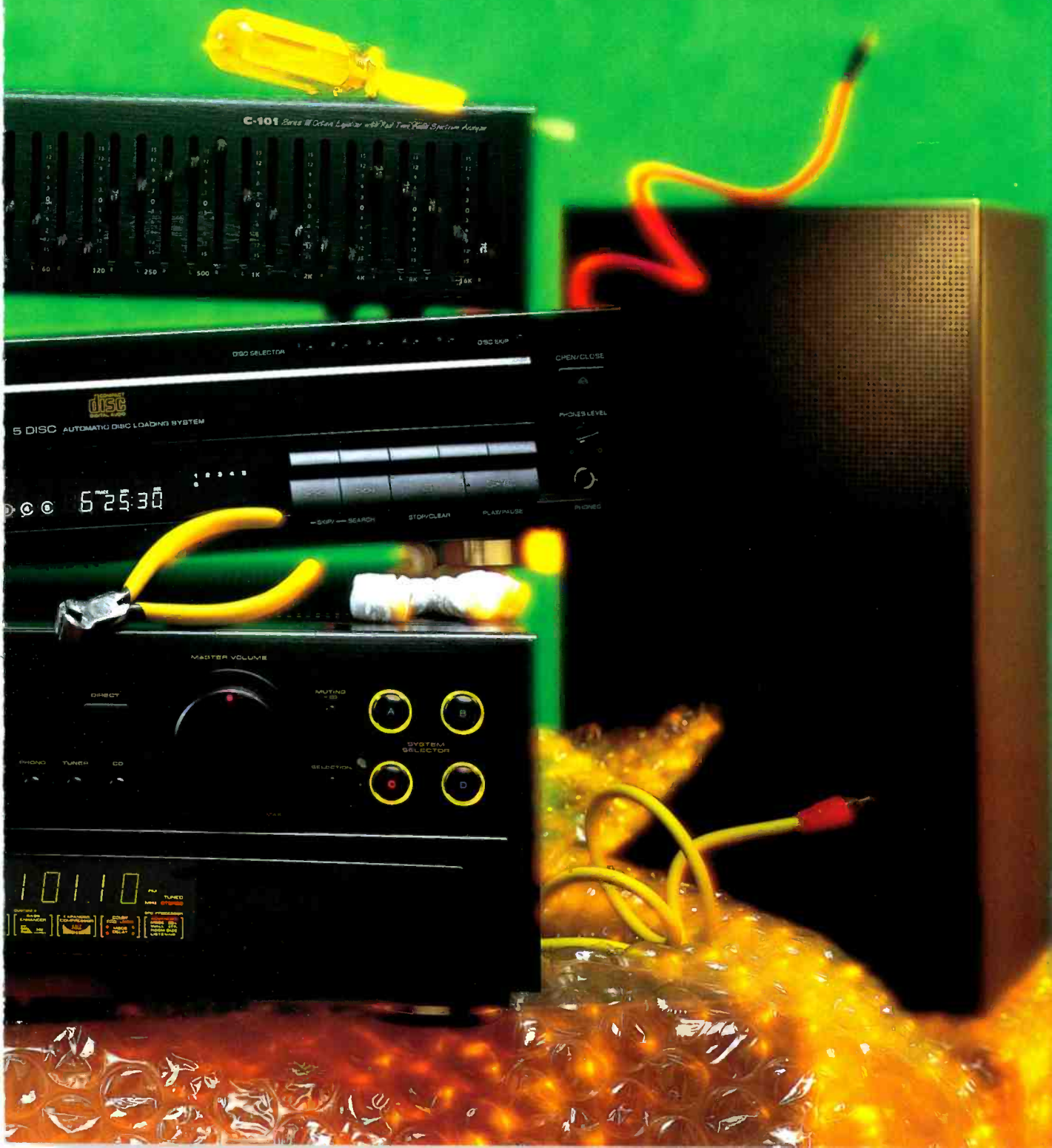
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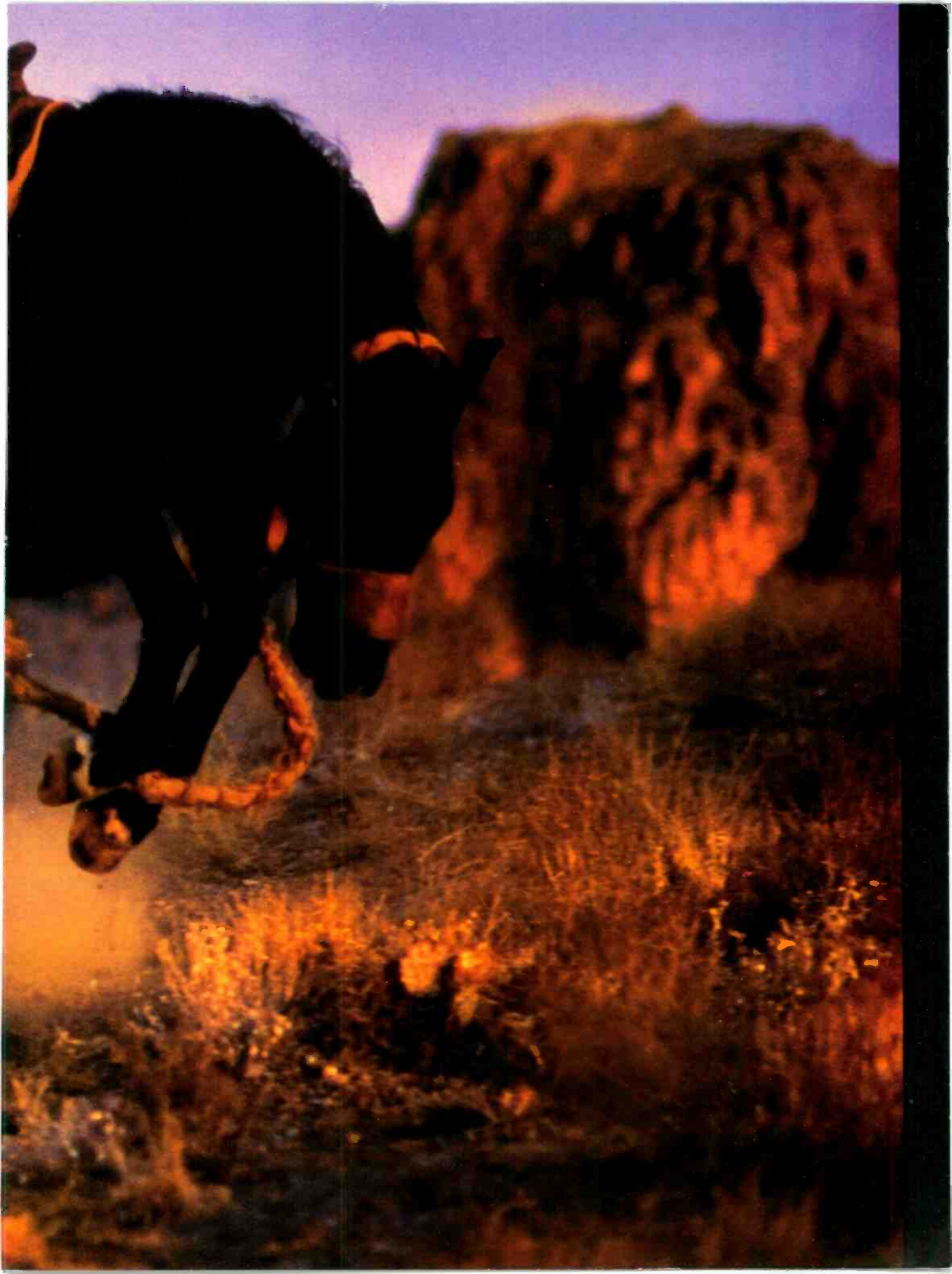
## SIGNALS: THE BIG CHILL

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## A/V FURNITURE SHOWCASE











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DO WITH THE STEREO.



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**Cover**

Just unpacked, the Audio Control C-101 Series III equalizer, Sherwood CDC-5030R CD changer, Pioneer VSX-D2S receiver (reviewed in this issue, page 35), and ADS S700 speaker are not quite ready for action—the way components are hooked up can make a big difference in their performance. See our cover story, page 64, for some invaluable tips.

Photograph by Jeffrey Krein

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# Stereo Review®

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# BULLETIN

BY WILLIAM LIVINGSTONE  
AND BOB ANKOSKO



## FOR THE LOVE OF MUSIC

How much do Americans love music? Last year we spent about twice as much on CD's and tapes as we did on going to the movies or attending sporting events. Specifically, we bought 503 million CD's and CD singles (that's two discs for every man, woman, and child), 425 million prerecorded cassettes (album-length and singles), and about 16 million vinyl LP's, EP's, and singles, according to the Recording Industry Association of America (RIAA). Throw in another 11 million music videos and we plunked down \$10 billion to keep the tunes flowing.

The RIAA reported that rock and country were the reigning genres of 1993, respectively grabbing 32.6% and 17.5% shares of the overall market. Pop was next in line with 11.7%, followed by the 9.9% share garnered by the urban-contemporary category. Rap, which was broken out as a separate category for the first time, picked up a 7.8% share.

## TAPING STATISTICS

CBS-TV claims that the largest U.S. audience in television history (119.2 million people) watched the women's figure-skating finals in the Winter Olympics in Norway this year. A survey by Fuji Photo Film USA indicates that one out of six Americans taped portions of the Olympics, and 80% of the videotapers recorded women's

figure skating. Only about 43% of those surveyed admitted that the Tonya Harding/Nancy Kerrigan controversy influenced their taping decisions. . . . New antipiracy statistics from the RIAA show a decline in the retail sales of counterfeit prerecorded audio cassettes. Two million counterfeits were seized in 1993, down from 2.5 million in 1992.

## COSMIC TURNTABLE

Wondering what to do with that old turntable in your attic? *Scientific American* recently noted that a turntable is "the ideal device" for making a parabolic telescope mirror. You put a mixture of resin and hardener in a plastic container, place it on the platter, and set the table in motion. The faster the rotation, the shorter the focal length. Oh, and don't forget to remove the phono cartridge. Guess the guys who designed the Hubble space telescope should have used a high-end turntable. . . . Speaking of turntables, after a five-year hiatus Mobile Fidelity has resumed production of half-speed-mastered vinyl LP's, this time under the ANADISQ 200 banner. Three numbered, limited-edition LP's are now available for \$25 apiece: Manhattan Transfer's "Extensions," Pink Floyd's "Atom Heart Mother," and "Tales of Mystery and Imagination/Edgar Allan Poe" from the Alan Parsons Project.

## CLASSICAL NOTES

Sony Classical has released on MiniDisc thirteen of its best-selling recordings by such artists as Vladimir Horowitz, Murray Perahia, Jean-Pierre Rampal, Midori, and John Williams and the Boston Pops. . . . In the Classical Music Awards in England, the New York Philharmonic was chosen as Orchestra of the Year in recognition of both the excellence of its playing and its initiatives in taking classical music to wider audiences. . . . In observing the 400th anniversary of the death of the composer Giovanni Pierluigi da Palestrina (1525-1594), Harmonia Mundi is distributing a four-CD set of his music as performed by the Tallis Scholars, a British group devoted to a *cappella* music of Renaissance masters. Total playing time is 4 hours, 9 minutes.

## A/V TIDBITS

Philips plans to phase out the Sylvania brand—one of the oldest names in TV—by the end of the year in an effort to focus its marketing efforts on the Magnavox line. . . . The Grand Alliance, the consortium of manufacturers and research concerns that's been working on a high-definition-TV broadcast system for the U.S., has selected Zenith's digital VSB transmission system in what is said to be its final major technical decision. The complete HDTV system is scheduled for final field testing in early 1995, which means it could go on line as soon as 1996.

## BACKWARD GLANCES

Chesky Records has released a treasurable souvenir of the late Astor Piazzolla, the Argentine composer, conductor, and master of the accordion-like bandoneon. It is a live recording (in excellent sound) of a concert given by Piazzolla and his quintet in Central Park in 1987. . . . Those hungering for a revival of the New Wave music of the early 1980's will find it on Oglio Records' series of Flashback Favorites chosen by the West Coast DJ Richard Blade. The first three volumes include cuts by ABC, Adam and the Ants, Bananarama, and others.

## HIGH ACHIEVERS

The soundtrack recording of *The Bodyguard* and Whitney Houston's hit song from it, *I'll Always Love You*, swept the 1994 Grammy Awards. According to the RIAA, sales of the album reached 11 million by March 1, which means that it tied with *Saturday Night Fever* and *Dirty Dancing* as the best-selling soundtrack in history. . . . Houston also won in seven categories in this year's American Music Awards. . . . The Rhythm-and-Blues Foundation gave its Lifetime Achievement Award to Little Richard Penniman. □


ILLUSTRATION BY TERRY ALLEN





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# LETTERS

## Making Good Tapes

I'm glad Steve Schwartz ("How to Make Good Tapes" in March) thinks the term "total wuss" applies to those who put entire CD's or LP's on tape. Every tape I make on my three-head, three-motor cassette deck is painstakingly, lovingly created from varied sources, such as my *Billboard* "Hot 100" compilations.

HARRY S. ANCHAN  
Calgary, Alberta

I disagree with Steve Schwartz's assertion that metal tape isn't worthwhile. I like the extended treble and lower hiss of metal (4 dB less than chrome), especially with surround sound. Also, I've found very good metal cassettes for the same price as the best chrome tapes, around \$2 apiece for C-90's, and *excellent* metal cassettes for \$3.

Tip: Country music with bass beat, steel guitar, and twangy vocals is ideal test material for fine-tuning bias.

NIGEL LITTLEJOHN  
New York, NY

*Metal tapes typically have slightly more noise than chrome, though it can be overcome by recording at the higher levels metal can accommodate.*

Nice article on home recording in the March issue, but there was no mention of the very best way "to make good tapes." I record on Super-Beta or S-VHS videotape. The quality is comparable to CD and DAT, the recording time is hours rather than minutes, and the cost per hour is minuscule.

JOE BELOTTE  
Bethesda, MD

Steve Schwartz recommends isopropyl alcohol for cleaning tape-recorder heads, capstans, and pinch-rollers. Drugstore isopropyl alcohol often contains oils and other additives that could be absorbed into rubber pinch-rollers and cause tape slippage. De-natured alcohol from a hardware store contains no additional ingredients.

Second, it is rare to find any cassette-deck pause button that doesn't leave an annoying click or worse on the recording. Setting up a program for taping on a carousel CD changer solves such problems, providing several seconds between selections but no extra noise.

JIMMY JORDAN SMITH  
New York, NY

*Most drugstores also sell pure isopropyl; just avoid off-the-shelf rubbing alcohols.*

## Ralph Hodges

I was reading the March issue and learned of Ralph Hodges's death. Though I didn't know Mr. Hodges, I came to enjoy

his descriptive and fluent writing. His "High End" columns were down to earth, without too much techno-jargon, clear and meaningful, always pulling me in with wit and style. I'd like to offer my sincerest and deepest condolences.

DEWAYNE MURPHY  
Portland, IN

My deepest thanks to Ralph's readers, colleagues, and friends for their expressions of sympathy and support. It's never easy living with an audiophile, but Ralph was generous with the use of our "Yellow Room" and often even indulged my less-than-classical tastes in music.

As a footnote to his final column, he was immensely pleased by the results of "breaking in" his new Parasound amplifier, and using it to power up his beloved "Maggies" gave him many hours of pleasure during his last days.

MARIA MALONE HODGES  
Hoboken, NJ

## Record of the Year Reviews

I look forward to your "Record of the Year Awards" each February. I laboriously cross-referenced the 1993 awards against the annual Editorial Index so that I could read the reviews. Lo and behold, only five of the twelve best were listed, and only seven of the twenty-four honorable mentions.

I assume you reviewed all of them in the past twelve months (am I wrong?), but I don't want to go through a year's issues to find them. Couldn't you indicate the issue and page of the original reviews so readers can check them and decide if they want to buy the recordings?

KENNETH M. JACKS  
East Haven, CT

*Good idea, and we'll keep it in mind for next year. All of the winners were reviewed at some point, but not all of the honorable mentions. Only "Best of the Month" reviews and featured reviews are included in our annual index. Remember, though, that a review represents only one critic's opinion: Record of the Year winners are chosen by the editors and all of our critics.*

## Double Royalties?

As a professional composer, I'd like to correct an inaccuracy in Alan Applegate's letter, "Used CD's," in February. He said, "If I record a selection off the air onto MD . . . the artist gets paid several times: for the original recording, for the broadcast, and as part of the purchase prices of my MD system and blank MD." If that were true, then the MD royalty would violate the "first-sale doctrine" of the Copyright Act, thereby cheating consumers. But what Mr.



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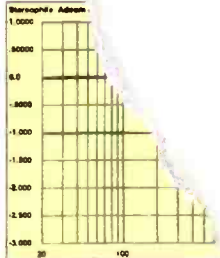


Fig. 1 Adcom GDA-600, fr  
(top); de-emphasis err  
channel dashed, 0.5dB

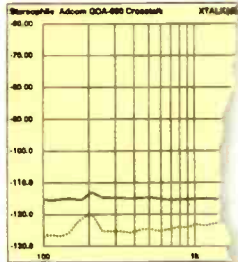


Fig. 2 Adcom GDA-600, cr  
dashed, 10dB/vertical

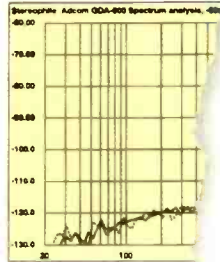


Fig. 3 Adcom GDA-60  
1kHz tone at -9  
spuria (1/3-octave  
dashed).

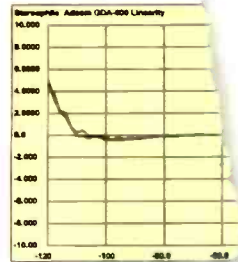


Fig. 4 Adcom GDA-600, de  
linearity (right chann  
2dB/vertical div.).

## “Nothing less than a steal.”

—Robert Harley, *Stereophile*

There's something in this review of our GDA-600 digital-to-analog converter that the competition doesn't want you to see. Maybe it's the fact that the GDA-600 makes digital formats sound richer and more musical. Or that it has advanced 20 bit conversion architecture and a Class "A" analog output stage. But what they really don't want you to see is that the GDA-600 costs much less than you might expect. For the full review see *Stereophile*, Volume 17, No. 3, (March '94). Or, if your copy has been stolen, give us a call.

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Applegate is overlooking is that recording off the air violates the doctrine in the opposite direction, cheating the artist/composer/publisher out of his one-time "mechanical royalty" from a record purchase.

Perhaps Mr. Applegate reasons that the broadcaster has already paid the mechanical royalty, but not many broadcasters actually purchase the recordings they air. In most such cases, the artist/composer/publisher gets mechanical royalties only when the listening public buys the recordings they've enjoyed hearing for free on the air.

The only situation in which the royalty is effectively collected twice is when someone makes, for his own use, a digital copy of a recording he has already purchased. While the present system doesn't make allowance for that, in the situation Mr. Applegate described, the royalty is only collected once, as it should be.

DANNY BAKER  
Newbury Park, CA

### Audio Cables

In "Technical Talk" in January, Julian Hirsch says the only properties of audio cables that can affect a signal are resistance, capacitance, and inductance. In an AC circuit, such as an audio circuit, those properties vary with frequency. A cable's values at 100 Hz may be different than at 10 kHz.

If a cable has a higher resistance in a certain frequency range, it will sound colored.

Together, capacitance and inductance cause a phase change. All musical sounds are combinations of many frequencies. If the phase of each one is altered, a noise that should arrive coherently (like a drum beat or a guitar strum) will arrive slightly spread out over time, making it sound duller, fuzzier, and less focused. This has been verified both on the oscilloscope and in double-blind listening tests.

KEITH WEINER  
New City, NY

*At audio frequencies, the resistive, capacitive, and inductive properties of a good cable (such as heavy-gauge zip cord) are constant. Their combination creates an impedance that does vary with frequency and will interact with the amplifier's output impedance and the speaker's input impedance to create small but measurable frequency-response changes at the speaker terminals. The changes usually occur, however, at ultrasonic frequencies or otherwise fall below the threshold of detectability by human hearing, hence their inaudibility during all of the scientifically controlled cable listening tests we know of. A cable's phase distortions are even less audible, because the ear is amazingly insensitive to rather huge phase distortions. A "duller, fuzzier, and less focused" sound could easily be caused by a slight high-frequency rolloff—which you can correct with greater predictability and at far less cost with a treble control.*

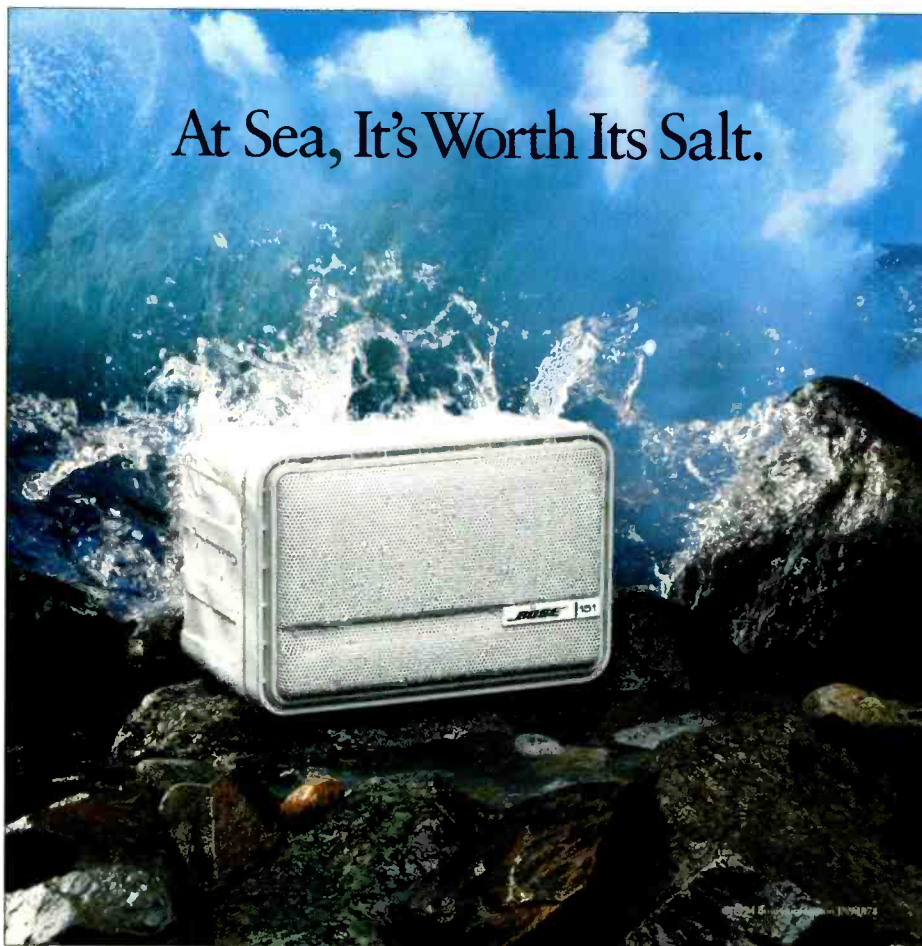
### Direct to Cassette

A few of the cassette decks listed in the "Tape Recording Buying Guide" in March are described as having a "CD direct input." Does that mean other decks require an additional input jack to perform this function, or would they require the additional input and additional circuitry?

R. V. WASDELL  
Charlotte, NC

*A line-level analog output from a CD player can be fed directly into any cassette deck's line-level input, but unless the deck has a second line input—such as the "CD direct input" you noted for some units in the March "Buying Guide"—you'd have to disconnect and reconnect it to record from a different source. Decks with a single input normally receive signals from CD's via a receiver, preamplifier, or integrated amplifier. Instead of additional circuitry, decks with a "CD direct" input are likely to have less circuitry for that input than for a conventional one—that is, the input may bypass the deck's balance or level controls.*

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



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I JUST POP IN A DISC AND HEAD OUT, FREE FROM CARE, UNWINDING IN BUMPER TO BUMPER MUSIC.

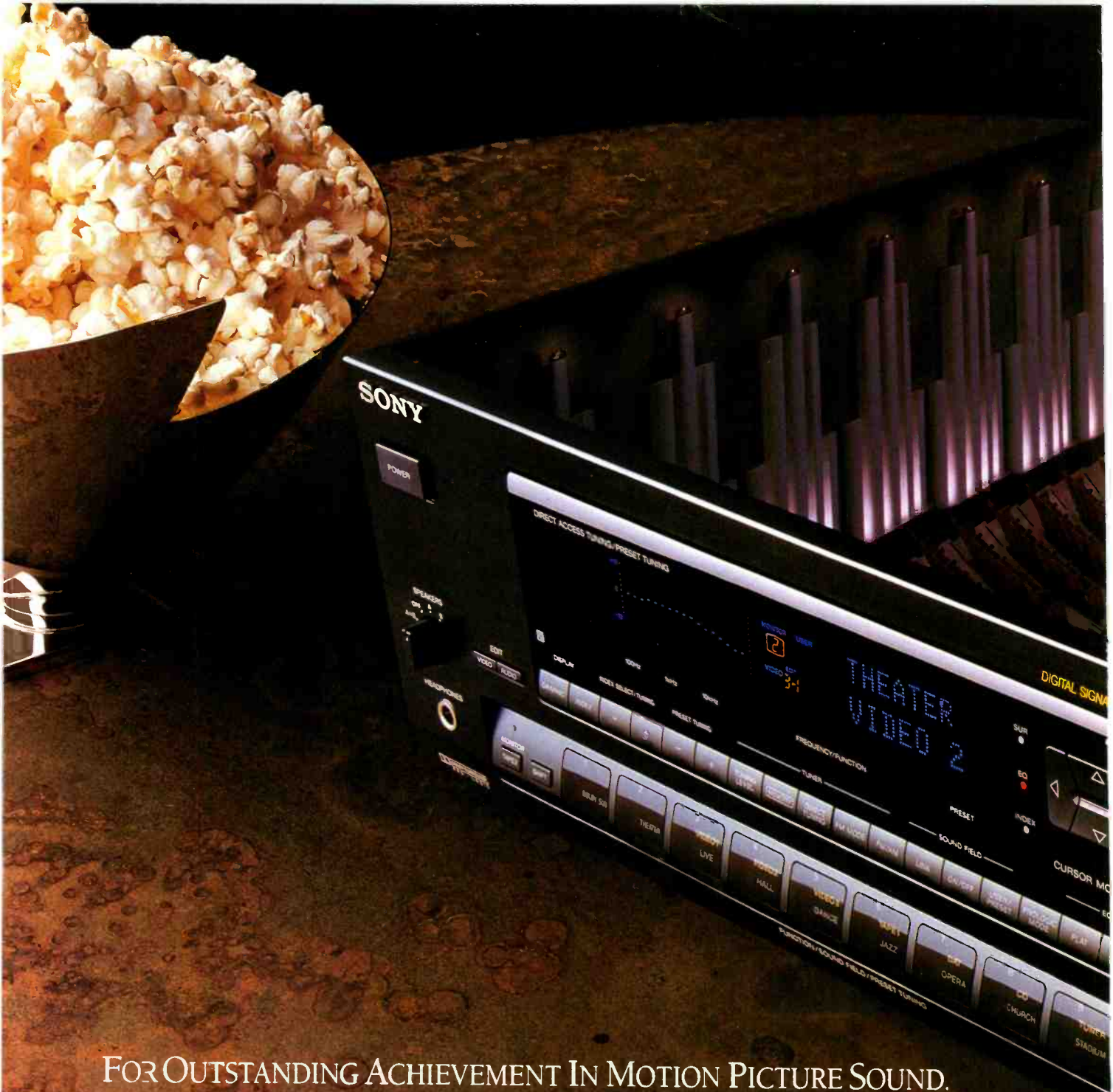
BUT HOLD ON TIGHT WHEN I CRANK IT. THIS HIGH POWER JENSEN CD RECEIVER'S 6 AUDIO OUTPUTS LET ME EASILY ADD EXTRA AMPLIFIERS. PLUS SUBWOOFERS FOR BASS THAT QUAKES THE BONES.



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# SONY



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# NEW PRODUCTS

## ▼ ATLANTIC TECHNOLOGY

Atlantic Technology's Model 253 C center-channel speaker has two rear-panel equalization controls designed to help match its tone to that of "most reasonably accurate" main speakers. One control adjusts tweeter level, the other the contour and level of critical midrange frequencies. The controls can also compensate

for tonal shifts that occur when the speaker is on top of a TV. The 253 C combines two 4-inch woofers and a ¾-inch tweeter in a black wood cabinet with an adjustable base. Price: \$269. Atlantic Technology, Dept. SR, 343 Vanderbilt Ave., Norwood, MA 02062.

• Circle 120 on reader service card



## ▼ YAMAHA

The KX-580 is the first cassette deck from Yamaha to offer Dolby S noise reduction as well as Dolby B and C and HX Pro headroom-extension circuitry. The two-head deck has a manual bias control and a play-trim control to adjust high-frequency response for more accurate Dolby decoding. It also

performs automatic bias adjustment. Infrequently used controls are behind a flip-down panel. Signal-to-noise ratio with Dolby S is given as 80 dB. Price: \$399. Yamaha, Dept. SR, 6660 Orangethorpe Ave., Buena Park, CA 90620.

• Circle 122 on reader service card



## ▲ TERK

Terk says its AM-FM Q powered indoor antenna is capable of pulling in up to 25 percent more listenable stations than the company's previous top antenna, the AM/FM Pi. The AM-FM Q has wide- and narrow-band reception modes, an adjustable "pre-

tuning" circuit that is said to minimize noise and interference in the narrow-band mode, and an LED signal-strength indicator. Price: \$100. Terk, Dept. SR, 65 E. Bethpage Rd., Plainview, NY 11803.

• Circle 121 on reader service card



## ▲ KENWOOD

Kenwood's DPC-741 portable CD player uses a 3-second buffer memory to minimize skipping and offers five ambience/EQ listening modes. A supplied Ni-Cd battery extender/charger is said to increase running time to 6 hours and achieve a full charge in 2

hours; batteries are recharged whenever the player is operating. A wireless remote control and headphones are included. Price: \$279. Kenwood, Dept. SR, P.O. Box 22745, Long Beach, CA 90801-5745.

• Circle 123 on reader service card

# NEW PRODUCTS



## ▲ SHARP

The MD-M11, Sharp's first portable MiniDisc recorder, which weighs in at only 10.6 ounces, has a 10-second buffer memory to minimize skipping as well as several editing functions, track/title labeling, and digital and analog inputs and outputs.

Headphones are included. The lithium battery is said to provide 2 hours of recording time. Dimensions are 3<sup>5</sup>/<sub>16</sub> x 1<sup>3</sup>/<sub>16</sub> x 4<sup>3</sup>/<sub>16</sub> inches. Price: \$750. Sharp, Dept. SR, Sharp Plaza, Mahwah, NJ 07430-2135.

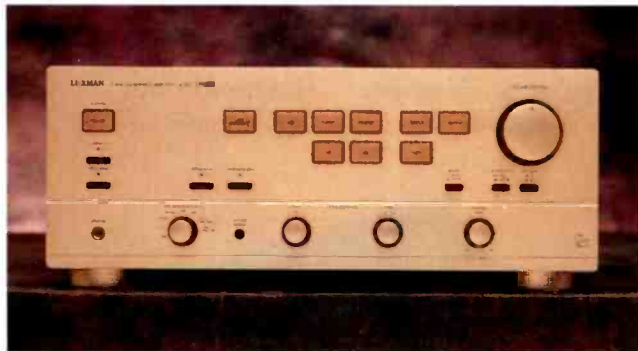
• Circle 124 on reader service card

## ▼ LINNAEUM

Linnaeum's Extreme speaker has a 7-inch woofer and a patented tweeter—with two Mylar diaphragms and an etched-circuit voice coil suspended between two magnets—that is said to provide extended response without distortion. Bandwidth is

given as 60 Hz to 30 kHz and sensitivity as 90 dB. The 14-inch-tall ported cabinet is finished in black-ash vinyl. Price: \$300 a pair. Linnaeum, Dept. SR, 1238 NW Glisan, Suite 404, Portland, OR 97209.

