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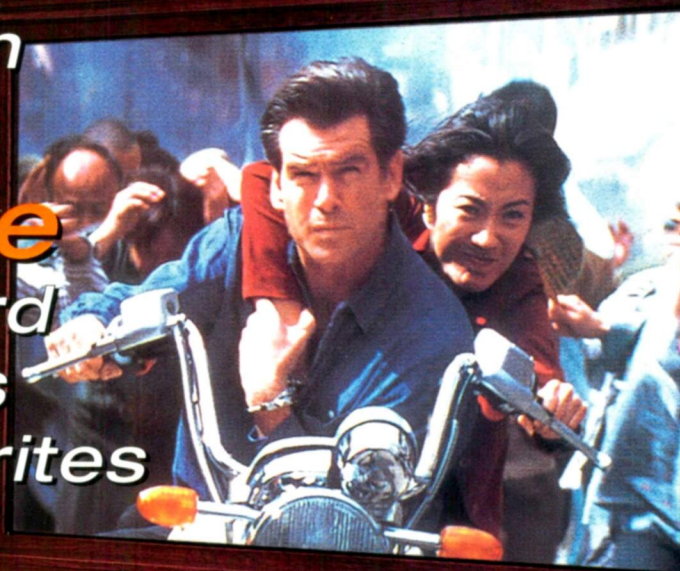
THE WORLD'S #1 A/V MAGAZINE

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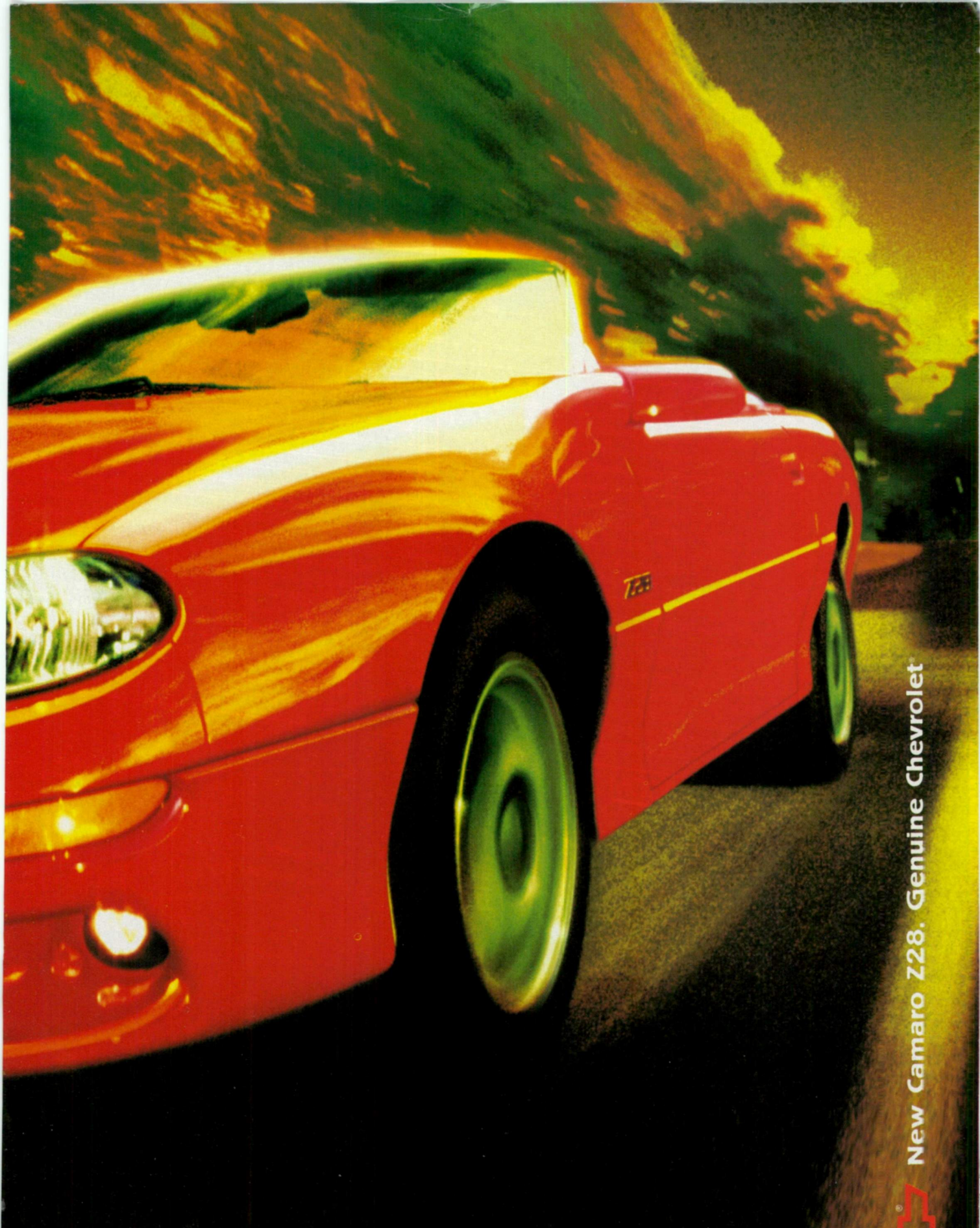
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Stereo Review®