• Circle 125 on reader service card



## ▲ LUXMAN

Luxman's A-383 integrated amplifier is rated to deliver 100 watts per channel into 8 ohms and provides switching for five audio and three video sources. It has a video buffer amplifier and terminals for an optional infrared

sensor, which can be installed in a secondary listening room. Remote control included. Price: \$1,500. Luxman, Dept. SR, 915 Washington Ave. S., Minneapolis, MN 55415-1245.

• Circle 126 on reader service card

## ▼ GOLDSTAR

Goldstar's top VHS Hi-Fi VCR, the four-head GVR-D468, supports the VCR Plus recording system, which lets you automate TV-show taping by keying in codes given in many newspapers and in *TV Guide*. Features include on-screen programming, automatic

head cleaning, front-panel A/V jacks, a wireless remote control, and effects like slow motion, double-speed play, and freeze-frame. Price: \$450. Goldstar, Dept. SR, 1000 Sylvan Ave., Englewood Cliffs, NJ 07632.

• Circle 127 on reader service card



## ◀ SHERWOOD

Sherwood's XA-4200Q car amplifier is rated to deliver 30 watts continuous (50 watts peak) into four channels, or 75 watts into two channels, with 0.5 percent distortion into 4 ohms. Said to be stable into 2 ohms,

it has an active two-way crossover, a bass-boost switch, and an internal cooling fan. Price: \$280. Sherwood, Dept. SR, 14830 Alondra Blvd., La Mirada, CA 90638.

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CIRCLE NO. 41 ON READER SERVICE CARD

# NEW PRODUCTS

## PHAZE ONE ▶

Phaze One's Directional Standz can be rotated 360 degrees and are said to support speakers weighing up to 500 pounds. The platforms use 12-inch bearing races, are made of 3/4-inch plywood finished with a black high-pressure laminate, and come in 16 x 16-inch (\$70 a pair) and 8 x 8-inch (\$50 a pair) sizes. Available by mail order (add \$9.95 for shipping) from Phaze One Inc., P.O. Box 439, Jasper, IN 47547-0439.

• Circle 129 on reader service card



## ▲ JVC

JVC's TV-top RG-M10 X'Eye system plays regular CD's, CD+G karaoke discs, Sega format CD's, and, with an optional module, electronic books on CD-ROM and Sega Genesis game cartridges. Features include vocal masking

for non-karaoke CD's and on-screen menus. Price: \$500 (including *Compton's Interactive Encyclopedia*). JVC, Dept. SR, 41 Slater Dr., Elmwood Park, NJ 07407.

• Circle 130 on reader service card



## ◀ VELODYNE

The DF-661, Velodyne's first full-range speaker, teams two specially designed "low-distortion" 6-inch aluminum-cone drivers and an aluminum tweeter in a 18 7/8-inch-tall cabinet.

Frequency response is given as 60 Hz to 20 kHz ±2 dB. Price: \$2,245 a pair in rosewood, \$1,695 in black vinyl. Velodyne, Dept. SR, 1070 Commercial St., #101, San Jose, CA 95112.

• Circle 131 on reader service card



## ▲ SONY

Weighing in at 10.9 ounces, Sony's second-generation MZ-R2 portable MD recorder provides basic recording functions and features a 10-second buffer memory, digital and analog inputs and outputs, and a lithium battery said to provide 2 hours of recording time. Headphones are included. Dimensions are 4 1/4 x 1 1/4 x 3 1/2 inches. Price: \$750. Sony, Dept. SR, 1 Sony Dr., Park Ridge, NJ 07656.

## McINTOSH ▶

The MC420 four-channel amp, one of McIntosh's first-ever car stereo components, delivers 50 watts per channel into 4 ohms and employs the company's Power Guard antialiasing circuitry. The fan-cooled amp has a built-in two-way active crossover and accepts an optional parametric-EQ module. Price: \$690. McIntosh, Dept. SR, 2 Chambers St., Binghamton, NY 13903-2699.

• Circle 132 on reader service card





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CIRCLE NO. 25 ON READER SERVICE CARD

# NEW PRODUCTS



## ◀ NSM

Designed to provide a rock-solid speaker base, the 42-pound Sandbag stand from NSM is made of medium-density fiberboard and filled with sand. It is 24 inches tall, with an 8½ x 9-inch top plate, and comes with adjustable spikes and plastic putty for attaching a speaker. Price: \$295 a pair. NSM Loudspeakers, Dept. SR, P.O. Box 326, Garden City, NY 11530-0326.

• Circle 133 on reader service card



## ◀ THE LAST FACTORY

Ready to revisit those dusty old LP's? The Last Factory claims its new Power Cleaner (an "environmentally friendly" solution) can remove dust, fingerprint oils, record-pressing compounds, and other sound-degrading residues from the grooves of an LP. Price: \$30 for a ½-ounce bottle. The Last Factory, Dept. SR, 2015 Research Dr., Livermore, CA 94550.

• Circle 134 on reader service card



## ▲ TECHNICS

The RS-DC8, Technics's second-generation DCC recorder, has a MASH 1-bit D/A converter, a new dual-motor drive system said to cut fast-wind times in half, a powered cassette-loading mechanism, and a scrolling

fluorescent text display for titling contained on both prerecorded and homemade DCC's. Price: \$600. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

• Circle 135 on reader service card

## TRIAD ▶

Triad's Thunder Gold/6 dual in-wall subwoofer system includes two sealed enclosures and an outboard 250-watt power amplifier. Designed to fit into a 6-inch-thick wall, each 14¾ x 19 x 5¾-inch enclosure contains a 10-inch driver. The amp uses a feedback loop to optimize performance and has an adjustable low-pass filter and a dynamic high-pass filter to prevent clipping. Frequency response is given as 20 to 280 Hz +0, -3 dB. Price: about \$1,500. Triad, Dept. SR, 9106 NE Marx Dr., Portland, OR 97220.

• Circle 136 on reader service card



## ◀ BLAUPUNKT

Blaupunkt's V250 car amplifier, rated to deliver 50 watts per channel into 4 ohms, combats distortion and noise with two patented circuits designed by Rocktron Corp., the THD<sup>1</sup> circuit, said to prevent clipping at high volumes, and the HUSH circuit, which suppresses background noise by muting output during quiet musical passages or when

no signal is present. The HUSH circuit has an adjustable threshold and is said to be capable of reducing noise by 15 to 20 dB without the audible artifacts that plague many "noise-gate" devices. The V250 also has a two-way crossover. Price: \$320. Blaupunkt, Dept. SR, 2800 S. 25th Ave., Broadview, IL 60153.

• Circle 137 on reader service card



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Symphony No. 3  
(Nonesuch) 00110

R.E.M.: Automatic For  
The People (Warner  
Bros.) 00121

Garth Brooks: The  
Chase (Liberty) 00141

Red Hot Chili  
Peppers: What Hits? 1?  
(EMI) 00144



Bryan Adams: So Far  
So Good (A&M) 34771

Elton John: Greatest  
Hits 1976-1986  
(MCA) 00150

AC/DC: Live  
(Atlantic) 00201

Nell Young: Harvest  
Moon (Reprise) 00208

The Doors:  
L.A. Woman  
(Elektra) 00215

Frank Sinatra: The  
Best Of The Capitol  
Years (Capitol) 00242

Phil Collins: Serious  
Hits... Live! (Atlantic)  
00324

Erasure: Pop! The  
First 20 Hits  
(Reprise) 00328

Silk: Lose Control  
(Keia/Elektra) 00353

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Your Call (MCA) 00422

The Very Best Of  
Cream: Strange Brew  
(Polydor) 00468

Best Of Dire Straits:  
Money For Nothing  
(Warner Bros.) 00713

Fleetwood Mac:  
Greatest Hits  
(Warner Bros.) 00796

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(Arista) 00857

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Arie Antiche  
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Faith (Mercury) 00868

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Story (EMI) 01244

Roxy Music: Avalon  
(Warner Bros.) 01246

Duran Duran  
(Capitol) 01268

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Everybody Else Is  
Doing It, So Why  
Can't We? (Island)  
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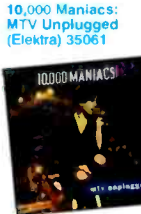
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Gipsy Kings: Love & Liberté (Elektra) 93775

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Prince: The Hits 1 (WB/Paisley Park) 02228 †

Prince: The Hits 2 (WB/Paisley Park) 72325 †

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# SIGNALS

BY KEN C. POHLMANN

## The Big Chill

**A**s I write this, the Northeast is frozen in yet another bitter winter snowstorm. Winter winds howl through gray skies, cars careen across ice-covered pavement, and arctic temperatures attack even the most carefully bundled pedestrians. After watching the snow pile up for three months, everyone is wondering whether it can possibly be true that every snowflake is different. But I'm stretched out on a lounge chair beside the swimming pool behind my Miami home. The sun is warm, the sky is blue, and I'm wondering whether I'll finish this column in time to make Happy Hour at the local cantina.

Fortunately, by the time you read this even STEREO REVIEW's Vermont subscribers should be well thawed and ready for all the redeeming qualities of summer, including, of course, the floods from all that melting snow. Unfortunately, the compact disc collections of a few audiophiles may, at this very moment, be enduring conditions so extreme they'd make even a resident of Los Angeles shudder.

You see, yet another modern audio myth has apparently popped up again. It all started about five years ago, when a certain audiophile company tried selling the idea. Like many fads, it enjoyed a brief vogue, then melted away. But now, perhaps encouraged by this winter's brutal cold, the idea has returned. It goes like this: If you give your CD's a very cold bath, in liquid nitrogen, say, their physical properties will be altered, and their sound quality will improve.

Like most interesting interpretations of audio reality, this one is loosely rooted in science. Specifically, the science of cryogenics has led researchers to uncover the miracles of superconductivity, including the ability of some metals to conduct electricity with virtually no resistance at extremely low temperatures. Perhaps it was the possibility of finding audio applications of

superconductivity that led inquiring minds to consider freezing CD's. After all, there's precedent of sorts. Some guitar-string manufacturers cryogenically treat their products; the altered properties, apparently retained at room temperature, are said to improve performance.

Of course, CD's are a good deal more complicated than G strings. Thus some "research" was undertaken to determine how quickly a disc's temperature should be lowered, how long it should remain cooled, and how quickly it can be returned to room temperature. As any high-school physics student who has watched the rubber ball, liquid nitrogen, and hammer demonstration knows, those parameters are crucial. As any member of a road department's pothole brigade will tell you, freezing is tough on materials; in fact, repeated freezing and thawing is used in accelerated-age test-

### **F**act or fantasy?

**Bathing your CD's in liquid nitrogen improves their sound quality.**

ing. The different materials in a CD do respond to temperature changes differently, but experiments suggested that with a cycle time of several hours, CD's would not sustain any obvious damage.

That question answered, the next task was explaining exactly what was going on at  $-200^{\circ}\text{C}$ . Their imaginative theory, the researchers say, is far too technical to explain to most people. Very generally, they say, the cold alters the crystalline structure of a CD in a way that permanently reduces its molded-in stress. When a CD is manufactured, its plastic substrate material must be melted, injected, then cooled, so the data surface is not ideal. The cryogenic treatment is said to correct the surface by smoothing it out, thus

allowing the laser to retrieve numerical information with less jitter.

In addition, subjecting CD's to the Big Chill is said to reduce disc resonance in much the same way that CD rings and mats supposedly do, but instead of improving just a few sound-quality factors, it improves them *all*. Finally, deep-freeze proponents claim that the treatment effects changes in disc structure that help distribute the heat generated by the reading laser beam, thereby reducing "heat-generated distortion."

Their bottom line? Proponents say it is remarkable. Treated CD's sound smoother, with clearer detail and improved imaging. Harsh "CD sound" is alleviated. The improvement is said to be so apparent that it's audible even with very modest playback equipment.

My bottom line? Anyone who believes this theory needs a little treatment of his own. The CD is a reflective diffraction surface. Data is recovered from it by passing a laser across topographical formations. Specifically, pits modulate the intensity of the reflected beam, conveying data from the disc. The modulation occurs because diffraction from the pits causes cancellations in the reflected light. Error-correction algorithms in the circuitry that "reads" the reflected light are designed to correct errors at a rate of up to 220 per second. Most CD's have error rates of 10 to 20 per second. The idea of changing the molecular properties of the disc is very nice, but it will not affect the quality of data output. On the other hand, plunging your CD collection into temperatures colder than a night on Saturn might cause cracks, clouding, or separation between the layers. Freezing CD's for better sound quality makes as much sense as freezing newspapers to get funnier comics.

If anyone can *prove* that freezing CD's provokes an audible improvement in music playback, I promise to pay all expenses to have my swimming pool filled with liquid nitrogen. Then I will strip down to my Speedos, jump in, and swim 44,100 laps. One thing—be sure and bring lots of nitrogen. It's a big pool. □



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systems factory-direct, with no expensive middlemen, you can save hundreds of dollars. We believe the products on these pages represent the country's best values in high performance home theater components. Audio critics, and thousands of satisfied customers, agree. *Stereo Review* said "Cambridge SoundWorks manufactures loudspeakers that provide exceptional sound quality at affordable prices." *Audio* suggested that we "may have the best value in the world."



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BY HENRY KLOSS

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CIRCLE NO. 6 ON READER SERVICE CARD



**AUDIO Q & A**  
BY IAN G. MASTERS

## Is It Real, or . . . ?

**Q** It's often said that the goal of music reproduction is to render sound indistinguishable from that of a live performance. But once you move to the realm of amplified or electronic instruments, every piece of equipment has an effect on the sound. I have heard live performances that didn't come close to the quality of a CD studio recording played on my home system. Has the sonic Holy Grail become the sound of previous studio recordings? In the day of electronics, can there even be a true standard?

JERRY PARKER  
Tampa, FL

**A** It's one of those philosophical questions that may never be answered. Nobody would argue with the idea that the aim of high fidelity is realism, but "live sound" is a loaded phrase. I may think I know what a violin sounds like, but I am unlikely to know exactly what every violin on every recording I own sounds like—and they're all different. To have a proper "live" reference, I would not only have to be aware of the precise characteristics of whatever hall the instrument was playing in, but I would also require a much better sound memory than most of us have. In reality, about the best any listener can hope for is that a particular recording played on a particular system achieve a plausible sound.

With most nonclassical music, there is no live reference at all. What with signal processing, multitracking, synthesizing, and the like, there is no acoustic original to compare a recording to. As you note, many live performances of pop music seek to duplicate the sound of the artist's records, rather than the other way around. Usually they don't come close—if even a modest hi-fi system sounded as bad as most live performances, it would be unacceptable.

Even if live music were a reliable reference, relatively few audiophiles have much experience of it. Consequently, to compare audio components, listeners must evaluate their characteristics with reference to each other rather than to a theoretical ideal.

## Center-Channel Power

**Q** I understand that in a Dolby Pro Logic setup the center channel is used almost exclusively for dialogue. Since most amplifiers, regardless of their rated power, normally produce only a few watts output most of the time, with the rest of their power reserved for brief peaks, why is it now often recommended that the center-channel amplifier have a power rating equal to that of the main front channels? Are we antici-

pating an increase in films in which the characters spend most of their time yelling at each other?

DANIEL L. WILLIAMS  
Portland, OR

**A** The center channel does carry most of the dialogue, but there's lots of other material conveyed by that speaker as well. Disconnect the left and right front speakers in a Pro Logic system, and you'll be amazed at how much comes out of the center. In effect, Pro Logic creates three-channel stereo sound (ignoring the surround channel for a moment), and, as in any stereo system, those channels should match. That means the speakers should have the same tonal qualities and the amplifiers should have equal capacity to handle peaks. Otherwise, as sounds move—through the center—from one side to the other, they will change in character.

## Parametric vs. Graphic EQ

**Q** For many years I have used and enjoyed an equalizer. I understand that mine is called a "parametric" equalizer as distinct from a "graphic" model. What are the differences and similarities between the two types?

LOUIS BURKHARDT  
Middleton, NY

**A** Both permit detailed manipulation of a system's frequency response and are thus elaborate tone controls. The more common variety divides the audio frequency range into a fixed number of bands—from five to thirty—with fixed center frequencies and a sliding control for each. The positions of the controls gives a visual (graphic) representation of the changes the equalizer is creating in the response curve. A parametric equalizer has fewer bands, typically two or three, but it offers more control over each band, including selecting the center frequency and the range of frequencies each one affects. Both types of equalizer can be useful.

## A Ham Next Door

**Q** I have an amateur radio operator living next door, and my audio and video systems pick up his signals when he broadcasts. I'm not sure where the interference is entering my system. What can I do to block them or filter them out?

GREG THOMPSON  
Denver, CO

**A** Radio-frequency interference (RFI) is notoriously difficult to deal with, and there are usually no easy fixes, but at least you have the advantage of knowing



where it's coming from. It's really the duty of your neighbor not to generate RFI, but since he is, the two of you will probably have to work together to eliminate it. Cooperation is the key, but if your ham neighbor is unwilling, a call from the nearest FCC office should persuade him. The FCC can also provide some useful technical tips on dealing with the problem.

### Pre-Echo (Echo)

**Q** *When I listen closely to my tapes, a moment before the opening notes of a song I can sometimes hear them very faintly in the background. I have even heard this on a few CD's. Should I be considering repairing my equipment?*

BRIAN LOWY  
Portland, OR

**A** Nope, it's just good ol' print-through. The magnetic patterns on a tape have a tendency to transfer themselves to adjacent layers. Normally the effect is masked by what is recorded there, but at silent points like the beginning of a tape or between songs, you can sometimes hear it. If you hear this effect on a CD, the flaw is in the analog master tape rather than the disc.

### Hum Dinger

**Q** *When my turntable is connected to the phono inputs of my receiver, I get a loud hum, and if I tap anywhere near the base I can hear it from my speakers. Connecting the turntable to a high-level or tape input corrects those problems, but then I have to crank up the bass and drastically reduce the treble to get something close to a proper balance. Changing cartridges does not help. How do I fix this?*

BRIAN HANSEN  
St. Charles, MO

**A** Tracking down hum involves pretty much the same steps regardless of which particular input is involved, although there are a number of connections to check in a phono system. First, check the ground wire from your turntable. If it's not securely attached to your receiver's ground lug (normally near the phono inputs), connect it; if it is connected, try detaching it. If the hum persists, then a ground connection has come apart somewhere between the cartridge and your receiver's phono preamp. To find the problem, you'll have to trace the connections one by one. Because it happens with other cartridges, it's safe to rule out the cartridges themselves and the wiring in their headshells. If your tonearm's headshell is removable, the discontinuity might arise at the point where the four tiny contacts meet: a speck of dirt or corrosion is all that's needed to break the circuit. Lightly rubbing the ends of the contacts in the shell and the tonearm with a pencil eraser should clean them. "Erasing" the cartridge-connector pins of the turntable's RCA plugs is also a good idea.

The tiny wires that conduct the signal down the tonearm usually lead to a terminal strip somewhere in the base, where they join a heavier shielded cable for the trip to

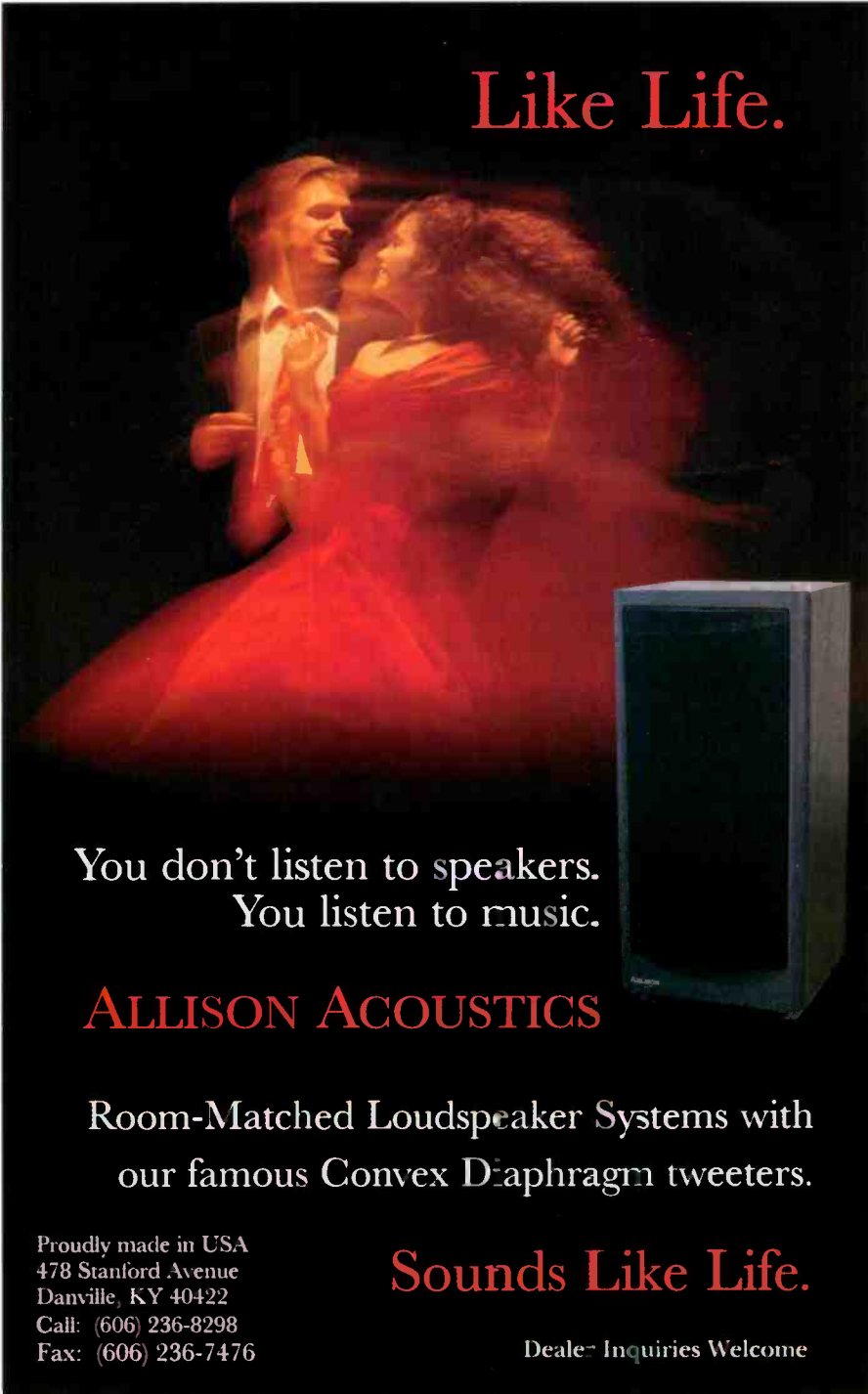
the receiver. That is a likely location for the break, but since getting at it requires opening the turntable, I would leave it till last.

The RCA plugs that connect to the receiver's inputs may be at fault, and you can often confirm this simply by flexing the wires carefully to see if there's a position where the hum disappears. (Turn the volume way down to avoid damaging your speakers.) If the problem is there, either the connectors or the cables can be replaced. Because the problem doesn't occur when you use the line inputs, the fault may lie in the receiver's phono-input jacks them-

selves. If so, consult a qualified technician.

The noise you hear from the speakers when you tap near the turntable is probably mechanical vibration transmitted through the base to the phono cartridge's stylus. Resilient mounting feet or a slab of foam under the turntable might help.

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



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## VIDEO CD

BY GEORGES MANNES



*Top Gun* on CD. The player is a Philips CDI-220 with a Digital Video cartridge.

Most people expect no more from CD's than to play back great-sounding music. But because CD's store music like a computer—as a collection of binary digits, or bits—they're not limited to sound. CD-ROM (read-only memory) discs store programs and data for computers. CD-I (interactive) discs store programs for TV-top CD-I players. Photo CD's store still photographs. As the saying goes, bits are bits, and they can store anything.

The CD spinoff that's getting a lot of attention these days is known generically as Video CD—an ordinary-looking disc that contains up to 74 minutes of digitally encoded audio and "VHS-quality" video. You just put the disc into a special player hooked up to your TV and watch a movie, or perhaps navigate your way through an interactive video program. The big question is, how does this new technology fit in? Is Video CD the next videocassette, or just another new format in search of a market?

That depends on what you expect from it. In late 1992, JVC introduced CD-based digital video in Japan in the form of its Digital Vision karaoke (singing-along) system. Sold to bars and

other commercial establishments, the system is similar to the laserdisc-based karaoke systems marketed by Pioneer and others, but the mood-setting video images (which include superimposed lyrics) are stored in compressed digital form on a CD (see "Digital Squeeze") instead of in analog form on a 12-inch laserdisc. Both formats offer features like random access and deliver CD-quality sound. In terms of picture quality, however, the laserdisc format is a few cuts above Digital Vision.

In the U.S., where karaoke doesn't have quite the grip on the national psyche that it does in Japan, the expected applications for CD-based video are very different. Moreover, it appears that two overlapping formats will be vying for your attention this year, one from Philips and another backed by a consortium of big-name electronics companies including Philips itself.

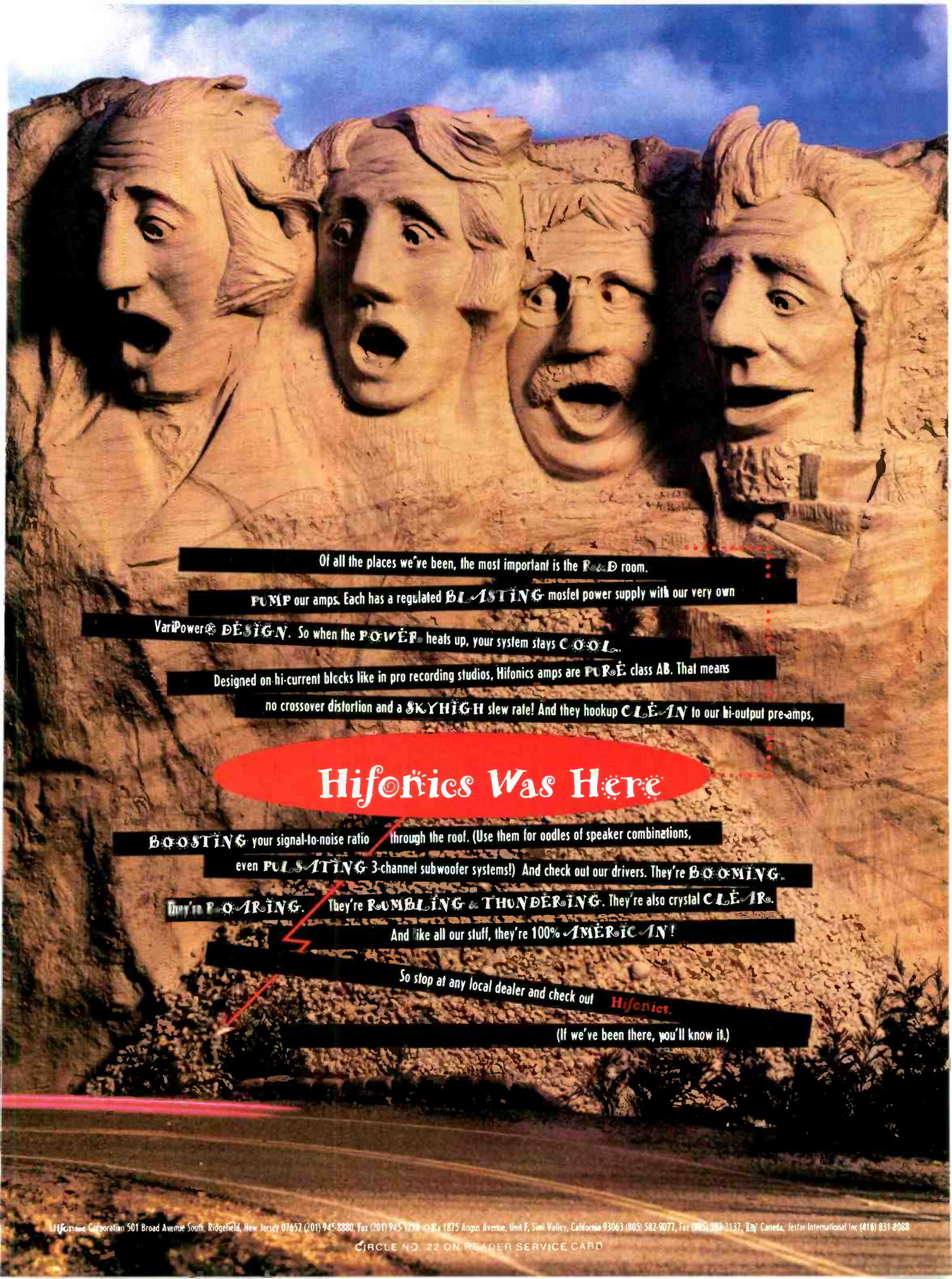
Late last year, Philips began selling a plug-in Digital Video cartridge for \$250 that enables its CD-I machines (\$399 and up) to play a new generation of CD-I Digital Video (DV) discs. Instead of fairly crude video in a small window, DV discs bring full-screen video of much higher quality to the interactive party.

As of early March, Philips had released eighteen CD-I DV titles, ranging from movies, such as *Patriot Games* and *Naked Gun 2½* (\$24.98 each), to interactive titles like *Caesar's World of Boxing* (\$49.98), which lets the viewer control a prizefighter from a ringside perspective or partake in the match from a boxer's point of view. Philips has signed deals with two big Hollywood studios, Paramount and MGM/UA, to make their movies available on CD, and it says more original interactive CD-I DV titles are being developed. One of the most in-

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triguing works-in-progress is *Kathy Smith's Personal Trainer*, in which an exercise routine is tailored to the user's individual physical condition, goals, and preferences.

**M**eanwhile, another CD-based video format—dubbed “Video CD” but known formally as Compact Disc Digital Video—is percolating in the wings. Based on the “White Book” technical standard endorsed last year by JVC, Philips, Sony, and Matsushita (the parent company of Panasonic and Technics), Video CD is essentially CD-I DV without the interactive capability—in other words, a straight playback format for movies and other forms of “passive” programming. It's essentially the same technology as the JVC Digital karaoke system.

Several manufacturers are working on Video CD players. Panasonic plans to offer a plug-in video adaptor for its FZ-1 REAL 3DO Interactive Multiplayer, which uses the games-oriented interactive CD-based system, rivaling CD-I, developed by and licensed from the 3DO Company. And at the Winter Consumer Electronics Show (WCES) in January, Technics, Goldstar, Samsung, and Fisher showed prototype Video CD players. As we were going to press, Technics announced plans to market a mini-component system this fall that will include a Video CD player, and MCA Music Entertainment said it will support the format.

But most of these companies appear to be playing the classic chicken-and-egg game, delaying the release of their players until software suppliers agree to make a variety of Video CD programs available. “We won't jump into the market and bring our player out until there is a decent selection of software,” says Phil Petescia, Goldstar's marketing director, “and we haven't seen any movement yet.”

“The software support should [follow] when you look at the hardware companies that have come to agreement in Video CD,” observes Andrew Nelkin, assistant general manager of Technics's audio division. “You have Matsushita, Sony, JVC, and Philips—all of which have vested interests in movie companies. So it's a matter of bringing everything together and letting one half of the company know what the other half is doing.”

Because Video CD is a subset of the CD-I standard, Video CD's will be

## DIGITAL SQUEEZE

Until fairly recently, because moving images take up a lot more disc space than stereo audio, it wasn't feasible to store very much video on a CD. Then the engineers came up with something called data reduction, which enabled them to squeeze 74 minutes of digitized audio and video onto a 4 $\frac{3}{4}$ -inch CD.

Both the CD-I Digital Video and Video CD formats adhere to the MPEG-1 data-reduction standard developed by the Moving Picture Experts Group, an international standards-setting organization. In a nutshell, MPEG-1 reduces the data stream necessary to capture moving video from about 165 megabits (165 million bits) per second to less than 1.2 megabits per second.

playable on CD-I machines. But because the Video CD format doesn't include certain CD-I software, the CD-I DV movies mentioned earlier will *not* be playable on Video CD players. Both types of players, of course, can play standard audio CD's.

Complicating the matter, however, several manufacturers have designed Video CD-type playback devices that are able to play CD-I DV movies despite Philips's statement that they are designed to play only on CD-I machines. For example, the CD-I DV movies can be played on Commodore's new Amiga CD<sup>32</sup> multiplayer (when it's loaded with a video cartridge) and computers equipped with a CD-ROM drive and an MPEG-1 video decoder from Sigma Designs of Fremont, California.

Bringing yet another wrinkle to the Video CD scene, Wales-based Nimbus Technology and Engineering demonstrated last year that it is possible to play Video CD's on a conventional CD player that has a digital output if an outboard video decoder is connected to it. The problem is, many CD players are programmed to shut down when a “data flag code” is detected in order to protect speakers from damage, meaning that either the players or the Video CD's themselves would have to be modified to insure widespread compatibility. It appears that that is not likely to happen.

## Will It Fly?

It's too early to tell whether video on CD will take off. Movie studios, which make money by reselling the same movie in many different markets—theaters, cable TV, videocassette, etc.—have at least shown that they are willing to explore new formats, as evidenced by the support Paramount and MGM/UA are lending to CD-I DV. And there's no denying the appeal and untapped potential of interactive video à la CD-I. But when it comes to straight video playback, the advantages of CD-based video are less clear. On one hand, two discs are required to hold a typical feature-length movie. On the other hand, random access is a lot more convenient than fast-winding through a tape. And Video CD's might appeal to collectors who want something that's more portable and easier to store than a laserdisc but more permanent than tape.

In terms of picture quality, though, Video CD is a hard sell. Given current technology, the best you can hope for is VHS quality—and even that may be a stretch. The CD-I DV version of *The Hunt for Red October* that I saw at a WCES screening was noticeably inferior to the VHS tape version. For example, transitions between light and dark background areas were very unnatural, looking like one of those TV weather maps that show discrete bands of precipitation.

“The goal for the video quality in Video CD is to be VHS quality, not laserdisc quality,” says Technics's Nelkin. “From what I've seen, the things that were encoded thirty days ago [in early December] are much worse than the things that were encoded today. And things that were encoded sixty days ago are almost unacceptable . . . . It's real hard to comment about what the final quality will be, because we haven't quite gotten there yet.”

In the meantime, Philips is working on higher-density discs that will offer the possibility of longer running times and improved picture quality. But company officials say it's still too early in the development cycle to talk specifics. One thing's for sure: a 120-minute Video CD with *better-than-VHS* picture quality would be a heck of a lot easier to sell. □

**George Mannes** is a free-lance writer whose work has also appeared in *Video magazine*, *Popular Mechanics*, and *Entertainment Weekly*.



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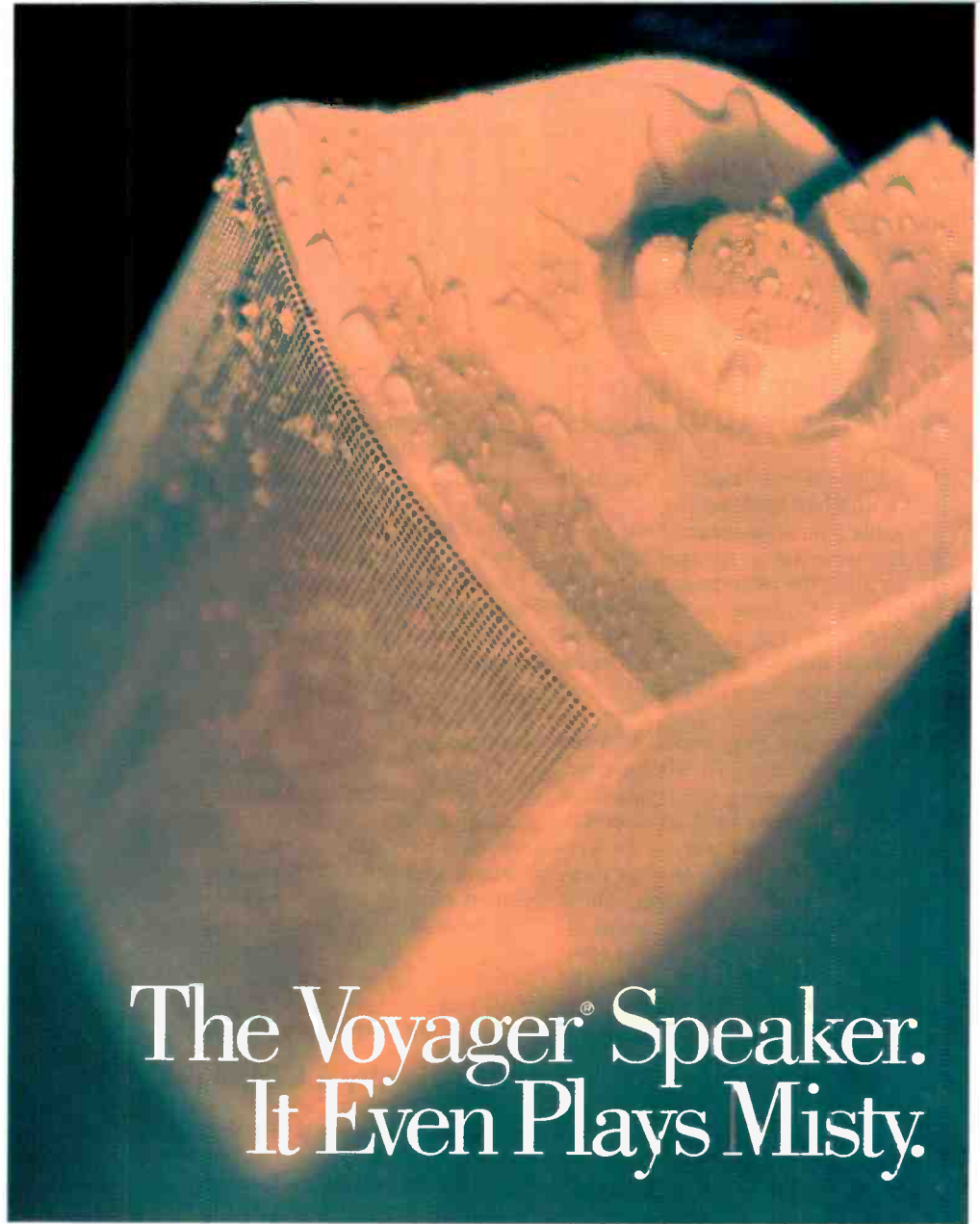


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hardware and screws. Its cone and tweeter dome are made of moisture-, heat- and cold-resistant copolymer. Even the speaker terminals are plated with 14K gold—a material that resists corrosion, and looks pretty darn snappy, too. Finally, to ensure that moisture on the outside of the Voyager stays there, we use specially designed gaskets to create a watertight seal. As a result, the Voyager



**The Voyager is not only a rugged individualist. It's also part of a family, including Runabout I and Runabout II speakers.**

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# TECH TALK

BY JULIAN HIRSCH

## Speaker Testing II

Last month I outlined my approach to loudspeaker testing and described how we measure the room response of a speaker. As described, the measurement is valid only at frequencies above a few hundred hertz, not at lower frequencies, where room standing waves cause huge variations in the readings.

To determine true bass response, we measure the low frequencies with the microphone close to the woofer cone, effectively removing the room from the measurement to yield an essentially anechoic response plot. If the system is vented, we make another measurement at the port opening. These readings, corrected for the relative diameters of the cone and port, are combined with the room response. The resulting plot is what I call the speaker's "composite corrected frequency response."

Except for room response, we make most speaker measurements with the Audio Precision System One (AP One), a versatile digital test instrument that is astoundingly fast and precise. Even so, plotting a full family of directional response curves would be impractical, but we do measure the system's response on the axis of the tweeter and at 45 degrees off-axis (horizontally). The test signal consists of one-third-octave pink noise, sweeping through the full audio range, and the two response curves are plotted on the same axes. For most conventional forward-facing speakers there is little difference between the two curves up to perhaps 6 or 8 kHz, but the off-axis output typically falls off by perhaps 4 or 5 dB at 10 kHz and 10 to 15 dB at 20 kHz.

We plot each speaker's impedance as a function of frequency to establish its resonance points and its minimum impedance over the audio range, which can affect its interaction with the driving amplifier. Sensitivity is measured by driving the speaker with 2.83 volts of pink noise (corresponding to a 1-

watt input to an 8-ohm resistive load), regardless of its actual or rated impedance. A sound-level meter, 1 meter in front of the tweeter, measures the sound-pressure level (SPL).

We measure woofer distortion at an input level corresponding to a 90-dB SPL acoustic output, which enables a convenient direct comparison between different speakers. We place the microphone close to the woofer and plot the distortion over the frequency range from 20 Hz to 2 kHz.

The AP One also has the ability to measure a speaker's frequency response with greatly reduced room-boundary influence. The MLS (maximum-length sequence) measurement is based on a digital processing technique that drives the speaker with a short burst (a second or two) of pseudorandom noise, which sounds much

**Our measurements are really a back-up to the extended listening we do, mostly before making any lab tests.**

like true random noise but is actually a repetitive signal. The speaker's reproduction of this signal as picked up by our test microphone is returned to the AP One, where it is compared with the driving signal and digitally processed to generate a response curve that is essentially unaffected by room reflections at frequencies above a few hundred hertz. We make several such measurements at different microphone distances and angles (usually from 1 to 2 meters from the speaker).

When we compare the MLS response with the room response, there are usually numerous similarities (and some differences). To the extent that the two curves are similar, the comparison tends to confirm the validity of our room-response measurement.

Significant differences (fortunately rare) simply confirm what I pointed out last month—that one cannot characterize a loudspeaker as having a single unambiguous frequency response.

We also measure group delay (related to a speaker's phase linearity), which in practice is relatively unimportant—at least, we have never encountered a speaker that had any serious problems in this regard. But the test is easily done, and we never know what the next one will show.

Our final test attempts to establish the maximum short-term peak power input a speaker can withstand without damage or severe audible distortion. The Carver Mono-Block amplifier that we use for this purpose has a prodigious short-term current-delivery capability: With the single-cycle tone-burst signal we use it will deliver about 2,000 watts into a 2-ohm load at the clipping point. We increase the level of the burst until the amplifier's output clips or the speaker distorts audibly, whichever occurs first. This test is most significant for the woofer, for which we use a 100-Hz signal. Most woofers can be driven to their mechanical limits, producing an unmistakable rasping noise, and at that point we measure the peak-to-peak voltage of the burst on an oscilloscope and compute its equivalent power based on the measured (not rated) impedance at 100 Hz. The test is helpful, for instance, in judging the suitability of a small speaker for use with a powerful amplifier.

All of this measurement is really a back-up to extended listening tests, conducted mostly *before* we make any lab tests. We listen first primarily so that our auditioning will not be biased by the measurements, but the practice also has the benefit sometimes of giving us clues about where to probe for the causes of anything peculiar or unexpected we might have heard. There is also a listening period after the measurements, partly to try to hear the effects of any special qualities turned up in the measurements. But it is always easier to hear something that you already know is present! □



# Understanding why the new 575x is a superior surround speaker takes some reflection.



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full advantage of reflected sound to create a realistic movie experience. Here's how. In front of the 575x is a single woofer re-creating low frequencies that the human



The 575x has no hang-ups about where it's hung, sounding equally good on either ceiling or wall.

ear can't localize. On either side is a specially designed combination tweeter/midrange—one firing forward, the other back. These drivers are dipolar, or "out of phase" with each other (when one is pushing air out, the other is pulling air in). As a result, sound from the 575x reflects off several things—walls, ceiling, floor, your prized swizzle

stick collection—before it reaches your ears. When it gets there, it sounds like it's coming from all around you. Eureka. With conven-



Not since the Von Trapps has a family sounded this good. The Boston THX home theater family, featuring 555x left/center/right speakers, 595x subwoofers and 575x surrounds.

tional speakers pointed toward the listener, sound is easily localized, and this effect is lost. A few other points on the 575x: One, it handles 125 watts of power cleanly, with nearly zero distortion. Two, it comes with a handy wall mounting bracket. And, three, it's available in two popular designer colors: black and



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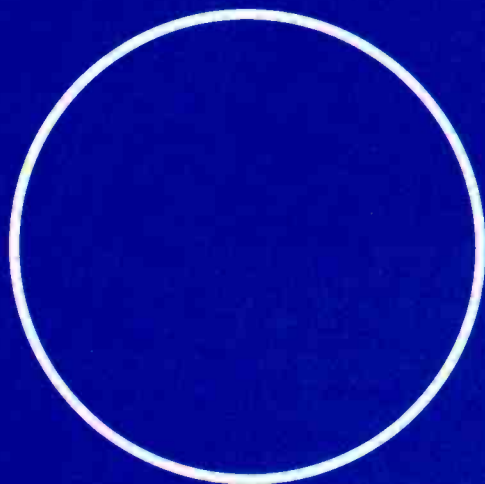
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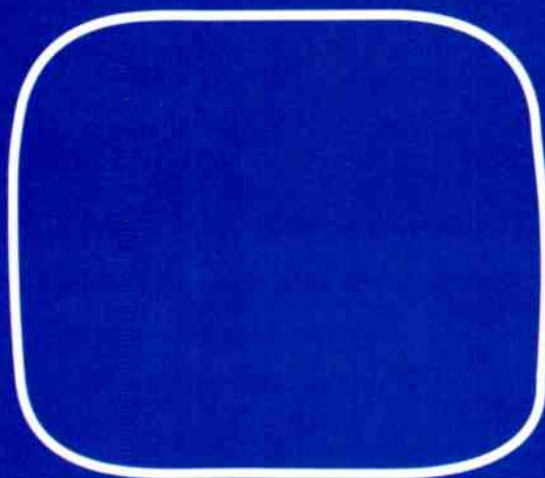
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# TEST REPORTS



## Pioneer VSX-D2S Audio/Video Receiver

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

In recent years we have seen a growing tendency toward blending audio, video, and computer technology in consumer electronics. The most extreme illustration of this trend to come to our attention so far is the VSX-D2S audio/video receiver from Pioneer. To me, the VSX-D2S is a *computer* that has some interesting audio capabilities, not merely a deluxe receiver that happens to have some unconventional operating and control features.

At first glance, it may not even be obvious that the VSX-D2S is a receiver, since the usual display window is located unconventionally at the *bottom* of the panel, behind a tinted flip-down door that also covers a number of infrequently used control buttons. The exposed portion of the panel contains only a single large volume knob, buttons to select the program source, and four larger System Selector buttons. On closer examination it is apparent that the visible controls, *including* those behind the hinged door, are not sufficient to operate the receiver. Time for the manuals.

Although it is always a good idea to

study the instructions for a complex piece of equipment, in this case it is imperative. The VSX-D2S actually comes with *two* manuals. The main one has sixty-five fully packed pages, and almost every one of them should be mastered if you expect to use more than the receiver's most basic features. The second manual, "Your Invitation to a New Sound Field Experience," has only sixteen pages, but it attempts to lead you through some of the intricacies of the unit's operation, especially its extensive ambience-enhancement capabilities.

The VSX-D2S has five amplifier channels, three of them, for the front speakers in a home theater installation, rated at 70 watts into 8 ohms, and two,

for the surround speakers, rated at 45 watts each. When the receiver is used for ordinary (two-channel) stereo programs, its main left and right channels are rated at 125 watts each into 8 ohms. Amplifier connections for the three front speakers are binding posts that accept single or dual banana plugs but not flat lugs. There are two sets of connections for the center channel, allowing the use of two "center" speakers at the sides of a small screen. The surround-channel speaker connectors are of the snap-grip variety.

There are three AC convenience outlets, two switched, as well as an FM F-connector jack and binding posts for both AM and FM antennas. Access to all the processed line-level signals and power-amp inputs is provided by a set of preamp-out/main-amp-in connectors. There are also inputs for a CD player, two tape decks, an auxiliary video source (via front-panel connections), a satellite-TV source, two VCR's, and a laserdisc player. All video inputs and outputs are in both composite and S-video formats.

The VSX-D2S incorporates a powerful digital signal processor, which not only decodes Dolby Surround material but can also simulate a very large number of acoustic environments by generating delayed "reflection" signals fed to all the speakers in a surround setup. Three groups of preset ambi-

### DIMENSIONS

16½ INCHES WIDE, 6¾ INCHES HIGH,  
18 INCHES DEEP

### PRICE

\$2,000

### MANUFACTURER

PIONEER ELECTRONICS USA, INC., DEPT. SR.  
P.O. Box 1720, LONG BEACH, CA 90801

# TEST REPORTS

ence-processing modes—called “systems” by Pioneer—are supplied (Movie, Concert, and Sports) as well as a more widely adjustable Advanced Soundfield Controller (SFC). The Advanced SFC can individually adjust to one’s taste (and patience) the acoustic properties of nine simulated environments (Theater, Hall, Club, Lounge, Arena, Dome, Church, Stadium, and Studio) in respect to initial delay, liveness effect (number of reflections), environment size, and the listening room’s size, its acoustic “hardness,” and the physical hardness of its walls.

In addition to surround-sound decoding and ambience simulation, the VSX-D2S can digitally perform the operations of a three-band parametric equalizer or a seven-band graphic equalizer (both with different settings possible for main front and center speakers), a dynamic-range compressor/expander, bass and treble controls, and a bass-boost function. If the settings for those features all had to be adjusted by knobs or pushbuttons, the controls would never fit on a front panel of practical size, much less a remote handset. Therefore, the designers of the VSX-D2S borrowed a technique from personal-computer programs, in which a series of on-screen menus are navigated via a keyboard or a “mouse.”

Cursor controls for the receiver’s on-screen menus are incorporated into the remote, which also has controls for other Pioneer components. The remote can learn the infrared commands for other makes of components, too, and some of the most common are already in its memory and can be selectively activated. The remote can also be programmed to emit a series of commands (up to seven) by pressing its Multi Command button once.

About half of the receiver-specific remote-control buttons duplicate or supplement those of the VSX-D2S’s front panel. But the key to the successful use of the receiver is a group of buttons at the bottom of the handset that function like a computer’s cursor controls and Enter key.

These buttons control the unit’s graphical user interface, or GUI, which requires a video monitor to be hooked up and running to use it. Al-

## MEASUREMENTS

### TUNER SECTION

For FM only except frequency response.

<b>50-dB quieting sensitivity</b>	
mono/stereo	17/48 dBf
<b>Signal-to-noise ratio</b> (at 65 dBf)	
mono/stereo	79/65 dB
<b>Distortion</b> (THD+N at 65 dBf)	
mono/stereo (see text)	0.215/2.3%
<b>Capture ratio</b> (at 65 dBf)	1.9 dB
<b>AM rejection</b>	54 dB
<b>Selectivity</b>	
alternate-channel	68 dB
adjacent-channel (asymmetrical)	9.5 dB
<b>Pilot-carrier leakage</b>	
19-kHz/38-kHz (see text)	-68/-48 dB
<b>Hum</b>	-79 dB
<b>Channel separation</b>	
100 Hz/1 kHz/10 kHz	41.5/48/47.5 dB
<b>Frequency response</b>	
FM	20 Hz to 15 kHz +1.8, -0 dB
AM	140 Hz to 3.4 kHz +0.5, -6 dB

### AMPLIFIER SECTION

For main front channels only, except as noted.

<b>Output at clipping</b> (1 kHz)	
8/4 ohms	136/180 watts
<b>Clipping headroom</b> (re rated output)	
8 ohms	0.4 dB
<b>Dynamic power</b>	
8/4/2 ohms	195/300/332 watts
<b>Dynamic headroom</b> (re rated output)	
8 ohms	1.9 dB
<b>Distortion at rated power</b>	0.003%
<b>Sensitivity</b> (for a 1-watt output into 8 ohms)	
CD/phono	17/0.21 mV
<b>A-weighted noise</b> (re a 1-watt output)	
CD/phono	-81.3/-78.3 dB
<b>Phono-input overload</b>	
(1-kHz-equivalent levels)	
20 Hz/1 kHz/20 kHz	119/119/105 mV
<b>Phono-input impedance</b>	
	45 kilohms in parallel with 270 pF
<b>Tone-control range</b>	
100 Hz and 10 kHz	±7.5 dB
<b>Graphic-equalizer range</b>	+8, -10 dB
<b>RIAA phono-equalization error</b>	
20 Hz to 20 kHz	+0.4, -0.3 dB
<b>Frequency response</b> (with tone controls centered)	20 Hz to 20 kHz +0, -0.2 dB

though some receiver adjustments can be made with the front-panel display alone, that display consists of little more than tiny indicator lights. It is not possible to fully use the capabilities of the VSX-D2S without a video

monitor, at least at first. Fortunately for lovers of the simple life, a Direct button on the receiver’s front panel bypasses all its special features and converts it to a conventional, though powerful, stereo AM/FM receiver.

When the graphical interface is used, the video display shows a stylized representation of the front panel of the selected input component (tuner, CD player, record player, etc.). The remote’s cursor controls are used to “push” the on-screen “buttons” of that component, and if programmed to do so, the remote will emit the appropriate command. The same on-screen-button concept holds for the VSX-D2S’s own digital-processor functions (graphic and parametric equalizers, ambience enhancer, Dolby Pro Logic decoder, etc.).

The various digital-processor functions can be assembled into customized “systems” of internal “components,” with each system capable of offering different processing capabilities (not all internal “components” can be used at once). Four memories dedicated to such systems, designated A, B, C, and D, can be selected by front-panel pushbuttons or on the remote.

Although we tested the VSX-D2S with the aid of a video display, our measurements were limited to its operation as a stereo receiver.

The main (front left and right) amplifiers proved to be rated with great conservatism. With both channels driving 8-ohm loads, they delivered between 150 and 160 watts per channel with 0.1 percent distortion from 70 Hz to 20 kHz (and “only” 136 watts at 20 Hz). Into 4 ohms, the output was between 150 and 160 watts from 20 Hz to 20 kHz. The 1-kHz total harmonic distortion plus noise (THD+N) was in the range of 0.03 to 0.06 percent for power outputs between 10 and 130 watts (into 8 ohms). A spectrum analysis of the output at 125 watts with a 1-kHz signal, which eliminated noise from the measurement, showed even lower distortion. The THD+N measurements were somewhat higher because of several relatively large spurious signals well above the audible frequency range, apparently leakage from the receiver’s digital or video circuits.



# TEST REPORTS

The frequency response through the preamplifier and power amplifier, with the digital tone-control circuits operating, rolled off slightly above 10 kHz, to -2 dB at 20 kHz. But in Direct mode the response was flat to within less than 0.2 dB over the full range. We also noted a channel-level imbalance of about 1.3 dB (there is no channel-balance control in the VSX-D2S's Direct mode).

The FM tuner characteristics were good, although a fairly high signal level was needed for full quieting in either stereo or mono. The stereo distortion (THD+N) readings were high because of numerous spurious signals related to the multiplex decoder, all well above the audible range. The FM frequency response rose slightly at very high audio frequencies, although the 1.8-dB rise up to 15 kHz would be audible to very few listeners.



According to Pioneer, the design of the VSX-D2S involves many features whose cumulative effects result in audible superiority over more conventional receivers. Among those features are a very rigid (nonmicrophonic) chassis, shortened signal paths, separate power supplies for the analog and digital sections, and even a rubber coating on certain capacitors to minimize their sensitivity to vibration.

I spent the better part of a week experimenting with the operation of a few (by no means all) of the VSX-D2S's many features. The experience left no doubt in my mind that it is one of the most versatile receivers I have ever used. With enough time and patience, its sonic characteristics can probably be matched to the requirements of any room, taste, and music.

But you should also be prepared to spend a lot of time learning what it can do, and how to make it do it. No doubt most people will be happy to settle for something less than its ultimate performance—which will still probably surpass anything that might be achieved with a more conventional receiver. It is the most remarkable A/V receiver I have yet seen and will yield rich rewards for those who master it, but it is definitely not for the faint of heart or thin of wallet! □

## SECOND OPINION

### Pioneer VSX-D2S A/V Receiver

After a week of constant use, starting with a day of sheer confusion, I have come to like Pioneer's digital tour de force. I'm accustomed to its

tions until a speaker is changed or moved. Furthermore, the VSX-D2S's built-in random-noise test signal mutes for a second as it switches between speakers, which greatly increases the difficulty of level-matching by ear. This is crucial to effective

adjust the equalizers to match the sound of a center speaker with the left and right front speakers—surely one of the best uses the equalizers could be put to.

In other ways the receiver seems overly automated. When you switch to a new system, the volume starts moving to where it was the last time you used that system. Unless you immediately inter-



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# TEST REPORTS

which is more accurate (more like a dubbing stage in its effect) for playing movie soundtracks than any other setting this receiver offers. You must either use the Movie system and reset all of its parameters to neutral (about thirty button pushes) or "construct" a Pro Logic-only system (about nine button pushes).

Finally, having to use a video monitor (which must have a composite- or S-video input) to adjust processing parameters could prove a serious drawback for those who want to take advantage of the VSX-D2S's ambience enhancement—the most sophisticated that Pioneer offers—in a music-only system. But even the monitor is really not enough. You also have to watch the alphanumeric display on the receiver's front panel, which provides numerical values for some of the settings that appear on screen only as pictograms.

After all that, it is nice to report that the surround system's measured and audible performance was generally good. The noise level in Pro Logic mode was slightly higher than I am used to seeing, but it was relatively benign. Throwing in additional processing, such as ambience enhancement and parametric equalization, did not significantly increase the noise.

The surround-channel noise-reduction calibration error was excessive, even referred to Dolby Labs' recommended spec (which is already higher than the THX spec we have previously used). But the Pro Logic decoder's bass response did not roll off below 100 Hz as many others do. And its signal steering operated well with soundtracks as long as I didn't use it in conjunction with the ambience enhancer. Although that combination might make for an impressive showroom demonstration, it stands a good chance of messing up the intelligibility of dialogue and the clarity of sound effects. (The problem is not unique to the VSX-D2S but is inescapable when you add reflections to a signal that was balanced in and for a fairly nonreflective environment.)

The receiver's most serious potential measurable problem is that in any mode of operation except Direct, the line-level inputs will overload above 2 kHz with maximum-CD-level (2-volt) signals (the tiny front-panel overload indicator will light up if that occurs). It never happened with any of the music CD's or soundtracks I played, but it may be an audible

problem with synthesizer music on CD's or some laserdisc digital soundtracks.

After that inventory of idiosyncrasies, you may be wondering why I said I like the VSX-D2S. Because it is, for all its peculiarities, just *one* unit. To equal its signal-processing versatility, you could spend the better part of a weekend installing the equivalent separate components and a month or two learning how to operate them. Limitations of the VSX-D2S's processing power prevent you from having all of its "virtual components" available at all times. For example, the parametric and graphic equalizers cannot be switched on simultaneously. Nonetheless, all the special processing is held in the computer's memory and can be activated in seconds. The VSX-D2S's unification of many functions in a single chassis operated via a single—albeit awkward—interface

## SURROUND PERFORMANCE

All measurements are for Dolby Pro Logic operation only and were made with the Normal center-channel setting except for frequency response and channel separation, which used the Wideband setting and MLS techniques.

### Frequency response

left, right	20 Hz to 20 kHz +0, -2.7 dB
center	20 Hz to 20 kHz +0, -1.9 dB
surround	20 Hz to 6.6 kHz, +0, -3 dB

### A-weighted noise

left, right	-68.8 dB
center	-66.1 dB
surround	-65.5 dB

### Distortion (1 kHz, THD+N)

left, right	0.15%
center	0.10%
surround	0.17%

### Surround decoder input-overload levels (at 1 kHz, see text)

left, right	+21 dB
center	+24 dB
surround	+24 dB

### Surround-channel noise-reduction calibration error

re Dolby spec (247.5 mV)	+3 dB
re THX spec (141.4 mV)	+7.9 dB

### Channel separation (100 Hz to 7 kHz)

left output, right driven	>53 dB
left output, center driven	>42 dB
left output, surround driven	>39 dB
center output, left driven	>40 dB
center output, surround driven	>45 dB
surround output, left driven	>38 dB
surround output, center driven	>52 dB

saves immense amounts of aggravation during installation, and it will continue to save you grief as the rest of your A/V system changes.

The receiver's other pluses are less significant but they do bear on audio and video performance. For starters, the ambience-enhancement capabilities are considerable, and they provide adjustment ranges wide enough to suit all types of music. The ambience effects themselves are done well, with the reservation that a recording's sonic image may be altered in apparent depth and positioning. That happens with most delayed-reflection ambience-enhancement processing (not just Pioneer's) that sends the echoes for the front half of the listening area through the front speakers themselves and not through a separate set of auxiliary speakers.

Hint for pop music: If the added ambience sounds too spacious or echoey, try the Club, Lounge, or Studio "mode" and the Jazz, Country, and Rock "categories." (All these names bear no rational relationship to the types of music they suggest.) Changing "mode" alters the basic reflection pattern, whereas changing "category" modifies that pattern's overall timings and levels. Don't be afraid to experiment; there's always the general-reset button conveniently located on the front panel.

The compressor/expander is a useful feature. A high compression setting, or using the automatic digital level control, gives very good results for background-music playback or late-night listening. Unfortunately, the compressor/expander cannot be used together with the Dolby Pro Logic decoder.

Other nice features include the handy equalizers and the built-in conversion between S-video and composite-video signals. A qualified thumbs-up for the ambience-enhancement system's use of the center-channel speaker. That helps to anchor the image, but for best results the center speaker should match the other two front speakers tonally.

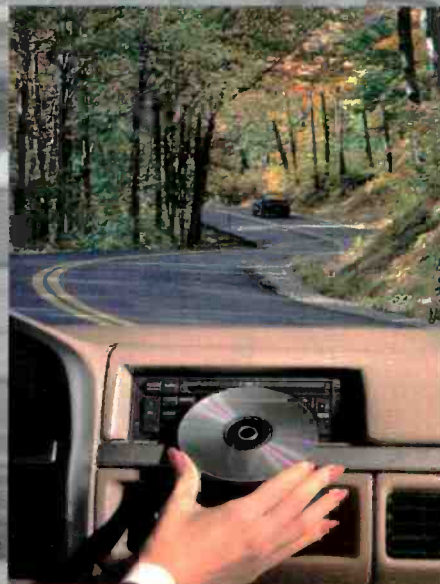
The Pioneer VSX-D2S is a fascinating component and an important first step for Pioneer as it explores the audio/video/computer *ménage à trois*. It takes some getting used to, but I'd estimate that in less than a week you'll be so adept at working around its quirks that you'll be avidly exploring its many useful processing options. And such familiarity will breed respect.