ON THE COVER

Two days earlier, this beautiful home theater was an empty basement room. See page 50 for step-by-step details of the transformation. Image from the James Bond flick *Tomorrow Never Dies* (MGM Home Video).

Photograph by Anne Matheis

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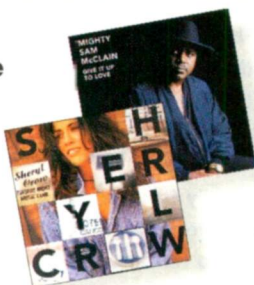
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bulletin

BY BRIAN FENTON & WILLIAM LIVINGSTONE

a/v digest

Fox says it will offer movies in the Divx format this summer, joining Paramount, Disney, DreamWorks, and Universal as the latest studio to endorse the controversial new DVD-offshoot format. Scheduled to be test-marketed in April, Divx players will play CDs and DVDs as well as limited-play Divx discs, but Divx discs will *not* play on regular DVD machines. On the hardware side, JVC and Pioneer have become Divx licensees, joining Zenith, Panasonic, and RCA. . . . Denon, Meridian, Pioneer, and Runco are the first companies to introduce THX-certified DVD players. . . . Harman International (JBL, Infinity, Harman Kardon, and Audax) is the latest licensee of NXT's flat-panel speaker technology. . . . Carver Corp.'s first powered subwoofer, due out this summer, features two 15-inch drivers and a 1,500-watt amp in a cabinet measuring less than 2½ cubic feet.

cult of celebrity

Fame continues to fascinate Americans. This year the National Academy of Recording Arts and Sciences more than doubled the size of its Hall of Fame to 263. Added were hits by Tommy Dorsey, Elvis Presley, the Beatles, the Rolling Stones, Bob Dylan, and others in every genre of recorded music. A new entry by Benny Goodman (*Moonglow*) brought his total to five, more than any other artist. . . . The late Miles Davis was honored this year with a star in Hollywood's Walk of Fame. . . . The Rhythm and Blues Foundation gave its 1998 Lifetime Achievement Award to Gladys Knight and the Pips. . . . On May 24, the first 26 honorees will be inducted into the American Classical Music Hall of Fame in Cincinnati. Besides such obvious choices as Marian

hard-core DVD

As the young DVD business develops, many industry insiders wonder how important a role adult titles will play in the format's success. In the early years "adult software drove the VHS market," says Paul Fishbein, publisher of the trade paper *Adult Video News (AVN)*. Studies have shown that 70 percent of early VCR buyers got them primarily to view sexually explicit material. Even today, an *AVN* survey found, adult movies account for 25 percent of total video rentals and sales, but just 13 percent of available titles. A similar pattern has begun to appear for DVDs, in part because of the multi-camera-angle feature exploited only on adult discs. The leading DVD retailer on the Web, DVD Express (www.dvdexpress.com), told us that adult titles account for only 6 percent of its inventory but "a disproportionate amount of sales."
—Daniel Manu