—David Ranada





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*Matthew B. Polk*

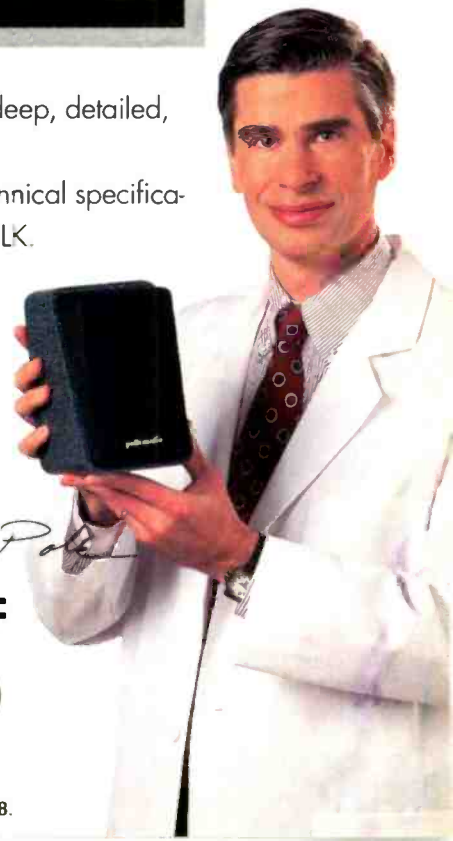
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# TEST REPORTS



## McIntosh LS330 Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

**M**cIntosh's LS330 might be called a "two-and-a-half-way" speaker system since it has two 8-inch woofers, one above the other in a sealed enclosure, crossing over to a 1-inch aluminum dome tweeter at 3.5 kHz. The upper woofer handles frequencies up to the crossover frequency, while the response of the lower one is rolled off above 350 Hz.

Both woofers feature the patented McIntosh Low Distortion/High Performance (LD/HP) magnet structure, for which the company claims a tenfold reduction in bass distortion compared to conventional woofers. The woofer cones are formed of a coated laminated-cellulose fiber to provide the correct combination of stiffness, low mass, and internal damping. The cone edge surrounds, made of a treated butyl rubber, are said to be immune to moisture and not subject to deteriora-

tion in a humid climate. A die-cast aluminum frame provides the necessary rigidity and dimensional stability.

The crossover, an in-phase (Linkwitz-Riley) design, is intended to provide a seamless transition at the crossover point. The tweeter is protected against overload by an automatically resetting solid-state device.

The L330's enclosure is made of 3/4-

inch MDF (medium-density fiberboard) veneered with either walnut or black ash. Extensive internal bracing provides structural rigidity to reduce resonance and possible sound coloration. The enclosure is finished on all surfaces, and its beveled edges help minimize diffraction. Its slightly tapering sides and the quarter-round molding on its top side edges give the speaker a distinctive and attractive appearance. Most of the front panel is covered by a removable black cloth grille.

Separate multiway binding-post connectors for the bass and treble sections, normally joined by gold-plated jumpers, are recessed into the lower portion of the rear panel. Removing the straps permits the speaker to be bi-wired or bi-amplified.

System response is given as 55 Hz to 20 kHz  $\pm 2$  dB, with a sensitivity of 88 dB sound-pressure level (SPL) at 1 meter in free space with a 2.83-volt input. The speaker has a nominal impedance of 4 ohms, and it is recommended for use with amplifiers rated between 75 and 300 watts per channel.

Following our usual procedure, we listened to the McIntosh LS330's for several days before making any measurements. Another pair of speakers set up in the listening room at that time, roughly the same size as the LS330 but considerably lower in price, had previously impressed us with its sound quality. When we compared the two, we were struck by the similarity of their overall sound character (frequency balance), but the LS330 was unmistakably smoother and "easier" sounding, especially in the bass and lower midrange.

Room-response and close-miked woofer measurements confirmed what we were hearing. Overall response was  $\pm 4$  dB from 38 Hz to 20 kHz, with a slight emphasis at 80 Hz and an impressively flat  $\pm 1.5$ -dB response through the upper woofer range, from 150 Hz to 1.5 kHz. The close-miked response of the lower woofer rolled off above 400 Hz, falling very steeply above 500 Hz; the upper woofer's response extended to several kilohertz.

The system impedance reached a minimum of 3.9 ohms at about 140 Hz and 8.5 ohms at the 55-Hz bass reso-

### DIMENSIONS

13 INCHES WIDE, 36 INCHES HIGH,  
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### PRICE

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### MANUFACTURER

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# TEST REPORTS

nance. The maximum impedance was 24 ohms at about 2.1 kHz, which appeared to be the electrical crossover between the upper woofer and the tweeter, although the acoustic crossover may have been somewhat higher. The system's group-delay measurement was as uniform as any we have measured, with a maximum overall variation of only about 400 microseconds from 2 to 20 kHz.

The system's horizontal dispersion was typical of 1-inch dome tweeters. At 45 degrees off-axis the response dropped by about 5 dB at 10 kHz and by 10 dB at 20 kHz. Quasi-anechoic MLS frequency-response measurements confirmed some of the features of the room-response measurements, showing the LS330 to have an impressively flat axial frequency response,  $\pm 2$  dB from 300 Hz to 20 kHz and  $\pm 1$  dB from 2.5 to 20 kHz.

At 92 dB, the measured sensitivity was considerably higher than the LS330's 88-dB rating. The manufacturer's rating was based on a free-field (anechoic) measurement, but our measurement was made in a normally live room, which probably accounts for much of the difference.

In view of McIntosh's claim of very low woofer distortion, we were especially interested in the results of our low-frequency distortion measurements. With a 2.26-volt drive level (corresponding to a 90-dB SPL in our tests), the LS330's bass distortion was indeed unusually low, less than 1 percent (typically about 0.7 percent) at fre-

quencies above 45 Hz and only 3 percent at 30 Hz and 4.5 percent at 20 Hz.

Listening-test results were entirely consistent with McIntosh's claims and our measurements. At all frequencies and listening levels, the LS330 had an ease and smoothness that were clearly audible in side-by-side comparisons with other speakers.

Curious about the difference between the manufacturer's low-frequency response rating of 55 Hz and our measurements, we listened to some organ recordings containing very low frequencies (between 20 and 40 Hz). Normally, we use subwoofers to appreciate the full content of those recordings, but to our amazement the LS330 reproduced them very capably on its own. Only with the lowest organ notes (under 30 Hz) did the subwoofers contribute audibly to the overall listening quality, and even then to a modest degree.

That is impressive bass performance for a speaker rated down to "only" 55 Hz, and it was complemented very nicely by a superb soundstage. The LS330 produced what may have been the most accurate lateral and even vertical positioning we have yet experienced with the Chesky JD37 test disc.

While the McIntosh LS330 is not inexpensive, its sound is fully commensurate with its price. Compared with some other very good, but more moderately priced, speakers, it differs primarily in its exceptional sonic ease and smoothness—and, on another level, in its beautiful cabinet finish. □



*"I'm telling you, Phil, it's absolute hell living with a woman who can hear above 28 kHz."*



# TEST REPORTS



## JVC XL-MC100 CD Changer

**JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES**

Since their introduction about seven years ago, CD changers have achieved popularity thanks to their enhanced convenience with little or no increase in cost and no sacrifice in performance compared with single-disc players.

The first CD changers used interchangeable magazines holding five or six discs (ten or more in typical automotive versions). For some users, however, especially those with large disc collections, the advantages of these changers were offset by the cost of multiple magazines or the bother of frequently changing the discs in a single magazine. When carousel (rotary-tray) changers appeared, their lower cost and ease of use soon led them to dominate the market.

Recently we have seen the appearance of several CD changers with greatly increased disc-storage capacity. The first of these were relatively expensive "CD juke boxes" derived

from commercial designs and holding 100 discs in a more or less permanently loaded magazine. At last January's Winter Consumer Electronics Show in Las Vegas, I even saw a 240-disc computer-controlled changer that cost as much as a luxury automobile. Fortunately, more practical and affordable consumer-oriented mega-changers are now available.

The JVC XL-MC100 is one of

### DIMENSIONS

CONTROL UNIT: 17 $\frac{1}{2}$  INCHES WIDE,  
4 $\frac{1}{2}$  INCHES HIGH, 11 $\frac{1}{2}$  INCHES DEEP  
PLAYER: 14 $\frac{1}{4}$  INCHES WIDE AND HIGH,  
13 $\frac{3}{4}$  INCHES DEEP

### PRICE

\$1,000

### MANUFACTURER

JVC OF AMERICA, DEPT. SR, 41 SLATEF DR.,  
ELMWOOD PARK, NJ 07407

these. Clearly directed toward the needs of an audiophile, it has jacks for interfacing with compatible JVC components for unified control of many system operations. It consists of a control unit and a player unit, which are connected by two 6-foot cables. The control unit resembles a typical CD player without a disc drawer and has the same attractive gray satin finish as other JVC audio products. The player is a roughly cubical black box, just under 15 inches on a side (it actually resembles a small subwoofer). The front hinges open at the touch of a button (but not while the player is operating) to reveal 100 slots, each containing a thin removable plastic tray that can hold one CD.

All the operating controls of the XL-MC100 are on the control unit and its wireless remote. The front-panel display window is much like that of a conventional CD player, showing disc and track numbers and elapsed time on the disc. Two buttons, used in conjunction with a ten-key numerical array, select the desired disc and track. Other buttons operate the play/pause and stop/clear functions. A group of buttons at the right of the panel oper-

# TEST REPORTS

ate the disc-skip and fast-search functions and a number of programming functions. Below them are a head-phone jack and its volume knob.

The changer has extensive programming functions, most conveniently operated with the wireless remote control. The handset is relatively large, with few visible buttons (mostly associated with conventional operation). But its center section hinges up to reveal some twenty-eight programming buttons. A small LCD panel on the remote control aids in these operations.

The XL-MC100 can be programmed to play a single disc or track or to repeat a track, a disc, or all 100 discs indefinitely. It can play a program of all the desired tracks in all the discs in any order or all the tracks of any selected disc in random order. Up to ten

100 disc slots in the player can be assigned an alphanumeric disc title up to eight characters in length. After a title is in memory, keying it in will identify its slot location on the control unit's display. Conversely, keying in the slot number will display the title of the disc in that slot.

We tested the JVC XL-MC100 as we would any other CD player. Many of its characteristics were outstanding, even by single-disc player standards. For example, the frequency response was ruler-flat, within  $\pm 0.01$  dB from 15 Hz to 6 kHz on one channel and to 12 kHz on the other. The variation from 12 Hz to 20 kHz on either channel was only  $\pm 0.05$  dB.

JVC's 1-bit digital-to-analog (D/A) converters, which we have previously found to be outstanding, produced a near-perfect linearity of the audio output over the full range from 0 to -90 dB, with an amplitude error of less than 0.6 dB over that range. The measured distortion levels and channel separations were all excellent.

The only significant performance "penalty" one must pay for this changer's exceptional versatility and overall audio quality is the disc-change time. There is considerable mechanical action (and sound) during the change cycle, which required 13 seconds when the player was changing between adjacent slots and around 17 seconds between Slot 1 and Slot 100. Long change time is probably unavoidable in a large changer like this one, and it is a small price to pay for the changer's benefits.

It must be said that programming some of the changer's features, such as its disc-title memory bank, can be tedious. But none of that is really necessary for enjoying convenient, smooth access to such a large number of discs. And a bonus (thanks to the 30-plus pounds of the disc magazine) is the changer's virtual immunity to physical shock and impact. We found it quite impossible to cause skipping or any other effect (other than bruised hands) by pounding the player unit on all sides.

Probably not everyone will need, or want, a 100-disc CD changer. For those who do, however, the JVC XL-MC100 is certainly one to look into. □

## MEASUREMENTS

Maximum output level.....	1.96 volts
Frequency response.....	20 Hz to 20 kHz $\pm 0.03$ dB
Channel separation	
100 Hz.....	106 dB
1 kHz.....	104 dB
20 kHz.....	83 dB
Signal-to-noise ratio (A-wtd.).....	104 dB
Dynamic range.....	98.4 dB
Distortion (THD+N)	
1 kHz (-80 to -6 dB).....	.0015%
100 Hz to 20 kHz (0 dB).....	.004%
20 Hz (0 dB).....	0.009%
Linearity error (-60 to -90 dB).....	.56 dB
Maximum interchannel phase shift at 20 kHz.....	-1.2°
Defect tracking	
Pierre Verany #2 test disc.....	1,000 $\mu$ m
Impact resistance (top and sides).....	A+
Slewing time.....	2 seconds
Disc-change time.....	13 to 17 seconds

User Files can be created, each containing up to sixteen discs, and any of the files can be recalled for playback in the specified order. The Delete mode can exclude from playback any tracks on a specified disc. Intro-scan plays the first 15 seconds of each track on a specified disc.

Another interesting feature is the disc-title memory bank. Each of the

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 CA- Audio Concepts: Long Beach; San Gabriel Coast Stereo: Alascadero; Santa Maria; Creative Stereo: Santa Barbara; Ventura; David Rutledge Audio: Palm Springs; Henry Radio: LA; Pacific Coast A/V: Newport Beach; Paradyne: Sacramento; Performance Audio: San Francisco; Sound Co.: Escondido, San Diego; Sound Goods: Campbell, Min. View Systems Design: Redondo Beach; Wilson A/V: Woodland Hills.  
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 DC Suburbs: Audio Buys.  
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 GA- Stereo Shop: Martinez; Stereo Video Systems: Marietta.  
 HI- Audio Center: Honolulu; Classic Audio: Honolulu.  
 IA- Audio Logic: Des Moines; Camera Corner: Davenport; Hawkeye: Iowa City, Cedar Falls.  
 ID- Good Ear: Boise.  
 IL- United Audio Centers: Chicago & Suburbs; Camera Corner: Bloomington; Cars & Stereo: Rockford; Jon's Home Center: Quincy; Stereo Studio: Palatine; Select Sound: Naperville; Sterling Elect.: Sterling; Sundown One: Springfield.  
 IN- Ovation Audio: Clarksville, Indianapolis.  
 KS- Accent Sound: Overland Park; Advance Audio: Wichita; Audio Junction: Junction City.  
 KY- Ovation Audio: Lexington, Louisville.  
 LA- Alterman Audio: New Orleans, Metairie, Covington; Music Plus: Baton Rouge; Wright's Sound Gallery: Shreveport.  
 MA- Goodwins Audio: Boston, Shrewsbury; Nantucket Sound: Hyannis.  
 MD- Audio Buys: Annapolis, Gaithersburg, Laurel, Rockville, Waldorf; Cumberland Elec.: Cumberland; Gr. Imphone: Balt., Elk City; Soundscape: Balt.; Sound Studio: Salisbury.  
 ME- Cookin': Portland.  
 MI- Pecar's: Detroit; Troy; Classical Jazz: Holland; Front Row A/V: Flint; Future Sound: Ypsilanti; Court St. Listening Room: Midland, Saginaw.  
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 OK- K Labs Premium Audio: Tulsa.  
 OH- Audio Craft: Akron, Cleveland, Mayfield Hts., Westlake; Audio Etc.: Dayton.  
 OR- Bradford's HiFi; Eugene; Chelsea A/V: Portland, Beaverton; Kelly's Home Ctr.: Salem; Stereo Plant: Bend.  
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 UT- AudioWorks: Salt Lake City; Stokes Bros.: Logan.  
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 WVA- Sound Post: Princeton.  
 WI- Absolute Sound & Vision: Sheboygan; Audio Emporium: Milwaukee; Sound World: Wausau.  
 Puerto Rico- Precision Audio: Rio Piedras.  
 Canada- Advance Electronics: Winnipeg; Audio Ctr.: Montreal, Ottawa, Quebec City; Audio Designs: Edmonton; Bay Bloor Radio: Toronto; Digital Dynamics: Clearbrook B.C.; Great West Audio: London; Lipton's: New Market Ontario; Peak Audio: Halifax; Sound Hounds: Victoria B.C.; Sound Room: Vancouver; Sound Station: Courtenay B.C.  
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# TEST REPORTS



## Sonance Sonamp 2120 Power Amplifier

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Sonance is probably best known for its in-wall loudspeakers, but in recent years the company has been making more and more complementary products, including various electronic accessories and power amplifiers. Its new Sonamp 2120 was designed especially for home theater, multiroom sound distribution, and custom installations. For convenience of installation, it has an "auto-on" circuit that turns it on when a signal appears at its input terminals and switches it off after a few minutes without an input signal (this feature can be bypassed if desired). To simplify large sound-distribution installations, it also has two sets of parallel-connected signal input jacks, enabling daisy-chaining of two or more amplifiers without the use of Y-connectors, which might compromise reliability.

Another reliability factor is the amplifier's conservative circuit design. It

uses only discrete, high-speed output transistors, fully protected against turn-on surges, overload, short circuits, and overheating. The power supply is built around a heavy-duty toroidal power transformer and rectifiers, with oversized heat sinks.

The Sonamp 2120's back panel holds the AC line fuse and two pairs of insulated five-way binding-post speaker connectors (accepting dual banana plugs, lugs, or stripped wire

leads), as well as the line-in and line-out RCA jacks. A slide switch enables or disables the amplifier's automatic turn-on feature.

On the front panel are a pushbutton power switch and red and green LED indicators that glow when the amplifier is connected to an AC power source and when it is active, respectively. There are also two small holes through which the level of each channel can be adjusted with a screwdriver.

Although the Sonamp 2120's rear-apron markings indicate that it is to be used with 8-ohm speakers, the specifications in the instruction manual include power and distortion ratings for both 8- and 4-ohm loads, and we tested it accordingly. With both channels driven, the amplifier substantially exceeded its specified power into both load impedances. Encouraged by these results, we added a 2-ohm load in our dynamic-power measurements (20-millisecond bursts, twice per second). Even into that very low impedance, the Sonamp 2120 continued to pump out more power.

The Auto-On switching circuit turned on the amplifier with a very

### DIMENSIONS

16¾ INCHES WIDE, 5¾ INCHES HIGH,  
12¾ INCHES DEEP

### PRICE

\$575

### MANUFACTURER

SONANCE, DEPT. SR, 961 CALLE NEGOCIO,  
SAN CLEMENTE, CA 92672



# “Definitive’s Subwoofers Deliver Ultimate Bass Performance!”

*The extraordinary new PowerField™ 1500 features a 250-watt amp, fully adjustable electronic crossover and massive 15-inch driver for only \$995.*

## “A Show Stopper”

— *Stereo Review*

When Definitive set out to build the world’s finest sounding subwoofers, our goal was to achieve the perfect synergy of powerful earth-shaking bass (for home theater) combined with a refined and expressive musicality.

First we developed our proprietary PowerField Technology which ensures superior high power coupling and unexcelled transient detail. Next we engineered the PF 1500’s beautiful rock solid monocoque cabinet which houses our high current 250-watt RMS amplifier, fully adjustable electronic crossover and massive 15” cast-basket driver. The result is unsurpassed bass which thunders



*The PowerField 1500 (\$995) has been honored by winning Sound & Vision’s highly coveted 1994 Critic’s Choice Award*

down below 15 Hz, yet retains total musical accuracy.

## Perfect for Your System

To ensure optimum performance, the PF 1500 has high and low level inputs and outputs plus adjustable high pass, low pass, volume and phase controls to allow perfect blending with any system and ultimate bass response in any room.

Before you buy new speakers, you owe it to yourself to visit a Definitive dealer and experience the sonic superiority of our complete line of award-winning loudspeakers.

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See our dealer list on page 46 (410) 363-7148

# TEST REPORTS

small input signal (about 1 millivolt), and it remained on for about 4 minutes after the input was removed. The switching action was completely silent, detectable only by watching the panel lights (or hearing the program that triggered the switch). The amplifier's top cover became only faintly warm in normal operation, and we found that even sustained high-power tests did not make it uncomfortably hot to the touch.

Very few power amplifiers in the Sonamp 2120's price range can match its performance. Despite its moderate price and conventional external ap-

## MEASUREMENTS

### Output at clipping (1 kHz)

8 ohms	170 watts
4 ohms	250 watts

### Clipping headroom (re rated power)

8 ohms	1.5 dB
4 ohms	2.0 dB

### Dynamic power

8 ohms	190 watts
4 ohms	338 watts
2 ohms	400 watts

### Dynamic headroom (re rated power)

8 ohms	2.0 dB
4 ohms	3.3 dB

### Distortion

at 120 watts into 8 ohms	0.007%
at 160 watts into 4 ohms	0.01%

### Sensitivity (for a 1-watt output)

	85 mV
--	-------

### A-weighted noise (re a 1-watt output)

minimum gain	-99 dB
maximum gain	-92.5 dB

### Frequency response

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

pearance, it is a very powerful and rugged amplifier. Add to this its compact size and operating convenience, and it is plain that the Sonamp 2120 would be an excellent choice for any serious home audio installation, and not necessarily limited to the multi-room and home theater installations for which it was primarily designed. We found its Auto-On feature especially handy for use with a tuner/pre-amplifier, whose output controlled the Sonamp without requiring more than an audio signal connection between the two. □



## Camber 1.0ti/SM Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The 1.0ti/SM is the smallest and least expensive of the five loudspeakers in Camber's premium ti series. It is a two-way system with a 6½-inch woofer operating in a vented enclosure. The woofer cone, made of a mineral-filled copolymer, has a rubber surround. The crossover, at 3 kHz, is to a ¾-inch dome tweeter whose diaphragm is stamped from a single sheet of titanium. The dome has an integral spiral-shaped titanium surround that also serves as a heat sink (the tweeter is cooled and damped by magnetic fluid as well). Camber says that the drivers in its speakers are designed to complement each other, simplifying crossover design.

The 1.0ti/SM's front panel is largely occupied by the two drivers and the bass port. It is covered with a black cloth grille retained by plastic posts. The input connectors, recessed into the back of the cabinet, are multiway binding posts on ¾-inch centers, us-

able with dual banana plugs as well as wires or lugs.

Camber specifies the 1.0ti/SM's frequency response as 60 Hz to 20 kHz ±3 dB. The system's nominal impedance is 8 ohms, with a minimum value of 7 ohms, and its rated sensitivity is 89 dB sound-pressure level (SPL) at 1 meter with a 1-watt input. The 1.0ti/SM is recommended for use with amplifiers rated between 10 and 100 watts per channel.

### DIMENSIONS

8½ INCHES WIDE, 14½ INCHES HIGH,  
11½ INCHES DEEP

### FINISH

BLACK-ASH VINYL

### PRICE

\$499 A PAIR

### MANUFACTURER

CAMBER LOUDSPEAKERS, DEPT. SR, P.O. BOX 307,  
SOUTH DAYTON, NY 14138



# The Game Has Changed. Evolve.



*The detachable face-plate TD-7 Cassette Receiver  
One option for controlling the MB-7*

The mobile CD changer has finally evolved. Nakamichi proudly introduces the seven-disc MB-7 Mobile MusicBank™ System. The magazine changer is history. Now loading discs is as simple as placing one on a tray and pushing a button.

Three versions are available to address any installation situation. The MB-7 can be paired with your choice of head units, the TD-7 or CD-7. The MB-7FM is designed for interfacing with existing OEM systems. For more elaborate component systems, the MB-9, with dual 18-bit D/A converters and digital output, is also available. Sound quality, of course, is pure Nakamichi. Price, however, is comparable to ordinary magazine players. Choose one and witness the extinction of an obsolete technology and the birth of a new one.

**The world's first  
mobile CD-changer  
without a magazine.**

*For CDs in-dash and in the trunk, the detachable  
face-plate CD-7 CD Player/Receiver.*



 Nakamichi

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# USE YOUR PORTABLE CD PLAYER WITH ANY CAR STEREO!

**T**he Sound Feeder Model SF100 Mobile Audio Connector is the most practical and convenient way to connect your portable Compact Disc Player or Cassette Player to your car's existing FM radio speaker system. By simply plugging the Sound Feeder into your cigarette lighter, connecting the audio input wire to your portable player, and setting it to the desired station, you can begin to enjoy the amplified STEREO sound of your portable music source without the bother of dangerous (and often illegal) headphones.

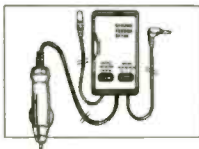


## **SOUND FEEDER** MOBILE AUDIO CONNECTOR

- Completely Portable • Reduces Theft
- No Cassette Deck Required

As an added feature, the Sound Feeder contains a specially designed DC-to-DC converter that provides 4.5v, 6v, or 9v DC power from the car cigarette lighter to some models of portable players.

The Sound Feeder's combination of stereo sound, easy installation, portability and power supply feature, plus its ability to reduce the risk of theft and save the expense of a costly in-dash system, make it the ideal accessory for every vehicle owner.



NEW FOR  
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CIRCLE NO. 4 ON READER SERVICE CARD

# TEST REPORTS

For room-response measurements, we placed the Camber 1.0ti/SM speakers 7 feet apart on 26-inch stands, about 2 feet from the wall behind them and several feet from the side walls. With the microphone on the axis of the left speaker, and some 12 feet from it, the room responses of both speakers were measured and averaged on the same graph coordinates. The driving signal was a swept-frequency sine wave with a one-third-octave warble superimposed.

The resulting averaged response was within about  $\pm 3$  dB from 300 Hz to 20 kHz. Floor reflections produced somewhat greater variation at lower frequencies, but the overall response was still within  $\pm 5$  dB from 70 Hz to 20 kHz.

We measured the woofer response separately, with close microphone spacing to remove room effects. Combining the measurements from the cone and port, corrected for their relative dimensions, produced a woofer curve that varied only  $\pm 1$  dB from 50 to 250 Hz, sloping off smoothly at higher frequencies. Splicing this curve to the room measurement yielded a composite response curve that showed a smooth, elevated output between 50 and 300 Hz, about 5 or 6 dB higher than the range from 1 to 20 kHz. That was reasonably consistent with what we heard from the speakers, which sounded very smooth overall, with a slightly warm lower midrange and excellent bass.

Measurements at 1 meter with a swept one-third-octave noise signal indicated an axial frequency response of  $\pm 1$  dB from 60 Hz to 10 kHz, falling to  $-4$  dB at 20 kHz. The off-axis response was within 2 dB of the on-axis reading up to 5 kHz, falling off to  $-3$  dB at 10 kHz and  $-11$  dB at 20 kHz. A quasi-anechoic MLS response measurement showed a  $\pm 1.8$ -dB variation from 300 Hz to 3 kHz, a 2-dB increase between 5 and 7.5 kHz, and a return to the average midrange levels from 8 to 16 kHz followed by a drop to  $-4$  dB at 20 kHz.

The system's sensitivity was 87 dB, slightly lower than rated. With a 4-volt drive level (equivalent to a 90-dB SPL) the woofer distortion averaged about 1 percent from 2 kHz to 80 Hz,

rising to 4.5 percent at 50 Hz and 8.5 percent at 40 Hz. The speaker's highly uniform group delay (less than 0.3 millisecond variation from a few hundred hertz to 20 kHz) attested to its excellent phase linearity.

The minimum impedance of 7 ohms was measured at 180 to 200 Hz. There were impedance peaks at the two bass resonances—34 ohms at 25 Hz and 40 ohms at 75 Hz—and the maximum impedance of 50 ohms occurred at 1.5 kHz.

The woofer cone bottomed noisily on a burst of 385 watts at 100 Hz. At higher frequencies the speaker was able to take anything our test amplifier could dish out into its relatively high impedance: 240 watts at 1 kHz and 575 watts at 10 kHz.

Listening to the Camber 1.0ti/SM, we thought it sounded very much the

**Our measurements were fairly consistent with what we heard from the Camber 1.0ti/SM's, which sounded very smooth overall, with a slightly warm lower midrange.**

way its measurements looked—a musical-sounding speaker with excellent imaging, a smooth, nonsizzling treble, and a slightly warm low end. Overall, compared with other small speakers we have tested, it seemed to fit neatly into its price niche. We found it superior to most of the lower-price minispeakers and not quite the equal of costlier models, but a clear competitor in its own price range. It is also smaller than most other speakers at its performance level. If you're in the market for a compact, reasonably priced, high-performance loudspeaker, the Camber 1.0ti/SM deserves a place on your audition list. □



# You need the right tone of voice to say Home Theater

In a movie theater, the speaker you never see is the center channel. That's because it's located directly behind the screen, so dialogue sounds as if it's coming directly from the actor's mouths. Although movie screens have tiny holes in them to allow the soundtrack to pass into the theater, the screen material absorbs so much high frequency information that filmmakers are forced to boost the treble content of the soundtrack. Unfortunately, when a film is transferred to videotape or laserdisc, this high frequency boost remains, resulting in dialogue that is unnaturally harsh and much too "up front" for home theater. While most speaker manufacturers design their center channel systems to be acoustically flat—a noble goal, they completely ignore the question of overly bright dialogue reproduction.

To overcome this problem, Atlantic Technology's Model 153 C Center Channel Speaker gently rolls off the high frequencies for smooth reproduction of

center channel dialogue information. When designing the 153 C, our R&D team spent countless hours listening to a wide variety of film and television soundtracks. These tests allowed us to perfectly tune the Model 153 C for extended listening, without the brittle, misdirected and harsh sound often associated with center channel loudspeakers. The result is rich, natural sounding vocal reproduction. Simply put, the right tone of voice.

At Atlantic Technology, we specialize in home theater. We listen to our customers and to movies with equal excitement, then deliver components that are as much about value as they are about performance. That's why *Video Magazine* said "In its price range, Atlantic Technology is currently very hard—if not impossible—to beat." Call 617-762-6300 and refer to Dept. B for more information and the name of your nearest Atlantic Technology dealer.



## Atlantic TECHNOLOGY

343 Vanderbilt Ave. Dept. B  
Norwood, MA 02062

CIRCLE NO. 5 ON READER SERVICE CARD

**"Deserve's got nothin' to do with it."**

If you can name the movie the above quote is from, the character who said it, and the actor who played the role, you can be entered in a drawing to win our Center Channel Speaker. Send your answers on a postcard to Atlantic Technology, Contest Dept., 343 Vanderbilt Ave, Norwood MA 02062. Contest ends 3/31/94

I put the top down on my audio system and  
got blown away.



Great sound is always in the air when there's a Delco Electronics Sound System nearby. Maybe it's because we're obsessed with reproducing high quality sound. From the subtle "ping" of the cymbal to the deep "throbbing" bass. So breeze by your local car dealer and check into it yourself. Because hearing is believing.



DEALER'S  
CHOICE

# 3 FOR THE ROAD

**AUTOSOUND  
PROS MAP OUT  
BUDGET SYSTEMS  
FOR 3 POPULAR  
VEHICLES**



**A**utomakers have come a long way in improving the quality of the sound systems they put into new vehicles. Even so, if you listen to a lot of music on the road, if you're a real enthusiast with high audio expectations, the standard system that comes with a car probably won't satisfy you for very long. Dull highs, boomy bass, hole-in-the-middle imaging, gnawing distortion—these are just a few of the common complaints. Of course, you could have gotten better sound by opting for the premium package your dealer offered you when you bought the car. But you didn't. So now what do you do?

We asked experts from three respected autosound shops to recommend the "best-sounding" aftermarket system for three popular vehicles, the Acura Integra, the Dodge Caravan, and the Ford Taurus. The catch was that we also asked them to include CD in their plans *and* to hold the ticket (including installation) to \$1,500 or so. Our final request was to suggest an upgrade option that would take the system to the next level of performance. While the following systems were formulated with specific vehicles in mind, they can be adapted to other makes and models. All prices given are what these dealers actually charge.

**B Y B O B**

**A N K O S K O**



Alpine Model 6663HD coaxial speakers



ADS Power Plate 4.25 amplifier



ACA EQ250 subwoofer



Pioneer DEH-45 CD receiver

## U P G R A D E

ADS Power Plate 6.25 amplifier



Pioneer DEH-P65 CD receiver





**DEALER'S  
CHOICE**

# ACURA INTEGRA

**A**utosound guru Rich Inferrera, the owner of Rich's Car Tunes in Watertown, Massachusetts, mapped out a system for the 1994 Acura Integra sedan that's designed to deliver "extremely clean sound and accurate bass." Phase one of his plan calls for replacing the factory cassette receiver with a Pioneer DEH-45 CD receiver. In addition to a theft-detering detachable faceplate, "it's got an incredibly smooth transport and super-sounding preamp and D/A [digital-to-analog] sections," says Inferrera, who's been installing car stereo systems since the days of the eight-track tape player.

Next he'd replace the factory speakers in the front doors with a pair of Alpine Model 6663HD coaxial speakers, which would be concealed by the existing grille covers. "The 6663HD is the best-sounding 6½-inch two-way speaker we sell for anything that's close to that price," Inferrera says. "It has great midrange/midbass performance and a smooth-sounding soft-dome tweeter." The 6 x 9-inch speakers in the rear deck would be left intact and powered by the Pioneer DEH-45 CD receiver.

To fulfill his promise of extended, accurate bass performance, Inferrera turns to the EQ250 subwoofer from Advanced Composite Audio (ACA), a company founded by the former director of loudspeaker development at ADS. Rated "honestly" down to 15 Hz, the EQ250 packs a single 10-inch driver in a peculiar pentagonal enclosure that has a flexible tube coming out of it. Inferrera would secure the compact box in the back of the trunk and run the tube, which serves as the system's port, up to a 4-inch-diameter hole he'd cut in the rear deck; the hole would be concealed by the deck's fabric covering or, if necessary, an inconspicuous grille cover. "The EQ250 is

very smooth-sounding and has a lot of accurate impact," says Inferrera. "It also has a thermal-shutdown circuit so you don't damage the woofer."

For power, Inferrera would run a set of RCA cables from the Pioneer DEH-45's line-level outputs to an ADS Power Plate 4.25 amplifier, rated at 4 ohms to deliver 25 watts into each of four channels, which he'd bolt to the floor under the passenger seat. Two channels would power the Alpine door speakers and two would be bridged to feed 50 watts to the subwoofer. Inferrera would use the amp's variable crossover to match the subwoofer to the front speakers and use the head

unit's fader control to adjust the level of the rear speakers to complement—not overpower—the front speakers.

The installation would take 8 hours, which at the shop's rate of \$45 an hour works out to \$360. Add that to \$1,146 for components and \$100 for cables and miscellaneous parts, and the grand tally is \$1,606. "Lots of people will claim to be able to install this system in less time," warns Inferrera, a stickler for detail. "But don't be fooled by low labor charges. You always get what you pay for. We would install this system for the life of the vehicle, using proper wire, connectors, and shrink tubing to protect the wire."

Inferrera's component combo will work in any car that has 6-inch front-door speakers and a rear deck. "If your car has 4-, 5¼-, or 5 x 7-inch door speakers," he says, "buy the best speaker you can afford that fits and follow the rest of the system exactly." For a hatchback, he'd go with ACA's SW160 subwoofer (at a saving of \$110), a more conventional design that could be placed anywhere in the hatch area.

For those who want to take the system to the next level, Inferrera suggests stepping up to Pioneer's more fully featured DEH-P65 CD receiver (\$549), which has CD changer controls and dual line-level outputs, and ADS's six-channel Power Plate 6.25 amplifier (\$359). He'd use the extra amplifier channels to power the rear speakers. "We'd be able to balance the system using the amplifier's gain controls instead of the head's fader control." Going with these components from the starting gate would bump the ticket up an additional \$290 to \$1,896 (labor charges would be the same), while adding them at a later date would cost \$1,088, which includes \$180 in labor charges.



## BOTTOM LINE

**Rich's Car Tunes  
Watertown, Massachusetts**

Pioneer DEH-45 receiver	.....	\$359
ADS Power Plate 4.25 amplifier	...	\$259
ACA EQ250 subwoofer	.....	\$349
Alpine 6663HD speaker (pair)	.....	\$179
Cables and miscellaneous parts	...	\$100
Labor	.....	\$360
Total	.....	\$1,606 (+ tax)

**DEALER'S  
CHOICE**

# DODGE CARAVAN

**D**oug Ide, the installation manager at Paradyme Car Audio in Sacramento, California, apologized for going over our budget, but he insists that his plan for the 1994 Dodge Caravan represents "the best system you can buy for the price without sacrificing sound quality."

The system begins with a Sony CDX-5060 CD receiver, a detachable-face head that Ide says is very easy to operate. "It has the most features for the price, and its buttons are big and well illuminated for nighttime use," he notes. The CDX-5060's line-level outputs would feed a Soundstream Granite 180.6 amplifier, rated at 4 ohms to deliver 30 watts into each of six channels. Ide would mount the amp under the driver's seat and use four of its channels to drive the front speaker complement and a pair of coxials in the rear of the van. The other two channels would be bridged, delivering 100 watts to a custom-built subwoofer under the rear passenger seat.

Primary sound would come from Soundstream's P51 two-way component speaker system, consisting of two 5¼-inch woofers and two 1-inch soft-dome tweeters. Ide would drop a woofer into the stock cutout in each front door and mount a tweeter above it, flush with the door trim. Each channel has its own passive crossover box, which Ide would tuck away under the driver's seat next to the amplifier. The factory speakers in the van's tailgate door would be replaced by a pair of Alpine Model 6297 6 x 9-inch coxials, which Ide terms "adequate" for rear-fill use.

To fill in the bottom end with "clean, tight bass," Ide recommends a custom-made subwoofer enclosure

built around an 8-inch Soundstream Granite Pro 8 woofer. "We'd make a low-profile rectangular box that would fit under the passenger seat in the very back of the van," he explains. "It would sound a lot better than a prefab box or tube, and it would be easily accessible from the tailgate or in front of the seat." The enclosure would be

made of sturdy ¾-inch Medite and covered with carpeting.

Once everything was in place, Ide would set the low-pass section of the amplifier's built-in crossover at 75 Hz and cross the front speakers over at 150 Hz. He'd let the rear coxials run full range.

"I picked Soundstream's Granite series amplifier and speakers because they're durable, reliable, and flexible, and they offer great sound for the money," Ide says. "For the price, you just can't beat the performance."

The component tab comes to \$1,311, including \$100 for the custom subwoofer enclosure. Ide's fee for installing the rig would be \$250, bumping the total up to \$1,561. For those who want a stealth system, Ide would paint the speaker grilles to match the van's interior for an extra \$45. "This system is an overall good performer that is fairly simple to install," he says, adding that it's also perfect for the Caravan's siblings, the Plymouth Voyager and the Chrysler Town & Country, and easily adaptable to Ford's Aerostar van.

Ide is so confident in the performance of the system that his upgrade plan is quite simple, calling only for replacing the Sony CDX-5060 CD receiver with a CDX-5460 (\$429). He prefers the 5460 over the 5060 because it has a wireless remote control and dual line-level outputs, which provide front-to-rear fading capability. In truth, Ide would do his best to convince you to go with the CDX-5460 from the get-go. Doing so would tack on only \$100 to the system ticket, compared to the \$449 (including labor) it would cost to replace the head unit at a later date.



## BOTTOM LINE

**Paradyme Car Audio  
Sacramento, California**

Sony CDX-5060 CD receiver . . . . .	\$329
Soundstream Granite 180.6 amp . . . . .	\$449
Soundstream P51 speaker system . . . . .	\$220
Soundstream Granite Pro 8 woofer . . . . .	\$105
Alpine 6297 speaker (pair) . . . . .	\$108
Custom subwoofer enclosure . . . . .	\$100
Installation kit and cables . . . . .	N/C
Labor . . . . .	\$250
Total . . . . .	<b>\$1,561</b> (+ tax)





Alpine Model 6297 coaxial speakers

Soundstream Granite Pro 8 woofer



Sony CDX-5060 CD receiver



Soundstream Granite 180.6 amplifier

**U P G R A D E**



Sony CDX-5460 CD receiver



Soundstream P51 speaker system

Clarion SE3905 6 x 9-inch speakers



Clarion SE3603 6½-inch speakers



Clarion AT8 powered subwoofer



Clarion 5780CD CD receiver

## U P G R A D E



Clarion A1200 amplifier



Clarion 73EQ graphic equalizer



**DEALER'S CHOICE**

# FORD TAURUS

**D**on't expect virtual reality or a rolling concert hall for \$1,500," says Paul Papadeas, the owner of Sound Crafters in South Daytona, Florida. "What you can expect is excellent performance—provided the system is properly designed and installed." The component lineup he recommends for the 1994 Ford Taurus is "aimed at the value-conscious consumer who wants a nice-sounding system. I chose all Clarion components because they offer good value and upgrade potential and they're reliable," explains the twenty-three-year autosound veteran. "I've also learned over the years that people tend to feel more comfortable buying a one-brand system."

The system would revolve around Clarion's Model 5780CD CD receiver, chosen for its relatively high-power amplifier, which is rated to deliver 14 watts continuous power to each of four channels. "Using the self-contained power helps keep the cost down because we can use the factory wiring harness and we don't have to run new wires from an outboard amplifier to the speakers," says Papadeas. With the help of a Metra installation kit and wiring-harness adaptor, he would be able to slide the deck neatly into the dash and tap directly into the factory harness without having to splice any wires, which would void the vehicle's factory warranty. Among the operating features that make the Model 5780CD attractive are a detachable control panel to ward off thieves and the novel Zero-Bit Detector circuit, which automatically mutes system output in the absence of an audio signal to reduce background hiss.

For speakers, Papadeas turns to the Pro Audio series Clarion introduced

last year. The challenge with the Taurus is to find a speaker capable of delivering acceptable highs from a front-door mounting location that is partially obscured by the dashboard. His choice: a pair of SE3603 6½-inch triaxials, with a 1-inch soft-dome mid-range and a ¾-inch tweeter suspended over a 6½-inch woofer. He'd replace the rear-deck speakers with a pair of SE3905 6 x 9-inch triaxials. "Both speakers are very efficient [their sensitivity ratings exceed 90 dB], and



they present no installation obstacles," he says.

Bass—and plenty of it—would be delivered by a trunk-mounted AT8 powered subwoofer that's rated down to a tooth-rattling 25 Hz. Fed by the 5780CD's line-level output, the AT8 combines an adjustable low-pass crossover, a 22 watt-per-channel amplifier, and an 8-inch dual-voice-coil driver in a tube-shaped enclosure with integral mounting brackets. Papadeas would position the subwoofer in a corner of the trunk to maximize its output and would set the crossover at about 175 Hz to achieve a smooth transition between low and middle frequencies.

"This system offers a level of performance that would satisfy the audiophile in anybody at that price," says Papadeas, noting happily that Sound Crafters could install it for \$160 *under* budget. "It would sound significantly better than the standard factory system, especially in terms of frequency response and clarity. The sound would be very full thanks to the subwoofer." Another key selling point of this lineup, according to Papadeas, is that it can be adapted to just about any four-door sedan—including, of course, the Mercury Sable.

To address "the beast within" that has been known to emerge once the novelty of owning a good car audio system wears off, Papadeas would double the power to 30 watts per channel (continuous) by installing a four-channel A1200 amplifier (\$350) in the trunk. He'd also mount a Model 73EQ seven-band graphic equalizer (\$150) in the dash to give the listener greater tone control. The cost of this upgrade: \$580, including a very reasonable \$80 for labor. □

BOTTOM LINE	
Sound Crafters South Daytona, Florida	
Clarion 5780CD CD receiver . . . . .	\$500
Clarion SE3603 speaker (pair) . . . . .	\$190
Clarion SE3905 speaker (pair) . . . . .	\$200
Clarion AT8 powered subwoofer. . . . .	\$250
Metra installation kit. . . . .	\$ 40
Labor. . . . .	\$160
<b>Total . . . . .</b>	<b>\$1,340</b>
	(+ tax)

# THE SOUNDTRACK BOOM

More and more hit albums are coming out of the movies.

**C**all it the Various Artists Syndrome. We're talking about the recent spate of movie soundtrack albums—the ones accompanying major commercial flicks in which the work of a lot of big-name pop music acts either figures in or comments on the action.

It's not a new idea, of course; in the rock era it's as old as the soundtrack to *The Graduate* (1967). *Saturday Night Fever* was a hit in the Seventies, *Top Gun* and *Dirty Dancing* in the Eighties. And you don't have to be a brain surgeon to figure out why record companies like these things—from a business standpoint they're relatively risk-free. Soundtracks are usually cheap to produce (a couple of pricey superstar tracks can be padded out with old, inexpensive-to-acquire material), and, more important, the movies function as ads for the albums. Sometimes a CD makes it even when the movie bombs. The soundtrack CD for 1993's Arnold Schwarzenegger vehicle *The Last Action Hero*, for example, sold quite respectably despite the film's untimely death in theaters.

To be sure, there are aesthetic reasons behind the soundtrack boom as well. Many of today's younger directors and writers are more comfortable with pop music than their predecessors were, so it's natural that they would try to integrate contemporary songs into the emotional framework of their material. And—if the filmmakers have done their job right—it's also natural that the moviegoing audience would want to hear the music at home on CD.

But striking a balance between what works in the theater and what works as a coherent album isn't an easy task. "Basically, you have to pick stuff that's going to serve the movie," notes Ron Fair, the RCA exec who supervised the music selection for *Reality Bites* with director Ben Stiller. "A great song itself isn't the only criterion; it's got to mean something in the context of the film."

Which means that a great movie soundtrack doesn't necessarily make a great soundtrack CD. That being the case (and given that this peculiar hybrid album genre seems likely to be a flourishing one for the foreseeable future), here's a look—in no particular order—at some examples you'll find prominently displayed in record stores this very moment.

## PHILADELPHIA

EPIC SOUNDTRAX 57624

The film this CD is drawn from is one of the more depressing in recent memory, so "Philadelphia" isn't exactly a party record, and at home the music can seem jarringly uneven. Bruce Springsteen's *Streets of Philadelphia* is something of a triumph, a haunted-sounding elegy unlike anything he's ever done before, and the Maria Callas aria from *Andrea Chenier*, which accompanies one of the film's most affecting moments, is gorgeous. But Neil Young's closing theme is simplistic, Peter Gabriel's *Lovetown* is too earnest to work on its own, and the Spin Doctors' cover of *Have You Ever Seen the Rain* confirms their status as America's luckiest not-so-hot bar band. **GUTSY MOVE:** Springsteen is now the first heterosexual superstar to have released a song taking the point of view of a gay man.

## SLEEPLESS IN SEATTLE

EPIC SOUNDTRAX 53764

Any album that features Nat King Cole singing *Stardust* is worth hearing, and the rest of this package—starring Jimmy Durante (*As Time Goes By*), Louis Armstrong (*A Kiss to Build a Dream On*), and Gene Autry (*Back in the Saddle Again*)—is mostly charming in a deliberately old-fashioned romantic way,

**B Y S T E V E S I M E L S**





very much in the spirit of the film itself. **MISCALCULATION:** Harry Connick, Jr. is on here too.

### THE BODYGUARD

ARISTA 18699

Strictly state-of-the-art. Adult Contemporary mainstream pop crafted for maximum radio play—selections by Kenny G., Lisa Stansfield, Joe Cocker, the Jeff Healey Band, and (of course) Whitney Houston. After 26 million copies sold worldwide (and a slew of Grammys), this CD is all but impervious to criticism. But was it really such a good idea for Houston and producer David Foster to transform Dolly Parton's intimate little *I Will Always Love You* into what sounds like an outtake from *Götterdämmerung*? **FOOD FOR THOUGHT:** More people have bought this CD than any single album by the Beatles.

### GUNMEN

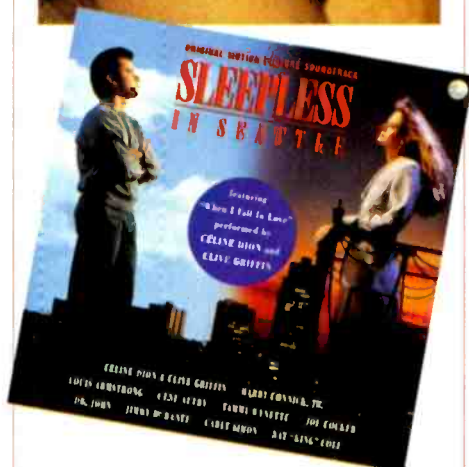
MCA 10708

Eclecticism run appealingly amuck, from John Debney's *Jungle Chase*, which sounds like the Gipsy Kings on speed, to a terrific Los Lobos version of Creedence's *Run Through the Jungle*. And the hip-hop stuff is nicely atmospheric (love those Ennio Morricone quotes in Kid Frost's theme song). A mishmash, but it works—this is one of those soundtracks that really has a sort of organic I-Am-an-Album feel to it. **MISSED OPPORTUNITY:** Although Patrick Stewart (chrome-domed Captain Picard on *Star Trek: The Next Generation*) has a small role in the film, he does not sing or rap here.

### SINGLES

EPIC SOUNDTRAX 52476

The idea for this album, clearly, was to do for Seattle alternative rock what *The Harder They Come* did for Jamaican reggae—take it into the commercial mainstream—and as a sampler for a now ubiquitous rock genre, "Singles" is hard to beat. But what is surprising is that there's so little variety from track to track; stylistically, a lot of these bands—Pearl Jam, Mother Love Bone, Mudhoney, Alice in Chains—sound like Led Zeppelin coughing up a furball. **REASONS TO BE CHEERFUL:** Coolest-humanoid-on-the-planet Paul Westenberg's *Dyslexic Heart* and *Waiting for Somebody* remain irresistible despite serious radio overexposure.



### SISTER ACT 2: BACK IN THE HABIT

HOLLYWOOD 61562

It's hard to imagine that the post-*Big Chill* vogue for recycled Motown standards has gone so far that people want to hear Whoopi Goldberg singing them—in theaters, maybe, but at home? Here, Aretha Franklin's *A Deeper Love* does work up a genuine gospel head of steam. But when Whoopi and the cast start belting out *Ball of Confusion* you may get the feeling this is a highly sanctified novelty record. Rent the video instead—or, better yet, buy a real Temptations album. **BONUS POINTS:** No vocals by Ted Danson.

### REALITY BITES

RCA 66364

Mixing late-Seventies nostalgia acts with current alternative faves would seem to guarantee jukebox play at bars catering to mildly alienated twenty-somethings, and in the case of this highly entertaining compilation it would be well deserved. The new Posies and World Party songs are lovely. Squeeze's remake of *Tempted* lives up to the original, and almost everything else—even Juliana Hatfield's typically arch *Spin the Bottle* and a woozy vocal turn by star Ethan Hawke—has its moments. **SEVENTIES PRESERVATION ALERT:** The original master tape of the Knack's *My Sharona* had deteriorated so badly it had to be baked (literally) and fitted with a new sampled drum track before it could be included on the soundtrack.

### BACKBEAT

VIRGIN 39386

A brilliant idea—recreating the live repertoire of the early Beatles using alternative musicians (members of Soul Asylum, Nirvana, REM, and so on) who weren't yet born when the Fabes were bashing out these rock and R&B standards in sleazy German dives—and it's brilliantly executed. The album's relative lack of polish is more than authentic sounding, it's an act of retroactive rock criticism that makes a believable case for the Beatles as the original punk band. **FUN FACT:** According to producer Don Was, the idea to do the soundtrack this way came from Ringo. □

Facing page, Mario van Peebles in *Gunmen* and Whitney Houston in *The Bodyguard*; this page (top), Winona Ryder in *Reality Bites*.

# IT'S UNPACKED.

**Y**our room is a glorious mess. An artificial weather front has just dumped a good 3 inches of styrofoam snow. The floor is strewn with cardboard boxes. In the corner lie twist-tied baggies containing owner's manuals you may not get around to reading. Remotes, batteries, and accessories are waiting patiently for you. But first, you've got this screaming urge to fire that bad boy up. Countdown, 5...4...3...2... Hold it! How do you have all that stuff in-

## SETTING UP YOUR SYSTEM FOR GREAT SOUND

stalled and hooked up? If you don't have the patience to wade through the instruction manuals, then at least read this article. Spending a few minutes now can save you lots of trouble-shooting later.

### To Stack or Not to Stack

One of the most important things to remember is that placement matters. Where you put various components can make a big difference in both performance and reliability. For example, heat is a normal byproduct of amplifier operation. Exactly how much heat an amp or re-

ceiver generates will depend both on its design and on how hard it is driven. Continuous operation at high levels, especially with the loudness-compensation switch on or the bass control turned up, may produce large, even excessive, amounts of heat—like a car's engine when it's going up a steep mountain road on a hot summer day. This tends to be especially true of A/V receivers, which typically have five or more channels of amplification packed into a single relatively compact chassis. If that heat isn't dissipated rapidly enough, the amplifier may shut down to protect itself or perhaps even fail altogether. And since heat rises, anything placed on top of an amplifier or receiver will be warmed by it. So to prevent the lives of your components from being shortened unnecessarily by overheating, you need to be careful about how you stack and ventilate them.

If you have a basic audio system (receiver, CD player, etc.), it's not necessarily a problem to stack your equipment. Just make sure there is some clearance between components (usually their feet will provide all that's needed) and that no ventilation holes are blocked. If you like to listen at high volumes for extended periods of time, however, or you love to crank up the bass, or you own a separate power amp, it's a good idea to set the amplifier apart. If you must stack the amplifier, try to put it on top so that the rising heat can escape easily. And if you experience a thermal shutdown on any occasion, you'd better reposition the equipment

PHOTO BY STEVEN BEREN

**B Y M A R K E L S O N**



# NOW WHAT?



relay devices that enable you to operate remote controls through solid doors.

Next, the screen. Where it goes will be determined partly by how the speakers must be placed in relation to it (more about that later), but that's not all. There is an ideal seating distance from the screen. Remember, no matter how big your big screen, you'll have some trouble picking out the rose petals in Miss America's bouquet if you're sitting 50 feet away. But if you're too close, the scan lines that make up the picture will become obtrusive. Depending on who you talk to,

practical. The center speaker *must* be as close as possible to the screen, preferably directly above or below it. The left and right front speakers should flank the screen at equal distances from it. Try to keep all three speakers as close to the same horizontal plane as you can. If you are not using a center speaker, try to put the left and right front speakers at about the same height as the screen. Any speakers that are not magnetically shielded should be kept at least a foot or two away from any direct-view TV set to prevent picture distortion.

Placement of the surround speakers

are usually just fine. Make sure that the plugs are inserted fully and snugly into the jacks on the components. Loose connections can cause intermittent sound or hum. They also invite build-up of corrosion between plug and jack, which can precipitate radio-frequency interference (see below).

You should also keep speaker cables and, especially, interconnects as far as possible from AC power cords to prevent induction of 60-Hz power-line hum. (The cables leading from a turntable are most susceptible to audible hum pickup, so be particularly careful with them.) If signal-carrying cables must be in close proximity to AC lines, avoid running them parallel to each other (best is to cross them at 90-degree angles). Don't lasso your AC cables into neat little bundles that rest or hang next to signal cables. And, for heaven's sake, never eat at a place called "Mom's."

### **RFI: The Hidden Saboteur**

Another common problem is radio-frequency interference, or RFI. The world is awash in radio waves generated by such diverse sources as broadcast stations, high-voltage power lines, air traffic control, CB and ham radios, cellular phones, and on and on. Radio waves can also be emitted by common household items, including fluorescent lights, dimmers, TV sets, computers, CD players, and any appliance containing an electric motor.

Sometimes stray RF gets picked up by a cable or component in such a way that it gets reproduced through the system, resulting in hums, buzzes, clicks, squeals, or radio programs mysteriously received without the aid of your tuner. (As a teenager with braces, I was able to receive a local AM rock station by clenching my teeth, but only at a specific location and only in the afternoon, and my head had to be angled in line-of-sight to the broadcast tower. The volume was fairly low, so I tried hooking a coat hanger to my lower right bicuspid. Boy, people thought I was weird, standing motionless in the school parking lot with a hanger dangling out of my mouth. I promise you, it did happen. Really.) Radio frequencies can be injected almost anywhere in an audio system. Amplifier and tuner 1F (intermediate-frequency) stages are particularly susceptible. And tape heads can pick up RF if their shielding is not properly grounded.

Manufacturers build their equip-

## **MOST HUMS, BUZZES, AND OTHER ODD NOISES CAN BE PREVENTED BY FOLLOWING A FEW SIMPLE RULES.**

the formula for the ideal viewing distance is either four to five times the screen height or roughly two times the diagonal measurement. For example: A 50-inch set (diagonally measured) has a screen height of 30 inches. In this case, the optimum seating distance works out to between about 8 and 12 feet, depending on which formula you use, and anywhere in that range ought to be pretty good. These are just guidelines, however, and the A/V police won't bust you if your room requires different positioning.

More critical is the placement of the front speakers relative to the screen. In a theater, the three front speakers—left, center, and right—are all arrayed behind the screen, which is perforated to allow the sound to pass through. This arrangement enables perfect coordination of sound with on-screen action. It is possible to do the same thing in a home system, but few people have that luxury. A reasonable approximation is usually possible, however, and is in fact crucial to achieving a believable match between picture and sound.

Although not absolutely essential, a center-channel speaker will keep the sounds associated with on-screen action (dialogue, especially) firmly anchored to the screen for all listeners. It may also allow for somewhat wider spacing of the front left and right speakers than would otherwise be

is less critical. Best is usually on the walls to either side of the listening position and somewhat above seated ear level. But there are plenty of other possibilities. On the floor facing up works pretty well sometimes. Experiment. The goal is to create a diffuse sound field in which you are not specifically aware of the surround speakers.

### **Getting the Noise Out**

Once you've figured out approximately where everything is going to go, you're ready to get down to the nitty-gritty of hooking it all up. There is seldom any great mystery to this process (though you may have to break down and consult a manual once or twice) as long as you pay attention to what you're doing. Do bear in mind, however, that hums, buzzes, and other odd, annoying noises are often the result of connection problems. Fortunately, most such problems can be prevented by following a few simple rules.

**C**onnect electronic components (receiver, CD player, cassette deck, and so forth) with good cables. Nothing fancy is required, mostly good shielding and solid connection of the cable itself to the plugs at each end. The cables that come in the boxes with the equipment



ment with varying amounts of attention to internal shielding, but there are some things *you* have control over. Preventing and eradicating RFI start with attention to cables and connections. Think "clean signal path." As you track where the signal is coming from and where it is going to, examine the quality of your cable. Look for surface corrosion at the point of cable connection—the plugs at the ends of your patch cables and the jacks on the back panels of your components. A standard pencil eraser or very fine-grade sandpaper will usually restore the shine to those metal contact points. If your cables are old and stressed, toss 'em and buy some new ones.

If you can isolate the cause of the interference (perhaps a nearby light dimmer) and do something about it, you're in luck. Otherwise, once you've located the point of injection, you'll have to treat the equipment. Cleaning, grounding, shielding, and inserting filters, capacitors, and traps are common cures. Occasionally something as simple as reorienting or moving the afflicted component will help. One warning: Contact the manufacturer's service department before whipping out the old soldering iron. You could damage your component (service departments have tons of documentation on the subject). If you are suffering from RFI, the trick is to identify the source and then isolate the point of entry into your system. Once you know this, a qualified service technician should be able to help you cure it.

### Speaker Wiring

Hooking up speakers is also pretty straightforward. Use continuous runs of stranded, insulated copper wire. Usually, 16-gauge lamp cord from the hardware store is just fine, but long runs may benefit from heavier 14- or 12-gauge wire to keep the series resistance between the amplifier and speakers low. If you need to put wire under a carpet or up a wall, some companies make flat cable that can be run inconspicuously and painted over if necessary. To minimize opportunities for RFI, avoid splicing speaker cables together. Another no-no—or, at least, something that should be done only with great care—is putting metal staples or nails through speaker cables. If you short the two sides of the cable together, you could nuke your amplifier or receiver.

For the same reason, be careful when connecting the ends of the wires to the amplifier and speakers. Don't let strands from one conductor touch those from another. To get proper bass response and stereo imaging, your speakers must be wired in phase. That means the positive (+ or red) terminal of each speaker output on the amplifier should go to the positive terminal on its associated speaker; similarly, negative (- or black) goes to negative. Most dual-conductor cables have a ridge or stripe down one side to help you keep straight which is which.

A long run of speaker cable can act as an antenna. Don't coil extra cable—shorten the wire instead. If you've tracked an RFI problem to the speaker leads, try rerouting, shortening the distance, running a braided-metal shielding sheath over the entire length, or wrapping the wires in aluminum foil.

### Antenna Placement

What about the RF you *do* want to receive—radio broadcasts picked up by your tuner? If you're getting a poor FM signal from a cable system, there's not much you can do except complain. Ideal off-the-air reception for FM is line-of-sight, meaning there are no obstacles (buildings, mountains, etc.) between the tower and your antenna. Things are not always so perfect, however. For example, if you live in a Manhattan apartment building, you're probably receiving a series of closely spaced reflections bounced from and between nearby structures. The same

is true if you live in a canyon or even a valley. The duplicate signals arrive at your antenna at slightly different times, causing distortion, a condition known as multipath.

The key to good FM reception is getting a single strong signal from the tuned station, and that usually requires orienting an antenna in the proper direction. The best antennas are multi-element arrays mounted outdoors on a mast. Most people, however, make do with the T-shaped wire dipole that came in the box with their tuner or receiver. There is seldom any absolutely right way to position any antenna for all situations. There are, however, lots of wrong ways. Do not staple the antenna to anything, as you run the risk of shorting the two plastic-enclosed leads. Also, a fixed orientation may give you reasonable reception for a few stations, but not all. Probably the most sensible way to set up a dipole is to spread it out behind the receiver and adjust it for good reception of the stations you listen to most. That makes readjustment reasonably easy when necessary.

If you are having reception problems with a regular dipole, try using one of the many powered FM antennas on the market. They are relatively inexpensive and can be helpful in some situations. Just make sure you can get a refund in the event your reception doesn't improve. But before you spend the money, try one little trick: Sometimes if you disconnect one of the antenna leads from the receiver or tuner, you'll get a clearer signal.

### Lightning: Expect the Unexpected

Lightning is common in many parts of the country. Nowhere is it unknown. As unlikely an event as it seems, you just never know where or when it will strike. A year ago we were in our backyard patio, watching the rain, when our neighbor's tree was hit by a bolt and exploded, taking out her power and our alarm system. There I was, with a garden hose, on the house in a lightning storm, trying to douse the flaming branches landing on the roof. Lightning doesn't even have to hit close to you to do damage. It can travel down power lines and zap anything plugged into the wall. Moral: Practice safe stereo—put surge protectors between all your electronics and the AC outlets powering them. They won't always save you, but sometimes is better than never. □

**OCCASIONALLY,  
MOVING OR  
REORIENTING A  
COMPONENT  
WILL HELP GET  
RID OF RF  
INTERFERENCE.**

# DIGITAL CHAOS

## IS DIGITAL AUDIO HEADING TOWARD DISASTER ON THE SUPERHIGHWAY?

**T**he digital audio and video industries are driving recklessly toward technological problems that stand a good chance of becoming insoluble if they continue to be ignored much longer. What's at stake is the survival of high-quality audio and video in the age of digital program-delivery systems, from the DSS small-dish satellite TV system to digital VCR's, digital radio, high-definition television (HDTV), and the proposed information superhighway (the NII, for National Information Infrastructure).

Plans for all of these systems call for extensive use of "data reduction" to encode digital audio and video signals. This process, often mistakenly referred to as data compression, reduces the number of bits needed to carry such signals. The reduction is performed by specialized microchips called coders. (For a basic explanation of how audio coders work, see "What Is Data Reduction?" on page 72.)