Anderson, Samuel Barber, Leonard Bernstein, and Arturo Toscanini, they include surprises like Duke Ellington, ragtime composer Scott Joplin, musicologist Nicolas Slonimsky, and the United States Marine Band.

wireless wars

Someday, all of your home appliances and home-entertainment gear will talk to each other, if the companies trying to forge the specs can agree. Two different computer-industry alliances — the Home Radio Frequency Working Group (Compaq, Ericsson, HP, IBM, Intel, Microsoft, and Motorola) and the Personal-Area Network Group (Digital, GTE, and others) — are working on a standard for a wireless network.

Wired solutions are also being sought, including some based on the IEEE 1394 FireWire standard. Digital Harmony is proposing a proprietary standard



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who's buyin' what

The Consumer Electronics Manufacturers Association (CEMA) predicts that 1.8 million households will put together a home theater this year, the same number as last year. . . . The Recording Industry Association of America reported a 3.3-percent decline in CD album shipments last year, to 753 million units. The dollar value dipped 0.2 percent, to about \$9.9 billion. Cassette sales continued their slide, dropping 23 percent in 1997. CD-Single sales, however, were up 54 percent.

DTV update

At the annual National Association of Broadcasters convention, high-definition digital TV was the showcase technology as preparations continue for the first DTV broadcasts, scheduled for later this year in the ten top TV market areas. . . . CEMA claims that surveys of consumers who have seen HDTV demonstrations indicate an "overwhelming interest" in it. . . . Not everyone wants DTV, though. Japan's National Association of Commercial Broadcasters sees station profits plunging and stations going bankrupt if they're forced to invest simultaneously in equipment for both terrestrial and satellite-delivered digital TV, now scheduled to begin in 2000.

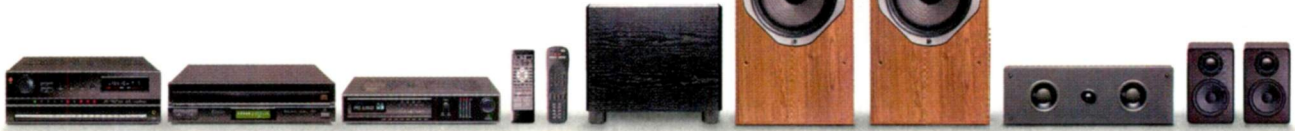
that would guarantee compatibility among FireWire-equipped A/V devices. A glimpse of what is down the road was revealed by Fisher in previews of its HomeMEDIA system (due out late this year), which includes an SVGA LCD projector, a video screen with speakers, and a wireless touch panel communicating over FireWire.

the greatest geek

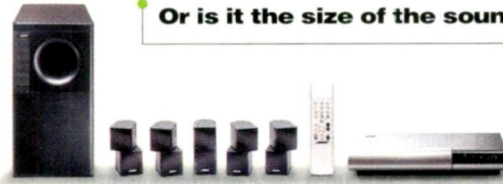
The second annual Rhino Musical Aptitude Test (RMAT) will occur live on Sunday, May 17, at noon Pacific time (3:00 p.m. Eastern) on the Internet and at major Tower Records stores in Los Angeles, New York, Boston, Chicago, Philadelphia, San Francisco, and Washington, D.C. A 1-hour, 300-question, open-book trivia test that covers all types of music except classical, RMAT seeks to discover the Ultimate Musical Trivia Expert, who will be crowned *Geekus*

As you begin your search for the ideal home theater audio system, ask yourself what's important:

Is it the size of the equipment?