### Why Use Data Reduction?

Coders provide numerous technological and economic benefits. For broadcasters and cablecasters, the use of data-reduced signals greatly increases the number of stations that can be put on the air or carried over cable. Users of computer networks like data-reduced signals because they take less time to transfer, increasing a network's data capacity. Makers of audio and video equipment value the ability of coded signals to fit into smaller and more versatile storage media. Two examples near to the hearts of STEREO REVIEW readers are Digital Compact Cassette (DCC) and MiniDisc (MD) recorders, both of which contain audio coders. Without data reduction, MD machines wouldn't be so small and DCC machines wouldn't be backward-compatible with analog cassettes.

The temptations of coding are so irresistible that intense development work on audio and video coders has been going on for years at the research centers of such technological leaders as Dolby Labs and AT&T, universities across the country, and overseas consumer electronics giants like Philips and Sony. With the necessary computer power now available in microchip

form, this work is being embodied in professional and consumer products. In professional audio, use of coders is spreading, especially in radio broadcasting, which is where the first signs of digital chaos are showing up.

### Garbage In, Garbage Out

Last fall at a joint meeting of the New York City chapters of the Audio Engineering Society (AES) and the Society of Motion Picture and Television Engineers (SMPTE), Herb Squire of WQXR, the city's only commercial classical-music FM station, demonstrated to a flabbergasted audience the sonic effects of connecting multiple coding operations in series, known in the business as coder "chaining" or "stacking." The decoded output of one coder was fed to the input of another coder whose decoded output was fed to yet another coder, and so forth. The various recordings Squire played were tapes of the decoded outputs of several multiple-coder chains.

The sonic changes wrought by such stacking ranged from none to innocuous to execrable. Among the worst problems Squire demonstrated were degradation of the stereo image, high-frequency "smearing," "flutter" on sustained notes, brittle-sounding transients, program-related "beat tones" and "birdies," vinyl ticks turning into chirps, and swishing background noises. Not all stacked-coder hookups produced such bad-sounding results. But many did, and most of them were typical of hookups used in the day-to-day operations of radio stations and radio networks.

The worst characteristic of these degradations is their *unpredictability*: Without actually trying it, you generally cannot tell when a typical music or voice signal will be audibly degraded, or by how much, by feeding it through stacked coder systems. It's even difficult to predict whether a sound will be degraded by a single pass through only one coder. A multiple-coder hookup may sound fine most of the day until one difficult-to-code saxophone note happens to cause a drastic breakup of the signal. Woe to the radio station if that note is part of a sponsor's jingle. What is absolutely certain,

PHOTO BY DENNIS POTOKAR

BY DAVID DRANADA





DO NOT

ENTER

TAXI

NOT A  
ROUGH  
REET

NO  
OUTLET



## WHAT IS DATA REDUCTION?

We cannot hear every sound that hits our eardrums, nor can we perceive everything that gets focused on our retinas. You can't hear a nearby whisper while standing on a runway underneath a Concorde taking off even though the air still carries the whisper's vibrations. Likewise, you can't see the really fine details of a moving object even though a slow-motion camera can.

Psychoacoustical coding, the umbrella term for audio and video data reduction, takes advantage of such human limitations by reducing the amount of data needed in a digital audio or video signal to preserve the *perception* that it is supposed to produce when converted back to the analog domain. Ideally, a coded signal would contain only the minimum amount of data necessary to do this—the whole truth and nothing but the truth. In practice, there is usually a safety

margin between the perceptual minimum (which constantly varies) and the actual amount of data carried by a coded signal (which, for various technical reasons, usually must flow at a constant "data rate").

audio coder analyzes an incoming digital audio signal and decides what is and is not audible on the basis of the coder's built-in "perceptual model" of human hearing. Perceptual models can differ widely between coders, and a model's sophistication (or lack of it) is in part responsible for the "sound" of a coder.

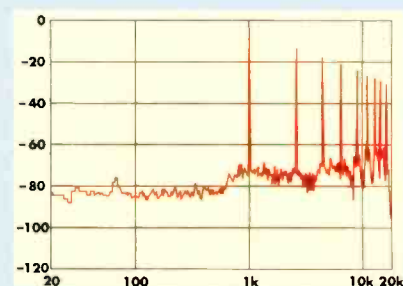
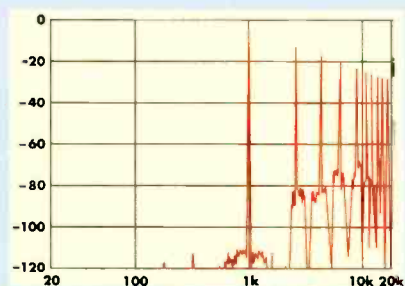
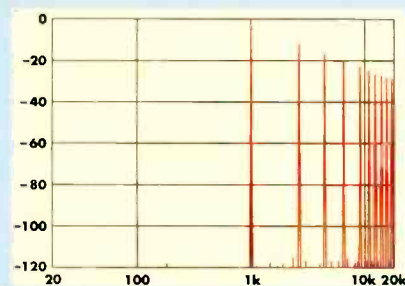
The coder's subsequent calculations are designed not so much to *remove* sounds that are deemed inaudible as to *preserve* the surviving components with as little data as possible. Most coding "gain," the ratio between the original and coded data rate, comes from the latter process.

Using fewer digital bits to represent an audio signal always increases that signal's noise and distortion levels on playback. Psychoacoustical coding, however, is supposed to distribute such "artifacts"

between incompatible coding formats—without decoding one format to "plain" digital audio (like the signal at a CD player's digital outputs) and re-encoding that into another format—is difficult at best and totally impractical once there are more than a couple of formats to convert between. So multiple-coder hookups always take the decode-recode route, a route almost guaranteed to degrade the sound as one coder's artifacts are misconstrued by the next coder as must-preserve signals.

The graphs below show how one pass through a PASC or ATRAC coder adds artifacts to a test signal. The original waveform produces a spectrum with only vertical lines running all the way down to the bottom of the graph, representing harmonics of its 1-kHz fundamental tone. The artifacts that PASC and ATRAC add to the original signal

LEVEL (DECIBELS)



FREQUENCY (HERTZ)

The effects of feeding a square wave (its original spectrum is shown in the graph at left above) to a first-generation DCC recorder (middle) and to a second-generation MD recorder (right). Both recorders' coders produced changes in the square wave's spectrum. To eliminate analog-to-digital conversion as a potential source of error, the signals in this test were kept in the digital domain from the test tone through the recorders to the spectrum analyzer that generated the graphs.

margin between the perceptual minimum (which constantly varies) and the actual amount of data carried by a coded signal (which, for various technical reasons, usually must flow at a constant "data rate").

The fundamental principle behind psychoacoustical coding is that of "masking": the perceptual obscuring of one sound (the whisper) by another (the Concorde). If you can't hear the whisper you don't have to record it, and the data representing it and all other masked sounds can be removed from a digital recording of the flyby with no audible consequences. An

underneath the preserved audio so that on playback the audio portion of the data-reduced signal will always mask its own accompanying noise.

Careful distribution of artifacts makes it possible to achieve very high audio fidelity with a quarter of the original CD data rate (DCC's PASC coder) or even close to a fifth of it (MD's ATRAC). Dolby's multichannel AC-3 coder has an even lower per-channel data rate. Different coders have different data rates because they use different psychoacoustical models and have different safety margins. Direct digital conversion

spectrum as the result of the data reduction are quite obvious. PASC's are low enough in level not to be audible behind the signal. ATRAC's artifacts add a slight roughness to the sound of the square wave, an effect so subtle that most listeners won't notice it unless the original test tone is available for comparison.

But these graphs show what you get with only a single pass through good coders. Some are far worse. And when you start hooking them up in series the artifacts that used to be masked by the music may emerge in all their distorted glory. —D.R.



however, is that the final signal can be only as good as the worst coder it has passed through.

Recording off the air with an MD or DCC machine adds yet another coding cycle to the chain. There have been reports of MD and DCC machines producing sonic degradations when recording certain network radio broadcasts. It's possible that users of these machines are experiencing stacking effects at first hand.

If you have access to both an MD and a DCC machine (or two of either type), you can conduct stacked-coder experiments yourself by repeatedly recording a signal back and forth between machines. Use either the digital or analog connections and try lots of different types of music.

### Dead Ends

If there were only one type of audio coder, the stacking problem wouldn't loom nearly as menacingly. With a standardized coder system, repeated encode-decode operations wouldn't be necessary. The initial coding would survive intact through all intermediate stages of transmission to be decoded only at the last moment. For now, that means right before normal AM or FM radio transmission; in the future the original coding would be retained right through to the listener's digital receiver and even to a home digital recorder.

Unfortunately, this scenario is unlikely, for in some areas it may already be too late to standardize. As Squire pointed out, the differing technical requirements and capabilities of various signal links have led to coders that are optimized for particular applications. One coder might be better suited to a microwave studio-to-transmitter link, another to standard phone-company digital data lines, yet another to satellite distribution.

In other fields, the haphazard introduction of coders is accelerating. The HDTV Grand Alliance has already chosen Dolby's AC-3 coder system to carry multichannel soundtracks. AC-3 itself differs substantially from DCC's PASC and MD's ATRAC, and all of them differ in varying degrees from the coder proposals for digital radio and from the coder already embedded in the DSS satellite-TV system. The question is not whether audio quality will suffer if it passes through more than one of these media—it will. It's just impossible to predict how often and by how much. Digital chaos!

Compared to the resources poured into coder development, practically nothing has gone into studying stacking, although it has long been recognized as a potential problem. Hierarchical coder schemes have been developed that allow a single decoder to decode signals encoded at different data rates and at varying sound-quality levels. For example, DCC's PASC coder is a member of the Musicam coding hierarchy. Another Musicam derivative was proposed for HDTV, but after testing it was rejected in favor of Dolby's AC-3. Musicam still has a hope with digital radio.

Moreover, everything said here about audio coders also applies to the stacking of video coders, which are at the heart of digital VCR's, all-digital laserdiscs, HDTV broadcasting, and a wide variety of computer-related video media. Video CD's, for example, will use a version of MPEG-I video coding that is supposed to supply "VHS-quality" pictures (talk about underachievement!). Still, the video field has the advantage of fewer competing coding systems, at least for the present.

### Setting Standards

Like it or not, the only way to avoid the chaos caused by the continued introduction of new coder systems is some degree of standardization. There are several ways this can be accomplished:

- **By free-market forces.** We could simply wait around for all the designed-in and proposed coding systems actually to come into use. We would then have a wasteful and confusing format war that would make VHS vs. Beta look like a mere difference of opinion. Business-as-usual free-market forces have led us to the brink of digital chaos in the first place.

- **By technological consensus.** Engineers could be made to agree on standards or to come up with workable compromises—if they were freed from, among other things, their employers' "not invented here" syndromes. America's unjustly maligned NTSC color-television system was actually as outstanding a piece of collective engineering as one hopes the Grand Alliance HDTV system will be.

- **By universal hardware.** There's no technical reason why reduced-data decoder boxes cannot be made universal, capable of decoding several types of coded signals. This wouldn't sound so unattainably utopian if the number of

different coders were somehow restricted. In that case, home recorders could become general-purpose "bit buckets" used merely to store coded data. Decoding into audio or video would take place in a separate multi-standard decoder.

- **By government edict.** If the National Information Infrastructure is to mesh seamlessly with data/program providers and with other digital networks and media, and if access to the NII is truly to be open to all, there must be some federally mandated coder standardization for it. At the very least, the consumer should not have to bear the expense of multiple decoders.

But in the Clinton Administration's two most public descriptions of the NII (statements released by Vice President Gore's office last September 15 and on January 11 of this year), there is not a single word concerning sound or picture quality, and hardly a word about technical standards of any kind. All the talk is about deregulation and free-market competition.



Who among us would want the NII—which should become a source of national pride—deliberately to use inferior coding systems? Artists and musicians whose digitized works will flow over the NII also deserve to know that they will emerge intact.

Not that the government itself should set standards: It need only require that coding standards be set, possibly by technological consensus on a very small set of coders. As an example of the difference that standards can make, just compare stereo FM, where there is a national stereo-encoding standard, and the mess that is stereo AM, where there is none.

Whichever roads toward standardization are taken, it is clear that if digital audio and video coding practices proceed on their present course, signal quality will suffer. The comparatively minor Copy Code brouhaha of a few years back demonstrated that audiophiles must remain vigilant and vociferous if quality is not to take a back seat to economics and politics.

We must insist that when order arrives it will preserve the highest audio and video quality. If we do, we may eventually be able to look back on the present chaos as actually beneficial, having shocked the audio, video, and data industries into realizing that the technology was moving too fast for its own good. □



**Odd as it may seem, most speaker companies don't make their own drivers, the fundamental components that produce the sound.** Instead, they assemble their systems using other peoples' parts. Then, they try to compensate for the inevitable deficiencies and mis-matches.

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Concept 6 cabinets from Ethan Allen's American Dimensions collection, shown in natural maple, have fabric-covered speaker compartments. The center video unit accommodates a 35-inch TV.

# A/V FURNITURE HITS THE BIG TIME

Finding a home for audio equipment is relatively easy. Clear a space on a shelf or table top, pick up a couple of those "designer" milk crates, or spring for an audio rack that matches the decor of your listening room—from hardwood cabinets with smoked-glass doors to simple vinyl-coated wire racks, there are many to choose from. But cabinetry gets more complicated when you combine audio and video in

one system. There's more wiring to conceal, and you have to find a place for the TV, the VCR or laserdisc player, and possibly a center-channel speaker and subwoofer.

The idea of grouping audio and video components together in an attractive wall unit or entertainment center is nothing new. You've probably seen A/V cabinets loaded with fake components in department stores and furni-

**Can't get the idea of home theater past your front door? Check out what's happening at the furniture store.**

BY REBECCA DAY



RCA's 800 Series home theater package, top, includes custom wood cabinetry from LADD Furniture's American Drew division, an RCA 60-inch projection TV, and various RCA audio and video components.

Pennsylvania House's Model 32-1619 home theater center, shown above and left in hunter green, has a ventilated 40-inch TV compartment and a wealth of storage space.

The close-up shows its adjustable component shelves and eight sliding storage drawers.

ture stores. Unfortunately, some of what you saw probably wasn't designed to accommodate a big-screen TV, let alone a center-channel speaker. In the past year or so, however, furniture makers have responded to the home theater call with a new generation of A/V cabinetry that not only accommodates big-screen TV's and speakers but provides a host of A/V-specific features as well—from built-in power strips and infrared repeaters to wire-management devices, lighting, and more.

This furniture awakening is great news for anybody who has shut the door on home theater because of the network of speakers and electronics that's required. Now that big-name furniture companies are taking the category seriously, it's possible to conceal a complete surround-sound A/V system—patch cords and all—in an elegant wall unit.

Walk into an Ethan Allen emporium or your local furniture store these days and there's a good chance you'll see *real* components—receivers, TV's, and speakers—in A/V cabinets that are made to order. While most of these displays are for show, a few electronics makers are actually selling home theater equipment through furniture outlets. RCA, for example, recently linked up with LADD Furniture to offer home theater systems that include custom-made American Drew cabinetry. Mitsubishi has a similar arrangement with Pennsylvania House.

Other affiliations have been set up for display purposes. The Lane Company, for example, is using Sony projection TV's to showcase its line of custom-built home theater cabinetry on retail floors. If you have trouble luring your spouse into an audio/video store to check out the latest home theater gear, the furniture store might be less intimidating. That's what Sony's betting on, at least.

While these arrangements involve cabinetry that is custom-built to accommodate specific components, furniture makers also understand the importance of offering cabinets that suit a wide variety of TV's and A/V components. Jasper Cabinet Co. and Denon have a mutual display agreement, for example, but Jasper executives are quick to point out that the company's Encore! line of traditional wall units and armoires is designed to accommo-



date equipment from most electronics manufacturers.

The Encore! line is built around a video cabinet that accepts 35-inch TV's and has a fabric-fronted compartment for a center-channel speaker (a solid wood door is available for those who want to skip the center channel). Three-piece Encore! wall units—available with either solid wood or glass end-cabinet doors—have several special A/V features including a built-in power strip, a ventilated back panel with cable slots, and a wire-management "clip" for organizing cables.

The Encore! lineup also includes a cabinet designed specifically for rear-projection TV's with screen sizes up to 53 inches diagonal. There is no back panel, so the TV can extend to the wall if necessary, and you can get trim kits that let you customize the opening for sets with smaller screens. Adjustable shelves above the TV can be used for a center-channel speaker or to store CD's and tapes; the shelf supports are even padded to absorb vibrations. Like all Jasper video cabinets, the unit has pocket doors that slide into the cabinet when the TV is on.

A couple of progressive options are available to Encore! buyers: a Panamax surge protector (\$190) and a Xantech infrared repeater (\$190). The repeater is useful if you want to be able to operate audio equipment via remote control even when the cabinet doors are closed; a 1/2-inch infrared "eye" mounts on the outside of the cabinet.

Jasper cabinets are available in solid cherry and oak, and prices range from \$3,000 to \$4,000 for armoires and from \$7,000 to \$7,500 for three-piece wall units.

Thomasville, one of the first traditional furniture makers to offer home theater cabinetry, has broadened the scope of its A/V offerings. Several years ago, the company joined forces with Philips to market cabinets filled with prescribed Philips components for customers in search of hassle-free home theater. While these \$10,000 to \$12,000 one-stop-shopping systems are still available, Thomasville now also offers a more affordable line of cabinets under the Home Theater Combinations banner for people who want to choose their own electronics.

Thomasville's A/V features include speaker compartments covered with acoustically transparent fabric, a ca-



Available through builders and custom installers, RCA's top-of-the-line 900 Series home theater package includes an in-wall version of its 60-inch rear-projection TV, two in-wall cabinets, an A/V receiver with Dolby Pro Logic, a laserdisc/CD combi-player, a stereo VCR, five in-wall speakers (three shown), and a subwoofer.



Bell'Oggetti's stylish WU-840 Ercole System features powder-coated metal frames and tempered-glass or perforated-metal shelves. The arrangement here combines two full units and a half-height TV stand for sets with a screen size of up to 35 inches.

Overall dimensions are 107 x 60 x 20 inches.



PHOTO: JEFF MCNAMARA

**Top left: The Model 9-100 Video Armoire, part of Jasper's Encore! line, has eighteenth-century styling and holds a 35-inch TV.**

**Top right: Techline's HT8480-25 cherry-veneer cabinet grouping is shown with optional speaker grilles (top corners) and glass doors.**

**Above: An oak cabinet grouping from Mary Emmerling's American Country West collection features fabric-covered speaker compartments; available from Lexington Furniture Industries.**

ble-box compartment, a built-in power strip, pocket doors for the TV compartment, and a perforated back panel. The cabinets also have adjustable shelving and storage compartments with pull-out trays for audio and video tapes and discs, and they can be ordered with a pull-out TV shelf that swivels. Thomasville offers five styles—from traditional Queen Anne to contemporary—and five configurations designed for 27-, 31-, and 35-inch TV's. Prices range from \$2,000 to \$8,000.

Hammery Furniture recently redesigned all of its wall units to accommodate 31-inch TV's. It is also offering a home theater grouping with a video cabinet that accepts a 35-inch TV; included are two audio cabinets, each with a speaker compartment, a built-in power strip, and a heat vent (to help amplifiers keep cool). The home theater cabinets are available in eight woods and finishes, including cherry, ash, and oak; prices start at \$1,800.

Pennsylvania House offers about twenty A/V cabinets, several of which are designed to accommodate specific Mitsubishi big-screen TV's, including the 40-inch direct-view set (the largest direct-view TV on the market) and two rear-projection sets—a 45-inch tabletop model and a 60-inch model. Highlights include speaker compart-

ments with cloth grilles, adjustable shelving, storage drawers with pullout trays and removable dividers for tapes and CD's, and a power-strip/wire-management device. Prices for the Pennsylvania House A/V cabinets start at \$2,000.

**S**ome Pennsylvania House dealers sell prepackaged sets of Mitsubishi equipment—for customers who'd rather leave the electronics decisions to someone else. The RCA and LADD Furniture program mentioned earlier is similar but more flexible, allowing customers to choose from a variety of American Drew cabinets and various configurations of RCA TV's, audio components, and speakers. There are three series of RCA Custom Home Theatre combos, each available in furniture styles ranging from traditional to contemporary.

The top-of-the-line 800 Series offers the choice of a 60-, 52- or 46-inch rear-projection TV or a 35- or 31-inch direct-view TV, plus a Dolby Pro Logic receiver, a combination laserdisc/CD changer, a hi-fi VCR, five speakers, and a subwoofer. The 600 Series subtracts the combi-player and subwoofer, and the 400 Series subtracts the receiver, speakers, and rear-projection TV. System prices range from \$2,000 to \$10,000, including cabinets



equipped with infrared repeaters and fabric-covered speaker compartments.

RCA also sells built-in custom home theater packages through builders and custom installers. These include a flush-mount TV, a suite of audio components, and RCA's Video Acoustics in-wall speakers—all housed in special in-wall cabinetry.

While much of the recent attention given to A/V furniture focuses on traditional furniture makers, many of whom are just now discovering the category, the familiar names in ready-to-assemble A/V cabinetry have been hard at work, too.

Custom Woodwork & Design (or CWD), for one, is offering a "telescoping bridge" cabinet in its Bradley Towers line. The patent-pending bridge (\$475) adjusts to the width of rear-projection TV's with screen sizes between 45 and 60 inches—flexibility is a must if you have a penchant for upgrading. The bridge is available in natural, whitewashed, black, or pickled oak as well as cherry and black finishes. CWD has also added occasional tables to complement its Rialto Southwestern-style entertainment center, which is available in cherry and mahogany finishes. Prices for the

remote controls into one handheld unit. Even that solution is only a partial one, though—there's still a remote on the table. Several "motion furniture" companies—England/Corsair, Peop-Loungers, and Franklin Corp.—think they have a better solution: Take the remote off the coffee table altogether and put it in a storage pocket built into a reclining chair. Some of the recliners also have built-in drink trays.

England/Corsair has taken the concept even further with its line of armless recliners featuring wedge consoles that fit between chairs. Perfect for inveterate couch potatoes, the wedge is a hinged, 5-inch-deep console with a built-in phone jack and plenty of space for remotes. A four-seat grouping with two wedges sells for \$2,349.

And then, when you win the lottery, perhaps, you might consider the ultimate home theater, that "true" theater some of us fantasize about building at home—maybe a mini version of the vaudeville theaters of yesteryear? Theo Kalomirakis, owner of Theatre Design Associates (TDA), had such a dream and acted on it by developing a line of plush theater environments with the affluent movie buff in mind.

## You can conceal a complete surround-sound A/V system—cables and all—in an elegant wall unit.

cocktail and end tables range from \$350 to \$400. It's a safe bet that CWD will offer a complete A/V package in the near future now that it's a sister company to Rotel and B&W, so stay tuned.

If "traditional" furniture, especially "traditional" A/V furniture, is simply not up your alley, check out the offerings of Bell'Oggetti, which specializes in contemporary glass-and-metal A/V racks that hold up to eighteen components and a 35-inch TV. The stylish racks feature a high-impact powder-coat finish and are available with either perforated metal or tempered safety-glass shelves. Bell'Oggetti's four ready-to-assemble wall units are priced from \$1,400 to \$1,800.

When universal remote controls first hit the scene, there was a lot of talk about "coffee-table clutter." Universal remotes, of course, were designed to alleviate that clutter by consolidating the functions of several re-

TDA's modular, ready-to-install theaters, in Art Deco, classic, traditional, and contemporary styles, seat from six to twenty-five people and are designed for rooms measuring from 12 x 21 feet up to 15 x 31 feet. The theaters typically include a box office with a neon marquee, concession stands and lobbies with vintage movie posters, motorized curtains, sconces, seats, and lighting controls. Prices—hold on to your popcorn—range from \$19,000 to \$64,000, and that's before you buy even a watt's worth of equipment.

But you don't have to wait until you win the lottery to win over a reluctant spouse. The range of A/V furniture now available can appease even the most ardent designer without offending even the most ardent A/V enthusiast. From traditional to contemporary, affordable to unimaginable, there's something for almost everyone. Just put the furniture store on your home theater shopping route. □



**Top:** Thomasville's Winston Court cherry cabinet grouping has pull-out storage shelves. **Middle:** Hammary's VideoCenter TV cabinet is flanked by two audio pier cabinets, each with a built-in power strip. **Bottom:** CWD's Rialto Theater System, shown in cherry, can hold a 35-inch TV; the top compartment of each side cabinet is available with glass panels or grille cloths as shown.

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It used to be simple. You had a car. It came with a radio. You listened. Period. Now you've got options. So many options, it's easy to get blown away just trying to find components that fit together—and fit your budget too. So what do you do when it's time to upgrade your car stereo?

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# BEST OF THE MONTH REVIEWS

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

## Eugenius: Journey to the Center of Your Mind



PHOTO: ATLANTIC RECORDS

**S**yd Barrett lives! Actually, a Scot named Eugene Kelly, who sounds amazingly like Barrett, and his band, Eugenius, have resurrected Barrett's trippy, popadelic sound with early Pink Floyd on their new album, "Mary Queen of Scots." Kelly's band has changed names a few times (the Vaselines, Captain America), which might explain why Eugenius is not yet a household name despite having been en-

dorsed by no less a fan than Kurt Cobain of Nirvana. But the foursome puts together enough innocence, imagination, and cunning to make a "Piper at the Gates of Dawn" for the Nineties—and that, to my mind, qualifies them for sainthood.

In the Sixties, people would have called "Mary Queen of Scots" a headphones album—one to contemplate and savor as it transports you to some exotic wonderland as evocative as anything

Lewis Carroll ever conjured up. Its mood of airy altered consciousness derives primarily from Kelly's boyish baritone and the squiggly rush of the band's guitars, particularly on the solos. In *Pebble*, the guitars burn like a field of neon in a hypnotic drone on what sounds like one seriously distorted chord; in *On the Breeze* they squeal like some amplified insect from the prehistoric past. On top of it all, Kelly and Eugenius rock with a youthful abandon that even the nascent Pink Floyd was a tad too cerebral to attempt. Fans of unfettered pop surrealism will rejoice while ascending the stairway to heaven that Eugenius constructs—with a Cheshire-cat grin—on "Mary Queen of Scots."

Parke Puterbaugh

### **EUGENIUS**

#### **Mary Queen of Scots**

*Pebble; On the Breeze; Blue Above the Rooftops; The Moon's a Balloon; Mary Queen of Scots; Easter Bunny; Let's Hibernate; Friendly High; River Clyde Song; Tongue Rock; Home Sick; Fake Digit; Love Bread and Beers*  
ATLANTIC 82562 (51 min)

## Järvi's Outstanding Shostakovich

**N**eeme Järvi's survey of Shostakovich's last five symphonies with the Gothenburg Symphony Orchestra on Deutsche Grammophon is nearly completed, and the latest installment is by all odds the finest yet—not only the capstone of his Shostakovich cycle but possibly the outstanding item to date in this busy conductor's apparent attempt to record the Complete Works of Everybody.

The Fourteenth Symphony, for soprano, bass, and an orchestra comprising only strings and percussion, is presented here with an especially apt discmate, Shostakovich's orchestral setting of Mussorgsky's *Songs and Dances of Death*. Shostakovich himself was the first to point out the numerous connections be-

# BEST OF THE MONTH REVIEWS

tween these two works. He orchestrated the Mussorgsky cycle for the soprano Galina Vishnevskaya in 1962, and seven years later she sang in the premiere of the Fourteenth Symphony, which sets poems on this same basic subject by Garcia Lorca, Apollinaire, Küchelbecker, and Rilke.

Järvi does not use the same singer in both works but assigns the Mussorgsky cycle to Brigitte Fassbaender, whose rich mezzo conveys more of the music's dark quality than most sopranos since Vishnevskaya are likely to, and the soprano part in the symphony is sung by Ljuba Kazarnovskaya, whose name is new to me but who seems another inspired choice—as does her companion, the splendid bass Sergei Leiferkus.

It would be hard to think of another singer today—male or female. Russian or Western—more fully attuned to the Mussorgsky songs than Fassbaender, or to imagine a more successful partnership than hers with Järvi. But Leiferkus and

Kazarnovskaya interact with each other and Järvi on the same level in the symphony, clearly relishing the poignancy, bite, and contrasts Shostakovich provided for them.

In sum, neither work has had more effective advocacy in a recording, and the engineering team—the same people responsible for many of Järvi's Bis recordings—have surpassed themselves as strikingly as the performers, placing the voices in just the right balance with the orchestra and achieving a level of overall vividness that beggars description.

*Richard Freed*

#### SHOSTAKOVICH:

**Symphony No. 14**

#### MUSSORGSKY

(orch. Shostakovich):

**Songs and Dances of Death**

Fassbaender, Kazarnovskaya, Leiferkus:

Gothenburg Symphony, Järvi

DEUTSCHE GRAMMOPHON 437 785 (73 min)



Conductor Neeme Järvi

## Sir Douglas and Friends Rock Out

**D**oug (Sir Douglas) Sahn has been a mainstay of Tex-Mex pop for so long, both on his own and as a member of the Texas Tornados with Freddy Fender, that it's easy to forget he first claimed attention in the guise of a British Invasion-style rocker. Sahn's original Sir Douglas

Quintet, which hit in 1965 with *She's About a Mover*, was as proto-punk as anybody back then—organist Augie Meyer's rinky-tink stylings were later appropriated whole for Question Mark and the Mysterians' *Ninety-Six Tears*, and punkier than that one does not get.

Now the classic garage-band side of Sahn is on display again. "Day Dreaming at Midnight" is anything but a Tex-Mex record; instead, it could easily be the work of some vaguely rootsy alternative act cruising on pure adrenaline. With Meyers's distinctive Farfisa sound and rock-solid rhythm work by ex-Creedence drummer Doug Clifford (who also produced), the reconstituted quintet storms through a bunch of Sahn originals that he bellows out in his best gruff James Brown manner. And while the sound is right up to date, the spirit is pure 1965.

The songs are bluntly funny (*Dylan Come Lately*), occasionally poignant (*Twisted World*), and even mildly psychedelic (*You Don't Know How Young You Are*). Throughout, the seriously loud metallic guitars of Sahn, his son Sean, and Nashville wiz John Jorgenson do some serious noise-making, and you can almost see Sir Douglas grinning above the racket. "Day Dreaming at Midnight" may not be profound, but it's a genuine pleasure.

*Steve Simels*

#### SIR DOUGLAS QUINTET Day Dreaming at Midnight

*She Would if She Could, She Can't So She Won't; Twisted World; Darling Deloris; Day Dreaming at Midnight; Into the Night; Dylan Come Lately; Too Little Too Late; You Don't Know How Young You Are; County Line; Romance Is All Screwed Up; Freedom Is Mine; Intoxication*

ELEKTRA 61474 (48 min)

## A "Don Giovanni" for Our Time

**I**t may not be too much to say that Roger Norrington's brilliant and unconventional new EMI recording of Mozart's *Don Giovanni*, coming after an almost equally remarkable *Magic Flute*, propels him out of the gilded ghetto of Early Music and into a commanding position as one of the outstanding conductors of our day. Although some of the great performers of the past were associated with this work, it has always been a conductor's opera. Norrington is a master of traditional musical and operatic values, but he has also rethought this masterpiece in a way that is startlingly yet



PHOTO: DEUTSCHE GRAMMOPHON

PHOTO: JOHN HALPERN/ELEKTRA RECORDS



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# BEST OF THE MONTH

true to its historical roots, vividly alive, and almost completely successful.

There are many reasons why this *Don Giovanni* is both a reevaluation and a revelation. For starters, the work is just right for a Mozart-period orchestra like Norrington's London Classical Players. The instruments are lighter in sound and more graceful than modern instruments, and they balance well; the style of playing—phrasing, bowing, accents, and so forth—is exactly the style set forth by Mozart's father, Leopold, in a famous treatise. When this kind of thing is done right, as it is here, there is no loss of expression; quite the contrary, the expression is built in, internalized, instead of being applied from the outside in the Romantic manner. The balanced arrangement of the players, with the conductor in the middle, leading from a fortepiano, is also just right.

There's more. The orchestra is tuned to a low A = 430 Hz, rather than the modern 440 Hz, producing a mellow orchestral and vocal sound and giving the singers more ease in their top registers. The tempos are unusual, too. For instance, Norrington adheres to the notion that "andante" means "moving right along." There are almost no slow tempos, a lot of fast tempos that move like quicksilver, and a few fast tempos that are slower than usual. These departures from convention are surprising, but they all have a Mozartian logic behind them.

Most important, the singing style is also right—flexible and florid, light and witty, without much vibrato and without most of the plushy support and projection that modern opera singers prize. This Classical style of singing suited the smaller theaters of Mozart's day, and it can be easily heard over the lighter orchestral sound here.

Conductor Roger Norrington



TREVOR LEIGHTON/EMI CLASSICS

Norrington's use of a young, non-star-studded cast obviously has an artistic point. The voices are fresh, and the performers are at ease in this musical and dramatic world. Their Italian is uniformly excellent, and their phrasing, vocal color, and *parlando* play off of the language in the same way a Mozart-period violin bow bounces buoyantly and gracefully off of gut strings. The ornaments are graceful and have an expressive or improvisational feel that takes away the holier-than-thou feeling that reverential performers sometimes mistake for Classical style. Most surprising, especially for a recording that does not seem to derive from the stage, is that the performers achieve dramatic coherence in their recitatives, in the representation of character (through music, of course), and in their interaction.

Norrington, ever faithful to his musical roots but not hamstrung by them, has recorded all the music Mozart ever wrote for *Don Giovanni*, and the variants are presented in a very cunning manner. The CD's are set up so that you can program either the original (and much superior) Prague edition or the Vienna revision. All the repeated material here requires three discs instead of the usual two, so the set is expensive. That's just about my only negative impression; everything else—the recorded sound, the annotation, the chorus, the orchestral playing, the casting—is exemplary.

Oh, yes, the cast. This team effort would obviously not be effective without the individual and ebullient contributions of Andreas Schmidt and Gregory Yurisch as the Don and his servant Leporello, as well as John Mark Ainsley's aristocratic Don Ottavio and a vigorous and youthful Masetto by Gerald Finley. Amanda Halgrimson is a lighter-voiced Donna Anna than we are used to, but the role gains much from being de-Wagnerized (or de-Verdi-ized). Lynne Dawson's Donna Elvira occasionally shows a tight vibrato, but it gives personality to an ambiguous and highly original character. The contrast between the three leading women is completed by Nancy Argenta's down-to-earth Zerlina.

For anyone with open ears, this is a great *Don Giovanni*, perhaps the redefining performance of a generation.

*Eric Salzman*

## MOZART: Don Giovanni

Soloists: Schütz Choir of London; London Classical Players, Norrington  
EMI 54859 (three CD's, 195 min)

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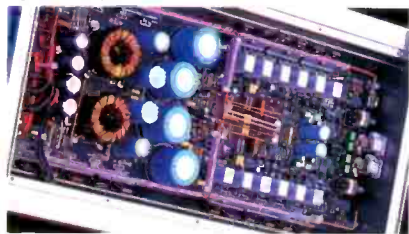
- **BACH: "Italian" Concerto; English Suite No. 2; Twelve Little Preludes; other works.** Igor Kipnis (harpsichord and clavichord). SONY 53263. "Splendidly forthright" (July 1971).
- **BRAHMS: Piano Sonata No 3; Ballades, Op. 10; other works.** Artur Schnabel (piano). RCA VICTOR 61862. "... almost miraculous, wholly revealing" (April 1972).
- **DOCKSTADER: *Quartermass*.** STARKLAND ST-201. *Apocalypse*. STARKLAND ST-202. Tod Dockstader's principal solo works, from the early 1960's, of *musique concrète*—voices, machines, toys, water, etc. taped, sliced up, and spliced together.
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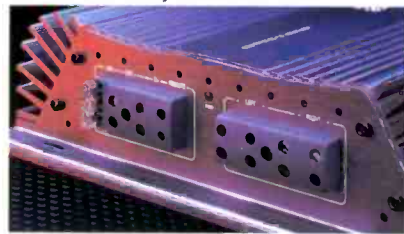


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# POPULAR MUSIC



**NEW RECORDINGS REVIEWED**  
**BY CHRIS ALBERTSON,**  
**FRANCIS DAVIS, PHYL GARLAND,**  
**RON GIVENS, ROY HEMMING,**  
**ALANNA NASH,**  
**PARKE PUTERBAUGH, AND**  
**STEVE SIMELS**



**TORI AMOS**  
**Under the Pink**  
 ATLANTIC 82567 (57 min)  
**Performance: Look at mel**  
**Recording: Very good**

**T**ori Amos, whose 1992 "Little Earthquakes" evoked exactly that, is a bright, introspective woman who spent her youth as a piano prodigy. Now, at thirty, she doesn't want you to forget any of that for an instant. Big on eccentricity for eccentricity's sake, she spends the time on her second piano-based, cabaret/classical album apparently trying to climb out of the box she put herself into for her video of *Silent All These Years*. But *Boxing Tori* is something Amos does very well, primarily in her dead-earnest bid to be the next Kate Bush.

Often dissonant, often pretty, but almost always lyrically obscure, "Under the Pink" reprises a couple of the same themes as "Little Earthquakes," religious pretension and sexual repression. In *God*, she chastises Him for not always coming through, and with the feminist edge that cuts through many of her songs (*Cornflake Girl* tackles the tribal ritual of mutilating girls' genitalia) she suggests perhaps He needs a woman to look after Him. And in *Iceicle*, this guilt-free protagonist masturbates while her parents say their prayers downstairs.

But there are big problems with this ambitious set, not the least of which is that while Amos is intensely emotional, her vocal and compositional style—breathy whispers escalating to fervid yips, thunder and lightning laid over melodies that start out fragile as flowers—rarely draws us in enough to care about either her plight or her passion. Amos is a huge talent, but in years to come, when she begins to exercise both poetic and musical discipline and concentrate on communicating with her audience instead of just showing off, this album will be an embarrassment. *A.N.*

**BLOOD ORANGES**  
**The Crying Tree**  
 ESD 80792 (44 min)  
**Performance: Lively**  
**Recording: Good**

**H**alfway between Richard and Linda Thompson and Timbuk3 lies a territory claimed solely by the Blood Oranges. On their latest album, "The Crying Tree," they till their fertile acreage like latter-day homesteaders with a sharp eye for love's blithe ironies ("Thank you for the memories I'm about to have," from the witty opening track, *Halfway Around the World*) and a sharp blade that cuts through anything that gets in the way of cold, hard truths. "You should be looking to the left / You should be lookin' to the right / You should be lookin' over your shoulder 'cause hell's half-acre's gonna burn tonight" goes the warning in the delirious punk-bluegrass reel *Hell's Half Acre*, a don't-get-mad-get-even epistle sung with relish by bassist Cheri Knight. And in songs like the title tune and *This Old Town*, they nearly make the ground shake from their gallows-humored face-downs with the fundamentals of existence. Having devised an ingenious musical alloy of bluegrass instrumentation, Appalachian folk harmonies, and hard-rock dynamics on earlier records, the Blood Oranges refine it to perfection on "The Crying Tree." *P.P.*

**THE BOO RADLEYS**  
**Giant Steps**  
 CREATION/COLUMBIA (64 min)  
**Performance: Like, wow**  
**Recording: Fine**

**T**here are studio bands and there are live bands, and some can do both things well. Unquestionably, the Boo Radleys' métier is the studio. They are disciples of that time and place (late Sixties/early Seventies) when musicians aspired to create unified albums that couldn't possibly be duplicated on the stage. Indeed, they aim for the stratospheric likes of the Pretty Things, the Small Faces, the Zombies, Todd Rundgren, the Beatles, and others who made giant steps in the art of recording whole-is-greater-than-the-sum-of-the-parts song cycles. Every song on "Giant Steps" is like a turn of the kaleidoscope yielding some startling acid-pop refraction. A squeal of feedback, filtered vocals, and light reggae accents give *Upon 9th and Fairchild* its strange charm. One song later, the Boo Radleys are making like doe-eyed, winsome-voiced posters on the strummy *Wish I Was Skinny*. Then they're tearing

your mind up with the loud/soft dynamic shifts of *Leaves and Sand*, only to leave you deliriously happy in *Butterfly McQueen*, a Garden of Eden for the ears with buzzing, bee-sting guitar. And on and on, through seventeen songs and an hour-plus of beautiful music. "Giant Steps" is a balm for the ears and a trip for the mind. *P.P.*

**COUNTING CROWS**  
**August and Everything After**  
 DGC 24528 (52 min)  
**Performance: Evocative**  
**Recording: Very good**

**G**ive me a smart post-adolescent with a flair for metaphor anytime. Right now, I'm thinking of Adam Duritz, the guy who writes all the lyrics (and a lot of the music) for Counting Crows. As much as I like the sound of this band—their mix of alternative, classic, and folk rock pleases me a



**The Boo Radleys: acid-pop heaven**

lot—I am even more impressed by the way Duritz writes. It seems trite to say that he understands the twenty-something mindset or that thinking rockers of his generation talk the talk about dysfunction. But Duritz walks the walk as well. He makes you feel his pain and confusion; he makes you understand how love can be a blessing and a threat at the same time.

"August and Everything After" takes on youthful anomie from the get-go with *Round Here*. The song starts with a bit of self-pity, shifts to a mini-drama about a depressed girl, and ends with a dead-on evocation of the slacker way: "Round here we're never sent to bed early / Nobody

MAH ANKER/COLUMBIA RECORDS



makes us wait / Round here we stay up very very very late." The wonder of this album is that nearly every tune on it can stand up to this opener. Duritz may over-write, but the gush of scenes, characters, and symbols is a pleasure to swim through. And he doesn't just sing, he *sings*. At times he may remind you of Michael Stipe or Van Morrison or Eddie Vedder, but only for an instant. What really counts is the way emotions come rushing and rolling and quavering out of his throat. "August and Everything After" is a killer. **R.G.**



**FLESHTONES**  
**Beautiful Light**

NAKED LANGUAGE 6116 (37 min)  
**Performance: Retro cool**  
**Recording: Good**

**T**he Fleshtones were the Standells of New Wave, supplying some much-needed garage-pop grease and scowling irreverence at a time when the scene was threatening to OD on zebra-stripe shirts and terminal cuteness. Those days are long gone, though, and the band is looking a little long in the tooth to pass for alternative torch-bearers. "Beautiful Light"—their first studio album since 1987's "Fleshtones vs. Reality"—does boast the hip cachet of a Peter Buck production, and he and fellow R.E.M.-er Mike Mills play here and there. But this is really do or die time, regardless of celebrity accomplices, and fortunately the Fleshtones rise to the occasion with a hunka-hunka burning blues/psych originals and enough garage-bred mustiness to keep things honest. Singer Peter Zarella is no Sinatra, but he gets by on outer-borough chutzpah in such sneering combo rave-ups as *Mushroom Cloud* and the nightmarishly funny *D.T. Shadows*. Horns kick *Outcast* and *Pickin' Pickin'* into Sixties blue-eyed-soul territory, and guitarist Keith Streng's energetic strumming makes *Pocketful of Change* sound like a long-lost Outsiders B side. All in all, "Beautiful Light" cuts it as an instant party in the grand tradition. **P.P.**

**ALISON KRAUSS AND THE COX FAMILY**  
**I Know Who Holds Tomorrow**  
ROUNDER 0307 (40 min)  
**Performance: Good news**  
**Recording: Superior**

**A**lison Krauss's feathery soprano is often compared with the young Dolly Parton's, but the model for her phrasing and emotional resonance may be Suzanne Cox

of the Cox Family, whose album "Everybody's Reaching Out for Someone" Krauss produced last year. On this new album of bluegrass gospel, Krauss joins the Coxes for what is often a genuinely rousing program of new and traditional hymns (*In the Palm of Your Hand, Will There Be Any Stars*) and quasi-spiritual material (Paul Simon's *Loves Me like a Rock*, Loretta Lynn's *Everybody Wants to Go to Heaven*). Vocally, Krauss takes something of a back seat on this project, letting Suzanne handle the bulk of the leads but joining her for harmony and, of course, supplying the artful fiddle and viola work. The women get goose-bumpy good on *Everybody Wants to Go to Heaven*, and the group outdoes itself in a jazzy be-bop rendition of the Rev. Thomas Dorsey's *Walk Over God's Heaven* that's guaranteed to propel you out of your pew. If the song selection grows somewhat uneven as the album unfolds, the all-acoustic instrumentation, superb musicianship, and extraordinarily angelic voices make up for that lapse tenfold. **A.N.**

**MATERIAL ISSUE**

**Freak City Soundtrack**  
MERCURY 314 518 894 (35 min)  
**Performance: Mixed**  
**Recording: Bright**

**L**ike a racehorse that comes strong out of the gate but tires in the home stretch, Material Issue has made an inconsistent album that starts great but soon runs out of steam. The band packs all their youthful musical punch and heart-on-sleeve lyrics into the trio of terrific tunes that open "Freak City Soundtrack" in jaw-dropping 1-2-3 fashion. There's *Going Through Your Purse*, in which guitarist/singer Jim Ellison pours his heart out in a shredded voice as he enumerates the pilfered contents of his girlfriend's handbag, searching for clues to her lack of devotion while the band bashes with early Who-like venom. *Kim the Waitress*, an aching tale of adolescent desire and rejection, follows with the same raging hormonal zeal, an electric sitar hook adding a

**QUOTE / UNQUOTE**

**"I don't do *Just the Way You Are* anymore. It's a well-written song, but playing it makes me feel like I'm in a wedding band or in a cocktail lounge. There's something hackneyed about it."** —Billy Joel, at a recent concert in Albany, New York.



MICHAEL LAVINE/MERCURY RECORDS

**Material Issue: teen angst operetta**

mystical touch. And *Funny Feeling* is full of the exuberance of love in full blush, with slide-guitar licks playfully shadowing Ellison's kid-like vocal. Those three songs are a virtual operetta of teen angst. But from there the album tapers down to redundant variations on those same themes without much coherence or focus, the band churning away on automatic pilot. An entire album of songs as full of drive and zest as those that open "Freak City Soundtrack" would be amazing. Maybe next time? **P.P.**

**OTIS RUSH**

**Ain't Enough Comin' In**  
MERCURY 314 518 769 (64 min)  
**Performance: Tight**  
**Recording: Very good**

**O**tis Rush is one of the most consistent blues performers around—and one of the most underrecorded. But he just doesn't have it in him to make a perfunctory record, and the start-to-finish excellence of "Ain't Enough Comin' In" is another jewel in his crown. He sings with his guitar no less than his voice, and such choice cuts as *Home-work*, a smooth, horn-stoked workout, find sweet and stinging guitar licks trailing his vocal lines. A self-assured performer, Rush leads his band through a variety of moods and tempos here, from the brisk shuffle of *Don't Burn Down the Bridge to As the Years Go Passing By*, a long slow blues that closes the album on a haunting note. The horn charts are outstanding, and Rush contributes sly, salty guitar work throughout. Particularly satisfying is the title track, with its savvy allusion to the bass line that drove Michael Jackson's *Billy Jean*. In short, "Ain't Enough Comin' In" is a strong album by a master talent. Highly recommended. **P.P.**

**THE SMITHEREENS**

**A Date with the Smithereens**  
RCA 66391 (47 min)  
**Performance: Bummed out**  
**Recording: Very good**

**P**at DiNizio is having a bad day. Actually, the Smithereens' singer, songwriter, and rhythm guitarist sounds completely engulfed in a blue funk judging by the doomy lyrics and Beavis and Butt-head-worthy

PHOTO: PATRICK DEMARCHEUER/COLUMBIA RECORDS

## Richard Thompson's Tales from the Dark Side

**"Mirror Blue"** is a particularly strong Richard Thompson album—certainly his best work to date with producer Mitchell Froom. Songs that pierce the veneer of failed or souring relationships without illusion are joined here with black-humored odes to everything from fast food to society's perverse fascination with outlaws and celebrities.

The album opens on a disarming note with *For the Sake of Mary*, whose opening chords so resemble Neil Young's *Cinnamon Girl* as to border on copy-



right infringement. Between Thompson's affected growl and Froom's overarching musical exotica, the second number (*I Can't Wake Up to Save My Life*) tries a little too hard to convey its theme of being engulfed by a nightmare, and here and there Froom's production signature—a dry sound with a dull finish marked by percussion that means to be unconventional but sometimes feels contrived—tosses a wet blanket over Thompson's passion. However, "Mirror Blue" picks up with the third track, *MGB-GT*, and carries through with brooding bravado to the sobering finale, *Take My Business Elsewhere*.

Thompson leavens the mood in key places (*MGB-GT* is a jargony, very British answer to the early Sixties car songs of Chuck Berry, the Beach Boys, et al., set to grand, stolid music that

would have worked on Fairport Convention's "Liege & Lief"). But the real core of the album are those songs where Thompson digs the deepest into his soul and, not coincidentally, the darker side of our collective psyche. *The Way That It Shows* is a beautifully sung hand-wringer that segues from stormy lyrics to a veritable tempest of a guitar solo, with spitfire notes triggered in an orderly but agitated row. *Easy There, Steady Now*—a jazzy, jittery vehicle for acoustic guitar—shudders with a palpable tension, threatening to erupt out of control as the narrator tries to keep a lid on his emotions while he sings, "She didn't have the decency to sweep away what's left of me / I didn't have the presence of mind to walk a straight line."

But perhaps Thompson's most audacious gambit on "Mirror Blue" is *Beeswing*, a folkish, traditional-sounding tune for guitar and fiddle about an untamable lass who escaped the singer's grasp for a life of roaming freely. The moral, he chides, is that her ruined life may have been "the price you pay for the chains you refuse." Part of what makes the song remarkable is

that it's not a centuries-old item lifted from the public domain but rather an original set in the Sixties' "Summer of Love." Ultimately, Thompson is a vital perpetuator of the folk tradition, seeing it not as musty old music for scholarly revivalists but as living, breathing stuff for the here and now. Between his own daring and Froom's production, "Mirror Blue" manages to be both timeless and up-to-date.

Parke Puterbaugh

### RICHARD THOMPSON Mirror Blue

*For the Sake of Mary; I Can't Wake Up to Save My Life; MGB-GT; The Way That It Shows; Easy There, Steady Now; King of Bohemia; Shane and Dixie; Mingus Eyes; I Ride in Your Slipstream; Beeswing; Fast Food; Mascara Tears; Taking My Business Elsewhere*  
CAPITOL 81492 (55 min)

power chords that fill his latest songs. Its jaunty title notwithstanding, "A Date with the Smitherreens" is a cheerless excursion into personal distemper that casts emotional arsenic in every direction. DiNizio and company get right to the point with the first line on the album: "Guess what, there's a black cloud inside of my head / Don't mess around with me or you'll find yourself dead." It's all downhill from there, with the titles telling the tale of a soul in torment: *Everything I Have Is Blue*, *Miles from Nowhere*, *Point of No Return*, *Love Is Gone*, *Can't Go Home Anymore*. Maybe they should have titled the album "Slit Your Wrists with the Smitherreens."

Strangely enough, this doom-and-gloom soufflé is ultimately kind of uplifting in the same way as a good, long cry. For all of DiNizio's black despair, hope—and pop—springs eternal. The band instinctively gropes for salvation in the shafts of sunlight a tuneful melody (the graceful *Miles from Nowhere*) or illuminating chord changes (the reality-hurts sobfest *Love Is Gone*) can provide. Solid, straightforward production by Don Dixon—reunited with the band for the first time since "Green Thoughts" in 1988—plus a few swell guitar solos from Lou Reed help the Smitherreens set the controls for the heart's hardest truths. So although the album might sound off-putting to those who prefer pop's sunnier climes, the band's uncompromising honesty makes "A Date with the Smitherreens" a rewarding, cathartic experience.

P.P.



### BARRENCE WHITFIELD WITH TOM RUSSELL

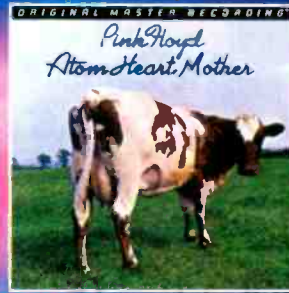
*Cowboy Mambo*  
ESD 80902 (41 min)

Performance: Delightfully bent, but . . .  
Recording: Good

When R&B oddity Burrence Whitfield and country-folk maverick Tom Russell teamed up last year for "Hillbilly Voodoo," every above-ground grave in New Orleans blew its lid and the skeletons jumped for joy. Now Whitfield and Russell are back with "Cowboy Mambo," and while it's full of quirky tunes about monkeys who turn the tables on their owners (*Run Red Run*) and foreign rulers who come to America to hang with Hopalong Cassidy (*The Cowboy Mambo*), the material doesn't pack the wallop of "Hillbilly Voodoo," nor do the performances ever get that spirited. Where Russell had his stamp all over the first album, this one seems more Whitfield's, and it's lighter in tone as



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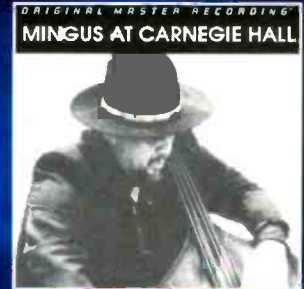
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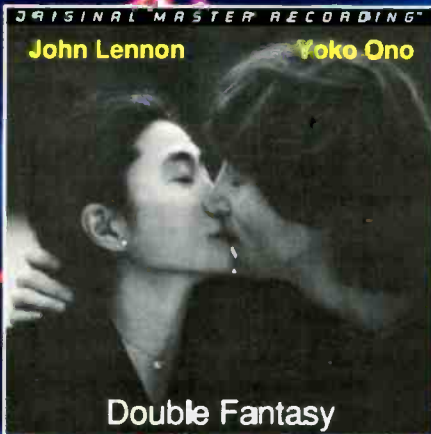
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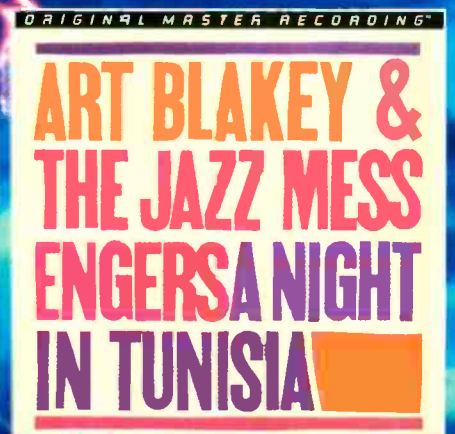


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The last official album, released days prior to Lennon's 1980 murder, displaying the renewed creative forces the duo had found, with hits like *Woman*, *(Just Like) Starting Over* and *Watching the Wheels*.



**NEW RELEASE** UDCD 601

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well as substance. That said, it's also lots of fun, with a couple of forays into bittersweet nostalgia. Add it to your collection, and you might even learn to mambo. *A.N.*



**ZZ TOP**  
**Antenna**

RCA 66317 (51 min)

**Performance: Toppable**  
**Recording: Good**

Miss the car—and that's the basic problem here. Actually, what I'm saying is that I miss the videos—those cute ZZ Top mini-movies in which the guys were cast in character parts—more than the music. That's because the recent stuff by these folks—the postmodern, MTV-era work—was tantalizing ear candy, but didn't really hold your attention; it was easier to remember some of the videos than some of the songs.

Of course, the men of ZZ Top have remained true to their own selves. On this new album, Billy Gibbons flings out his share of nasty blues-inspired licks, and the Dusty Hill/Frank Beard rhythm section still keeps the room rotating. In fact, the Topsters haven't changed all that much from the old days of *Tush*. They still come in only two flavors—boogie and gutbucket (or, to put it more succinctly, fast and slow). But after all these years, these guys could do this schtick in their sleep, and that's what they seem to be doing on a lot of "Antenna." Except for *Pincushion*, which bursts at the seams with powerhouse riffing, much of this sounds a little too familiar, a little too tame. The more you listen, the less you hear.

Something is missing. Maybe something that a good video would supply.

The car?

*R.G.*

**JAZZ** **REVIEWS**

**ANTONIO HART**

**For Cannonball and Woody**

NOVUS 63162 (57 min)

**Performance: Fine Hart renderings**  
**Recording: Very good**

Since catching the public's fancy as a sideman with trumpeter Roy Hargrove's group, alto saxophonist Antonio Hart has branched out on his own with considerable success. Hart's third album as a leader is just what the title implies: a tribute to fel-

low altoist Cannonball Adderley and trumpeter Woody Shaw, both of whom had substantial influence on him. It features Hart on both soprano and alto in a variety of instrumental settings, with input from pianist Mulgrew Miller, trombonists Robin Eubanks, Steve Turre, and Slide Hampton, drummers Victor Lewis and Jimmy Crawford, and, on one track (*Sack O' Woe*), Cannonball's cornet-wielding brother, Nat. Apropos trumpets, expect to hear much more from Darren Barrett, whose solo on Jimmy Heath's *Big "P"* is matched only by the leader's intriguing calisthenics. This is a fresh, invigorating track, but the entire album is superb. *C.A.*

**ANITA O'DAY**

**Rules of the Road**

PABLO 950 (66 min)

**Performance: Valiant effort**  
**Recording: Good**

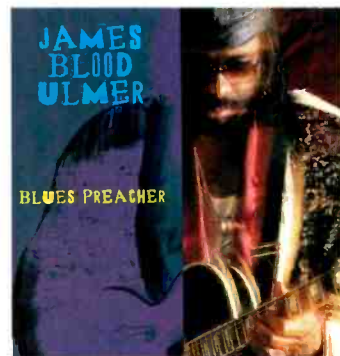
Anita O'Day was wonderful in the early Forties, when she livened up the Gene Krupa orchestra, and later with Stan Kenton, when she established a new style of

**NOT YOUR  
AVERAGE  
CHOIRBOYS**

Back in 1966, every town in America had a locally well-known garage band obsessed with the Beatles, Byrds, Who, etc. In Cleveland, it was the Choir, and as anyone who heard their lone hit single, *It's Cold Outside*, can attest, these guys were world-class great. But because they never made an album (and later mutated into power-pop icons the Raspberries), the Choir has attained almost legendary status. Now, some twenty-five years after packing it in, they finally get their due on "Choir Practice" (Sundazed 11018). Collected from demo tapes, rare masters, and acetates in the collections of band members and fans, this is tough, melodic Sixties pop to make you swoon; sound quality is necessarily variable, but this is a genuine find nonetheless. *S.S.*



jazz singing that strongly influenced subsequent Kenton stars Chris Connor and June Christy. She was downright sensational at the 1957 Newport Jazz Festival, and jazz fans will continue to embrace her recorded legacy, which includes superb Verve albums and excellent performances on her own Emily label. Now, at the age of seventy-three, O'Day has been reunited with Buddy Bregman, with whose orchestra she initiated the Verve catalog in 1956. Unfortunately, this nostalgia event is painful to listen to. O'Day has breathing problems, and her voice wobbles in the way all singers must fear. We do get flashes of the old Anita O'Day here and there, but the rest is pure torture, especially when we know how dazzling she used to be. Sadly, O'Day—like Sinatra and a few others I can think of—would have been better served leaving us to wonder how she might have sounded today. *C.A.*



**JAMES "BLOOD" ULMER**

**Blues Preacher**

COLUMBIA 57302 (62 min)

**Performance: Different**  
**Recording: Very good**

Given the negative perception by some of Ulmer's quartet with second guitarist Ronnie Drayton as a harmolodic Mahogany Rush, what are we to make of it when we see *Angel* listed as the last of this CD's ten selections? Well, make of it what you will—it turns out not to be the Hendrix tune, but an overlaid nouveau-retro disco love ballad sung by Ulmer and apprentice diva Irene Datcher, and quite fun in its own way. Everything else here is as mind-bending as it is genre-stretching, the resemblance to Hendrix finally boiling down to the contrast between Ulmer and Drayton's guitar fury and the mumbled come-hither of Ulmer's vocals.

In the noble tradition of early rock-and-roll, the words to some of the songs are so slurred and muffled as to be open to conjecture. "Blues Preacher" strikes me as an exemplary blend of several kinds of black music, including free jazz, blues, and funk; on *Who Let the Cat Out of the Bag?*, Ulmer and Drayton's off-the-beat guitar lines and the repeated interjections of a male backup singer (Ulmer overdubbed?) amount to what sounds like a hip-hop scratch track. And a raver like *Let Me Take You Home*, with Ulmer's half-spoken entreaties to a lover to "think it over," captures much of this disc's goofy joy. *F.D.*



# QUICK FIXES



## BEASTIE BOYS

### Some Old Bullshit

GRAND ROYAL 89843 (28 min)

Crudely recorded early-Eighties demos from the Beasties' youthful incarnation as a punk band, and, yes, the title is more than a little accurate. S.S.

## V. M. BHATT

### Gathering Rain Clouds

WATER LILY ACOUSTICS

ES-22-CD (52 min)

Along with the American guitarist Ry Cooder, Bhatt won the Grammy for world music with last year's "A Meeting by the River." Now he returns to traditional Indian music accompanied by the percussionist Sukhvinder Singh Namdhari, and the result is exotic but accessible to Western ears. Profound but not pretentious, it is meditative yet upbeat. *William Livingstone*



## SOLOMON BURKE

### Soul of the Blues

BLACK TOP 1095 (54 min)

Solomon Burke, a Sixties soul legend last glimpsed getting blown away in front of Dennis Quaid in *The Big Easy*, returns here with a set of R&B standards done in tribute to the likes of Roy Brown, Johnny Ace, and Willie Dixon. Good news: the arrangements by a crack New Orleans band are swell, and Burke's voice remains thrillingly intact. S.S.

## THE CHARLATANS

### Up to Our Hips

BEGGARS BANQUET 92352 (40 min)

Blatantly retro psychedelic pop, heavy on the Hammond organ, that could almost pass for a trippier version of the original Deep Purple. As such, pretty much a matter of taste, although the phrase "cute and insubstantial" is probably applicable. S.S.

## LISA GERMANO

### Inconsiderate Bitch

4AD 4003 (26 min)

John Mellencamp's former violinist returns with an EP's worth of her inimitable little-girl vocals and highly personal lyrical musings. The production is gorgeous, and you have to give Germano credit for being defiantly her own woman. But too much of this calls to mind the great line from *Repo Man*: "Did you do a lot of acid back in the hippie days?" S.S.

## JAMES MCCARTY

### Out of the Dark

HIGHER OCTAVE 7057 (41 min)

James McCartney was the Yardbirds' drummer, for which he merits respect in perpetuity, and other worthies on this new album include Matthew Fisher (keyboard genius of Procol Harum) and Sixties cult hero Eddie Phillips (a guitarist so flash he was once asked to join the Who). Alas, despite the interesting pedigrees, this is little more than generic pop fluff, like Al Stewart on a (really) bad day. S.S.

## NINE INCH NAILS

### The Downward Spiral

NOTHING/TVT/INTERSCOPE 92346

(64 min)

Tuneless noise, sex and violence, existential angst... yup, it's another fun-fest of an album from Trent Reznor and company. Proving, I suppose, that every generation gets the Leonard Cohen it deserves. S.S.

## RARE ON AIR VOL. 1

MAMMOTH 0074 (61 min)

A wonderfully eclectic bunch of recent live performances culled from the archives of KCRW, an apparently terrific National Public Radio station in Santa Monica, California. Highlights: an intense Tori Amos solo, an unusually serene-sounding Nick Cave, and Evan Dando and Juliana Hatfield crooning about *My Drug Buddy*. S.S.

## TALKING TIMBUKTU

HANNIBAL 1381 (60 min)

Having won a Grammy for world music with the Indian musician V. M. Bhatt (see above), Ry Cooder performs here with the African guitarist and vocalist Ali Farka Toure and other musicians, producing a very different tapestry of gorgeous cross-cultural musical threads that coexist happily and beautifully. W.L.

## DAVID WILCOX

### Big Horizon

A&M 0060 (30 min)

College acoustic favorite David Wilcox knows how to grab your attention, weaving a snaky blues in which he describes coitus as "like a needle against the vein." But he also knows how to tax an attention span the length of the Huey Long Bridge. And that's with such lines as "Take this cup of empty hope up to the well that's dry." Bill Morrissey he's not. A.N.

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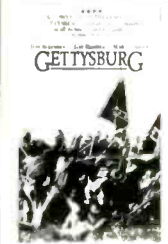


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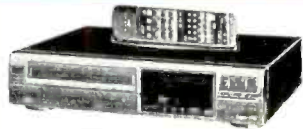


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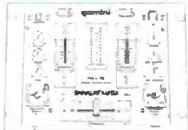


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GENE MARTIN/ECM

Keith Jarrett

**BACH: French Suites**

Keith Jarrett (harpsichord)  
ECM 78118 (two CD's, 101 min)

**Performance: Up-beat**  
**Recording: Good**

There have been a few cases of classical musicians who could play jazz, but is there another case of a jazz musician who has entered so successfully on a classical career? Keith Jarrett's Bach-on-a-harpsichord needs no apologies: it is strong, sturdy stuff that can hold its own with anything around. Since the French Suites are really dance music, I was frankly hoping for something a little more swinging and perhaps

even more improvisational. Jarrett takes a real performer's license only once or twice (check the sarabande of the G Major Suite). Apparently these performances are not about risk-taking (a great jazz tradition, after all) but about affirmation (Jarrett makes Bach his own).

Decently recorded in Jarrett's own studio in New Jersey, they are—if not world-shaking—vigorous, up-beat, live-sounding, and life-affirming performances that never lose their stride. *E.S.*

**BEETHOVEN: Symphony No. 9**

Soloists: Chorus:  
Orchestra of the 18th Century, Brüggem  
PHILIPS 438 158 (63 min)

**Performance: Light and joyful**  
**Recording: Airy**

Beethoven's Ninth is always an inspiration to performers, and this one is way above Frans Brüggem's standard with the Orchestra of the 18th Century. The orchestral sound is the best to be heard in an authentic-instrument performance, and the recording is particularly clean and open. As usual, Brüggem doesn't put a strong personal stamp on the music, but rarely have the brisk tempos and light textures associated with this school of performance seemed so natural in this work.

The articulate Gulbenkian Choir of Lisbon and the quartet of soloists—Lynne Dawson, Jard van Nes, Anthony Rolfe

Johnson, and Eike Wilm Schulte—sail with an almost giddy effortlessness over the many treacherous passages of the final movement. Some may feel that the performance is a bit lightweight, but I found it to be among the most celebratory Beethoven Ninths in recent years. *D.P.S.*

**BIZET: Symphony in C Major;  
L'Arlésienne Suites Nos. 1 and 2**

Orchestre National de Lyon, Krivine  
DENON 75471 (71 min)

**Performance: Elegant**  
**Recording: Spacious**

Emmanuel Krivine's approach in both the symphony and the suites combines a fresh, open-air quality with the instinctive subtlety, refinement, and all-round elegance we've come to expect from him, bringing out certain Mendelssohnian roots of these well-loved works as well as Bizet's remarkable individuality. The music moves along at what invariably seems its natural pulse—expansive enough to let the wonderful ideas come through in the symphony's finale, bracing enough to be restorative in the "Pastorale" and "Intermezzo" sections of *L'Arlésienne* No. 2. There is a bloom on every phrase, an air of unfeigned conviction and relish in the way the music "breathes."

Guy Laroche fully merits his credit for the oboe solo in the symphony's adagio, as does Jean-Yves Fourmeau for his saxophone solo in the "Prelude" of *L'Arlésienne* No. 1, but the entire orchestra sounds as if it had been formed and shaped and coached and nurtured to perform these works. And Denon's own contribution is hardly less exceptional—the spacious recording enhances the open-air quality of the playing, with the orchestra in ideal perspective in terms of both ensemble and detail. *R.F.*

**BRUCKNER: Symphony No. 5**

Royal Concertgebouw Orchestra, Chailly  
LONDON 433 819 (75 min)

**Performance: Handsome**  
**Recording: Resplendent**

Bruckner's colossal Fifth Symphony is surpassed in scope and grandeur only by his Eighth. This latest recorded version, by Riccardo Chailly and the Royal Concertgebouw Orchestra, is the third distinguished one I've heard recently—the others being the superbly disciplined reading by Christoph von Dohnányi and the Cleveland Orchestra (also on London) and Daniel Barenboim's more expansive performance with the Berlin Philharmonic (on Teldec).

Chailly emphasizes the music's dramatic contrasts to a near-operatic level in the first

## SOUNDS OF SEVILLE

"The Seville Concert" by the guitarist John Williams, recorded by Sony Classical at the Royal Alcázar Palace in Seville in "high-definition 20-bit sound," is available on CD, laserdisc, and VHS videotape. Using different settings in the palace and grounds for each piece, Williams noted, provided "a unique opportunity to complement the guitar's wide range of tone colors and repertoire." The hour-long concert features solo works by Bach and Domenico Scarlatti as well as excerpts from Albéniz's *Suite Española*. The guitarist is joined by the Orquesta Sinfónica de Sevilla for a Vivaldi concerto and the adagio from Rodrigo's *Concierto de Aranjuez*. The video releases include a bonus 58-minute documentary on Williams's career.



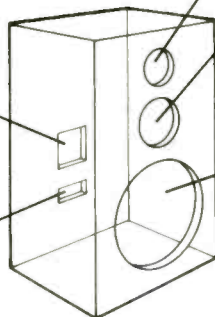
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movement and his highly volatile scherzo. He and Dohnanyi both set a deliberate pace for the adagio second movement, and I prefer their readings to Barenboim's. The tremendous final movement—in sonata form capped by a fugue—fares best under Dohnanyi. Chailly does splendidly with the fugal element, but I'm a bit unsettled by his overly *legato* treatment of the initial statement of the chorale theme by the brass.

Chailly's recording comes out ahead of all competition, however, in terms of sonic splendor. The Concertgebouw Orchestra players are at the top of their form, the brass especially, and the Concertgebouw itself is made to order for the huge climaxes in the finale and scherzo. If you want the big line above all, get the Dohnanyi recording: if you want big sound *and* a fine performance, you can't go wrong with the Chailly. *D.H.*

**GRIEG: Sonatas for Violin and Piano**  
Dumay; Pires  
DEUTSCHE GRAMMOPHON 437 525  
(70 min)

Performance: Enchanting  
Recording: Exemplary

**A**ugustin Dumay and Maria João Pires made their joint recording debut on a very appealing disc of the three Brahms Violin Sonatas last year, and they seem to be even more deeply responsive to the arguably lesser but here utterly enchanting ones by Grieg. Their performance of the C Minor Sonata (No. 3) takes its place beside the most memorable recordings of the past (by Kreisler and Rachmaninoff or Wanda Wilkomirska with Antonio Barbosa), and there is a cumulative impact in having that mature masterwork preceded by the two early sonatas in readings that are not merely documentary but downright revelatory. The assertively youthful G Major (No. 2) is, after all, not less remarkable in its way than Grieg's Piano Concerto, which it preceded by a year, but that has never been made so clear before.

All three sonatas emerge as not merely "lovable" in some trivializing, condescending sense, but as music that inspires passion, joy, depth, and poetry—all of which Dumay and Pires bring to it, together with unflinching technical security and tastefulness. The sound is exemplary, too. *R.F.*

**JANACEK: String Quartets**  
**FAURÉ: String Quartet**  
Medici String Quartet  
NIMBUS 5379 (74 min)  
Performance: Very good  
Recording: Good

**F**irst issued on separate CD's in 1989, these recordings of three major chamber works by Britain's Medici Quartet offer top value combined as they are here. Leos Janacek's First Quartet, dating from his sixtieth year, was inspired by Tolstoy's *The Kreutzer Sonata*, a tale of jealousy and murder involving Beethoven's "Kreutzer" violin sonata. In four tense and highly charged movements (the third referring to a theme from Beethoven's work), Tolstoy's protagonists are delineated by Janacek's highly compressed speech-rhythm idiom, as if

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# Memento Bittersweet

**A** new Catalyst CD called "Memento Bittersweet" presents five attractive, accessible works by contemporary composers with two things in common: an audible joy at the ability to create music, and HIV disease (three have already died of AIDS). Not all of the works are fully formed, but there is a conspicuous lack of sentimentality.

The biggest piece in the 66-minute collection is the Piano Concerto by Kevin Oldham (1960-1993), which is gleefully derivative of those by Ravel, Gershwin, Rachmaninoff, and others. Oldham was the soloist at the premiere, with his home-town Kansas City Symphony, shortly before his death last year; on the CD, with the same orchestra, that part is sympathetically played by Ian Hobson.

*Tango Bittersweet* by Fred Hersch (b. 1955) is a Latin-flavored song without words for piano and cello. Chris



DeBlasio (1959-1993) is represented by the tuneful *God Is Our Righteousness* for the unlikely combination of acoustic guitar and organ. Much more fully realized is the *Variations on Amazing Grace* for English horn and organ by Calvin Hampton (1938-1984), a surprise-filled work with some incredible sounds drawn out of the horn by Thomas Stacy.

The most substantial piece is *Triad-O-Rama* by Lee Gannon (b. 1960), performed by the Aspen Wind Quintet. That's appropriate since it seems to have been composed under the spell of Darius Milhaud, a frequent Aspen visitor, but Gannon's own distinctively playful voice comes through. *D.P.S.*

**MEMENTO BITTERSWEET**  
BMG CATALYST 61979 (66 min)

he'd transcribed one of his operas for string quartet.

His Second Quartet, titled "Intimate Letters" and completed six months before his unexpected death from pneumonia, is an impassioned tribute to the woman who inspired all the masterworks of his last decade. If raw passion can be depicted on four stringed instruments, "Intimate Letters" achieves it, most memorably in the final movement. The appallingly difficult music is played very well by the Medici Quartet, which is excellently recorded, too. But the several versions of this work by Czech en-



sembles, particularly the Talich Quartet, are more completely realized.

Gabriel Fauré's single string quartet, composed in his seventy-ninth year, is totally removed in its untroubled and seamlessly woven lyricism from the wild passions of Janáček. The Medici Quartet's realization of the music's texture and lyrical essence is first-class. The recording is good on the whole, but a touch more acoustical elbow room would have helped project the intertwining harmonic and linear elements even more effectively. *D.H.*

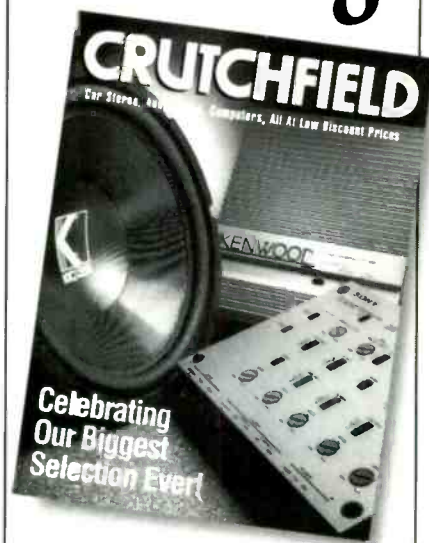
**MENDELSSOHN: Violin Concerto**  
**PROKOFIEV: Violin Concerto No. 2**  
Perlman; Chicago Symphony, Barenboim  
ERATO 91732 (53 min)  
**Performance: Masterly**  
**Recording: Very good**

**MENDELSSOHN: Violin Concerto**  
**Works by Vaughan Williams, Dvorak,**  
**and Massenet**  
Meyers; Philharmonia, Litton  
RCA VICTOR 61700 (59 min)  
**Performance: Warmly lyrical**  
**Recording: Appropriate**

Izhak Perlman's previous recordings of the Mendelssohn and Prokofiev concertos in the mid-1980's (released with different couplings) prompted comparisons with the great Jascha Heifetz versions. His new CD, recorded in concert with the Chicago Symphony, complete with applause, provides further proof that he is the complete master of both works. Throughout the first two movements of the Mendelssohn he gives us a true soaring lyrical line and finely gauged tension in the phrasing, and then he cuts loose with a dare-all finale that leaves one gasping (and applauding).

The Prokofiev seems rather too relaxed at the start, but that's deceptive, as is proved by the brilliantly mercurial fiddling that fol-

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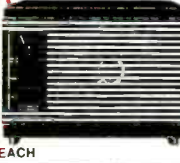
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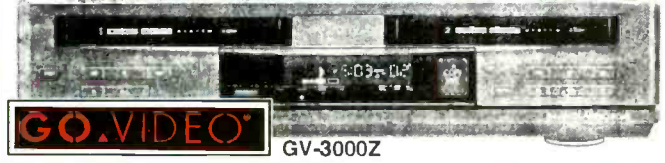
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lows. The beguiling slow movement is a bit fast for my taste, and Perlman is miked a shade too close relative to the orchestra, but everything goes splendidly in the pyrotechnic finale. Daniel Barenboim and the Chicago players are right with the soloist all the way, and the overall recording job is just fine.



Anne Akiko Meyers takes a decidedly different approach to the Mendelssohn concerto. Though there is no significant difference between her performance and Perlman's in playing time, her tonal quality tends to emphasize the music's plaintive aspect. The opening bars alone tell all. If you like an introspective rather than extroverted reading, this one is for you.

Much as I love Vaughan Williams's ethe-

really ruminative *The Lark Ascending* and Dvorak's emotional F Minor Romance, I was a little put off by their being coupled with the Mendelssohn, and throwing in Massenet's saccharine *Thaïs* meditation is really too much—it belongs in an encore collection, not with works of substance. For me, the programming of the CD actually detracts from its appeal. The recorded sound, however, is fine. *D.H.*

**ORFF: Carmina Burana**

Soloists: Chorus: London Philharmonic, Mehta  
TELDEC 74886 (60 min)

Performance: Well-sung  
Recording: Big

Among recordings of *Carmina Burana*, this one is distinguished for its singing. Baritone Boje Skovhus sounds like Dietrich Fischer-Dieskau in his prime and has an artistic temperament to match; most of the solo numbers are his, and they are rousing. Sumi Jo's soprano is the musical equivalent of the virgin who tames the unicorn. Jochen Kowalski (whose credit reads "alto") is the falsetto tenor who sings the memorable song of the roasted swan. The Southend Boy's Choir upholds the traditions of good English choral singing through the maze of dog Latin, German dialects, and old French in the bawdy medieval texts. The rather heavy-handed performance by the London Philharmonic led by Zubin Mehta is, like the recording itself, larger than life. *E.S.*

**PUCCINI: Tosca**

Vaness, Giacomini, Zancanaro, others;  
choruses: Philadelphia Orchestra, Muti  
PHILIPS 434 595 (two CD's, 154 min)

Performance: Impressive  
Recording: Very good

Even though this performance was recorded in concert at Philadelphia's Academy of Music in 1991, during Riccardo Muti's last season with the Philadelphia Orchestra, audience noises are not discernible, nor is there any applause. With or without applause, compliments are in order.

This is a characteristic Muti performance—carefully thought out, attentive to detail, and without intrusive interpretive touches. It is propulsive, paced marginally slower than Sabata's 1953 EMI set with Callas in the lead, a standard for me and many others, but considerably faster than the recent recordings under Karajan, Levine, and Sinopoli. Muti controls the dramatic interactions and pauses with as much care as he devotes to the musical flow, and he allows his singers ample time to breathe.

Tosca is an adventurous leap for Carol Vaness from the Mozartian and French operatic roles she began with. Hers is not a truly dramatic voice, and it lacks some of the lushness and Italian quality associated with the best Toscas. But it is a vibrant voice, alive to the challenges; her wide range and security assures an intelligent performance, if one more notable for accu-

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racy and musicality than for exciting drama. As Cavaradossi, tenor Giuseppe Giacomini finds it hard to modulate his tones for "Recondita armonia," nor can he always respect Puccini's *dolcissimo* markings. But he is no stentorian monochrome, either: His dark, steady tenor enfolds the notes comfortably, and Muti keeps him within firm and tasteful bounds.

Giorgio Zancanaro's cultivated baritone is best in Scarpia's gallant and insinuating moods, where his phrasing is always meaningful and his enunciation a model of clarity. Unfortunately, at the climax of his *Te Deum* he is overpowered by the orchestra and choruses (the Westminster Symphonic Choir and the Philadelphia Boys Choir). It's a tough balancing problem, and the Philips engineering team—like others before them—solve it only partially.

The supporting cast is uniformly good, and the Philadelphia Orchestra sustains its reputation. Cavaradossi's execution, however, is handled tamely, without the explosive sound of a firing squad, and there are other production devices that could have been employed with more imagination. While I am deeply respectful of the high interpretive skills involved here, and consider this one of the best of many—too many—versions of *Tosca* in the catalog, it strikes me as more of a faithful documentation of a concert than a vital, involving recreation of a theatrical event. *G.J.*

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Actor Colm Feore as Glenn Gould

**RACHMANINOFF: Symphony No. 3; Symphonic Dances**  
 St. Petersburg Philharmonic, Jansons  
 EMI 54877 (72 min)  
**Performance: Fiery**  
**Recording: Very good**

**N**either of these extremely personal masterpieces received rave reviews when they were first heard, but over the years both have taken places in the concert repertory and have been recorded many times. In this new recording Mariss Jansons and the St. Petersburg Philharmonic offer plenty of "Russian soul" without exaggerat-

ing that element. The performance of the symphony is intensely dramatic throughout the first movement and gorgeously colorful in the combined slow movement-scherzo, pointing up the newfound transparency that Rachmaninoff brought to these last works, and in particular his canny use of harp and pitched percussion. The fugal-textured finale comes off with exceptional brilliance.

I confess great partiality to the Symphonic Dances, in which Rachmaninoff enriched his sonic tapestry with bits and pieces from his earlier scores as well as the oft-quoted *Dies Irae* plainchant theme,

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which provides the major substance of the *danse macabre* finale. Jansons has everything just right in the first and third movements, but he overdoes the rubato in the marvelous central waltz movement. The sound is bright and clean throughout. *D.H.*

**STRAVINSKY: *Petrushka*; *Orpheus***  
 Philharmonia Orchestra, Salonen  
 SONY 53274 (64 min)  
**Performance: Fetching**  
**Recording: Very good**

**E**sa-Pekka Salonen's recent recordings of Stravinsky with chamber orchestras in London and Stockholm have been unfailingly well-crafted but left something to be desired in the way of communicativeness. There is no shortage of that quality, though, in these fetching performances with the Philharmonia. While I admit to a strong bias in favor of the original 1911 score of *Petrushka*, Salonen does nobly by the 1947 revision, characterizing the respective sections so brilliantly that no one is likely to think of this version as less richly colored. There is a fine sense of dramatic movement as well as first-rate playing from the orchestral soloists and the whole band.

*Orpheus*, composed in the same year *Petrushka* was revised, has never approached the earlier ballet's enormous popularity and remains one of Stravinsky's least-known works. It represents, however, a peak of inspiration in his so-called Neoclassical period (or, with *Apollo*, one of the twin peaks). Salonen's brisker-than-the-norm speeds for the four numbers that make up the first scene may yield little of what Stravinsky



Quartet in B-flat. While the quartets have some obvious formal idiosyncrasies and moments of clumsy writing for the four instruments, they are not among the rather large body of the composer's works that seem filled with hot air rather than genuine passion. And even when the music lacks subtlety, the Borodin Quartet plays so convincingly that such lapses seem more like rhapsodic impulsiveness than failures of technique or intellect. The slow introductions to the Second and Third Quartets come across as intensely personal emotional outpourings. Tchaikovsky was apparently even less inhibited emotionally here than in his symphonies, but what might have seemed excessive twenty years ago sits just fine in an age enamored of Mahler.

The set includes one of the best available recordings of the sextet "Souvenir de Florence," with the quartet augmented by violinist Yuri Yurov and cellist Mikhail Milman. What could be more inviting? *D.P.S.*

## Collection

**KATHLEEN BATTLE**  
**Bel Canto**

London Philharmonic, Campanella  
 DEUTSCHE GRAMMOPHON 435 866  
 (56 min)

**Performance: Brilliant**  
**Recording: Excellent**

**A** well-planned combination of relatively familiar and relatively rarely heard arias by Bellini, Donizetti, and Rossini, this CD is an impressive showcase for Kathleen Battle's exceptional talents. She shines impressively as a convincingly youthful Giulietta (in Bellini's *I Capuleti e i Montecchi*) and a coy Norina (in Donizetti's *Don Pasquale*). Technically, everything she does disarms criticism: Her tones are pure, her singing accurate, with well-judged portamentos and discreet embellishments.

What is lacking? Perhaps a higher degree of involvement, warmth, and passion—an emotional differentiation between the respective plights of one *bel canto* lady and another, between, say, Amina in Bellini's *La Sonnambula*, who hovers between mad depression and mad joy, and Rossini's Contessa in *Il Viaggio à Reims*, whose primary concern is a new bonnet from Paris. What we get here is a somewhat generalized near-perfection. But why quibble? Near-perfection, in whatever form, is hard to come by. *G.J.*



called "mimed stillness," but his pacing has the advantage of getting things moving without in any real sense upsetting the delicate imagery. And in the elaborate Scene II and the brief but touching final scene he is as expansive as one could wish. *R.F.*

**TCHAIKOVSKY: *String Quartets***  
**Nos. 1-3; *Quartet in B-flat Major*;**  
***Souvenir de Florence***  
 Yurov; Milman; Borodin Quartet  
 TELDEC 90422 (two CD's, 151 min)  
**Performance: Impassioned**  
**Recording: Excellent**

**J**ust because Tchaikovsky's string quartets tend to be frustrated symphonies doesn't mean they deserve their neglect. The songful, relatively unambitious First Quartet receives decent exposure, but the other two do not. Even less often heard is the charmingly rustic but unfinished String

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# QUICK FIXES

**BOYCE: Symphonies, Op. 2**

Academy of Ancient Music, Hogwood  
L'OISEAU-LYRE 436 761 (61 min)

All but one of the "symphonies" of William Boyce are actually overtures to theater and choral works. A while back they were touted as precursors of the Classical symphony, but they are perfectly typical late Baroque. Mostly they make a glorious noise: fast and brilliant, sometimes dignified and stately. Taken one by one, they have appeal, especially in these fine early-music performances and recordings. *E.S.*

**BRAHMS: Symphony No. 2**

**DVORAK: String Serenade**

Cleveland Orchestra. Ashkenazy  
LONDON 433 549 (73 min)

Recordings of both these works are legion, but this CD appears to be the first to couple them. Vladimir Ashkenazy's Brahms Second includes the exposition repeat, and the performance is both warm and spirited, with outstanding woodwind playing midway in the allegretto and a brilliant finale. The normally gentle Dvorak serenade gets a more than usually passionate treatment. Excellent sonics. *D.H.*



**CHOPIN AND LISZT:  
The B Minor Sonatas; other works**

Shura Cherkassky (piano)  
NIMBUS 7701 (79 min)

Among the finest Chopin and Liszt performances Shura Cherkassky has given us, these recordings have been circulating for several years in different couplings; they have even greater impact in this generous repackaging built around the two big sonatas. The sound is a little too reverberant, perhaps, but what absolutely stunning, thoughtful, illuminating, totally involved playing! Liszt's famous Hungarian Rhapsody No. 2 has never sounded more musical or more exciting, and neither, really, has either of the sonatas or Chopin's *Andante Spianato and Grand Polonaise*. *R.F.*

**MENDELSSOHN: String Symphonies, Volume 1**

Nieuw Sinfonietta Amsterdam, Markiz  
BIS 643 (60 min)

The dozen string symphonies that Mendelssohn composed for the family orchestra between his twelfth and fourteenth years boggle the mind with their precocious craftsmanship as well as delighting

the ear. Here we have Nos. 2 and 3 from the 1821 set, both in three movements, and Nos. 9 and 10 from 1823, the former a big four-movement piece, the other just an adagio and an allegro. The Dutch musicians under Moscow-trained Lev Markiz display great elegance and verve, abetted by pleasingly warm sonics. *D.H.*

**PROKOFIEV: Romeo and Juliet, Suite; other works**

**RAVEL: Gaspard de la Nuit;**

**Pavane pour une Infante Défunte**

Andrei Gavrilov (piano)  
DEUTSCHE GRAMMOPHON 437 532

(68 min)  
Andrei Gavrilov's performances of the two big works on this disc are less compelling than those he recorded earlier for EMI—his earlier *Gaspard*, especially. The remake suggests something like, "I digested all this and mastered it long ago; it's an old story and holds no further mysteries for me." Impressive on the technical level, though, with thoughtful annotation. *R.F.*



**CARNIVAL IN VENICE**

Touvron: I Solisti Veneti, Scimone  
RCA VICTOR 61815 (63 min)

Of course you recognize *The Carnival of Venice*, which used to be played on a wobbly cornet at summer band concerts in the park. The question is, who wrote it? Jean-Baptiste Arban (1825-1889), who else? And who made the tarted-up, supremely awful arrangement here? Why, G. Herbilon, of course. If you think that's a hoot, try the odd little Concerto in E-flat credited to the *bel canto* opera composer Vincenzo Bellini. A whole album of music like it would have been at least unusual. Alas, the rest of this CD is dubious arrangements of highly uncarnavalesque Baroque music performed in a completely serious and expressionless manner. *E.S.*

**KIM KASHKASHIAN**

**Lachrymae**

Stuttgart Chamber Orchestra, Davies  
ECM 1506 (50 min)

Although this isn't the cheeriest collection of works for viola and orchestra, the instrument's inviting melancholy suits all three pieces—Hindemith's *Trauermusik*, Britten's *Lachrymae*, and Penderecki's Concerto for Viola and Chamber Orchestra. Listening to the CD feels like spending a cold, rainy day inside a warm, dry house. Kim Kashkashian plays the solo parts with her customary passion and virtuosity, but conductor Dennis Russell Davies emphasizes the overall mood at the expense of interpretive detail. *D.P.S.*

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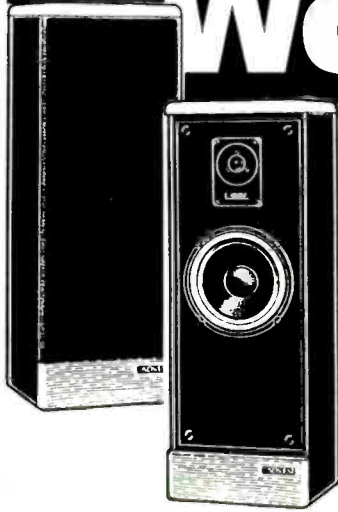
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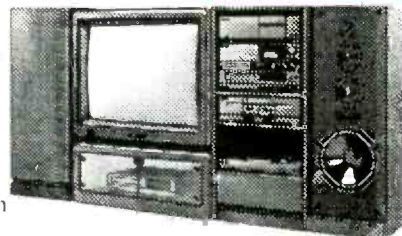
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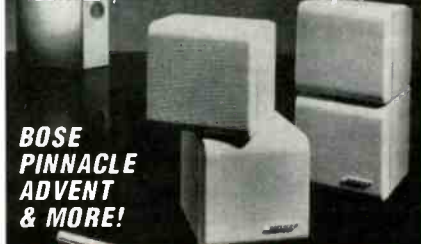
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last"), and Julian Hirsch evaluated the Revox B 251 integrated amplifier ("A delight to use") and the B&W DM2000 speaker system ("We thoroughly enjoyed our all-too-brief exposure to these fine speakers, and hated to return them").

Touch Me, Feel Me: In "The Great Digital Debate," a



The Concord HPST-90, 1984

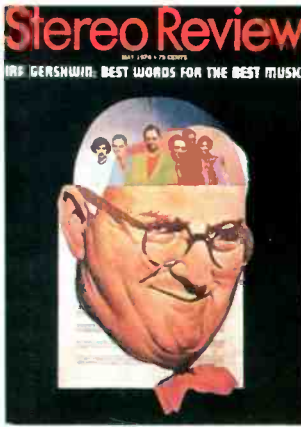
point/counterpoint look at the then fledgling CD technology, equipment designer Michael Tapes weighed in against digital: "If you listen to an analog recording and a digital one, the brain responds positively to the analog and negatively to the digital. It's the emotion that digital takes out."

—Steve Simels



TRW's Bell T-367 four-track stereo tape deck. In test reports, Julian Hirsch examined the Rek-o-Kut R-34 belt-driven turntable ("Its performance left little to be desired") and the Eico 2536 receiver ("It can do a very creditable job as the heart of a medium-price stereo system").

Reviewing "Meet the Beatles," the Fab Four's American debut, Gene Lees dismissed it as "[British] retaliation for our sending them rock-and-roll in the first place."



## 20 Years Ago

In Best of the Month, Baroque specialist Igor Kipnis was uncharacteristically excited about a Van Cliburn disc of Rachmaninoff's solo piano works ("Simply stunning"), while Noel Coppage described

## 30 Years Ago

Not with a Bang, but an Aria: In the May 1964 issue, reader A. Franklin Collier, of Montgomery, Alabama, took Editor Furman Hebb to task for a February column questioning the location of an Air Force radar base that was causing interference with hi-fi systems near Pittsburgh. "He thinks it's okay for us all to be blown to hell," Collier wrote, "as long as we can be sitting on our fat rear ends listening to *La Traviata* at the moment we enter eternity."

New products this month included the Lahti U-2 bookshelf speaker system, with a frequency response of 90 to 12,000 cps (Hz), the Trutone TV Sound Adaptor, designed to reproduce high-quality television audio through an external amp or receiver, and

The Beatles, 1964: England's revenge?



Joni Mitchell's "Court and Spark" in cinematic terms ("The kind of experience a good Bergman film is"). Elsewhere in the review sections, Eric Salzman hedged his bets over "Tubular Bells" by Mike Oldfield ("A quality of put-on and upreach that is likable"), and Peter Reilly proclaimed Lou Rawls's "Live at the Century Plaza" "the noisiest recording of the year."

Among the new products were the Yamaha CR-1000 receiver, rated at 70 watts per channel, the Wollensak 8075 eight-track record-playback deck with Dolby noise reduction, and the Ultralinear 1000 speaker system, whose woofer had an "inertial equalizer." In test reports, Julian Hirsch examined the Dual 701 semi-automatic turntable ("merits the most serious attention"), the Realistic STA-150 stereo receiver ("a fine, well-thought-out job of design"), and the Scintrex 98 stereo headphones ("The overall sound, despite a distinct 'punch,' was well-balanced").

But with regular hormone injections they lead active, productive lives: In response to a female reader's complaint about a proliferation of ads featuring women in slinky dresses, Editor William Anderson noted, "According to last count, our readers are over 95 percent male."

## 10 Years Ago

The Bang & Olufsen Beosystem 2000, an elegant receiver/turntable/cassette-deck combo (\$1,270), made the new products pages, along with Sherwood's first CD player, the CDP-1000 with 16-bit digital-



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