Or is it the size of the sound?

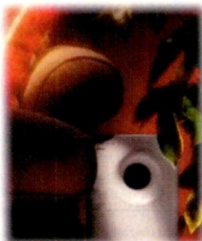


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© 1997 Bose Corporation JN98307G *From a review of the Lifestyle® 12 home theater system

Fast Forward

WHEN LOUISE BOUNDAS took over the reins of this magazine in 1987, she wrote: "We are fortunate in having more and better audio equipment to choose from than ever before, but having more options means making more decisions." The same could be said today, except that we would have to change "audio" to "audio/video" to reflect the boom in home theater.

She went on to summarize *Stereo Review's* editorial mission: "To help you make those decisions, we report on technological advances and new equipment. We provide buying guidance and articles about getting the most from components you already own or are considering. . . . And we do not think you should have to have a degree in electrical engineering to read the magazine and get the information you need to make your decisions. Our articles and test reports are written in plain English, simple and as clear of jargon as we can make it."

For more than a decade, Louise lived by those words as she guided *Stereo Review* through a period of unprecedented change, a period when nearly 5 billion CDs were sold and home theater became an \$8-billion-a-year business. During her tenure as editor in chief, *Stereo Review* chronicled — and in many ways influenced — the emerging digital-audio and home-theater markets, providing the information you need to make informed decisions while never straying from the objective, science-based testing that has made this the world's leading home audio/video magazine for forty years. We shall continue on that path.

Now, after eleven years at the helm and more than twenty-five years with the magazine, Louise has made, in her words, the "bittersweet decision" to retire. Instead of shepherding magazine pages to print on deadline, she'll be busy tending her garden, tweaking her stereo system, visiting New York City's art museums, listening to her CD collection, and traveling abroad. *That's* the life! On behalf of everyone at *Stereo Review*, I wish her well.

IN MY OWN NEW ROLE as editor in chief, I promise to work hard to deliver the magazine you want. While we can't please all of the readers all of the time, we can — and will — offer enough variety in every issue so that no one leaves empty-handed. I welcome your thoughts and opinions on what you like and don't like about *Stereo Review*, and on what you would change — or not. Although it's impossible to answer every letter or e-mail personally, I assure you that the editors at *Stereo Review* will continue to find the time to read each and every piece of mail. Keep your eyes on us.



Bob Ankosko, Editor in Chief

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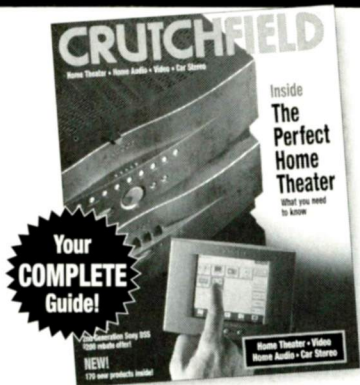
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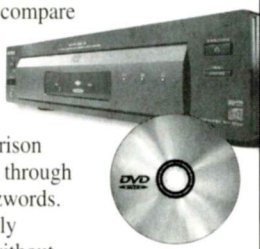
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our first 40 years

I enjoyed the 40th-anniversary issue in March so much! I have been an avid reader since high school in the late Sixties, and it was fun reminiscing about all that has happened over the years. You guys feel like part of my support group — friends, educators, and advisers. Back in my reel-to-reel days I anxiously waited for Craig Stark to help me with my questions, pondered whether to purchase an Elcaset deck, got extremely annoyed with Steve Simels and often agreed with the late Noel Coppage (both like brothers to me), drooled over all the gear Julian Hirsch tested that I couldn't afford, and had very emotional opinions on all that was audio.

I'm older and less emotional now, but I still look forward to being with you guys every month, and I still listen to your opinions and thoughts, trust your advice, and appreciate your help in the search for perfect music reproduction.

Lewis Mck
Colorado Springs, CO

Audio is not just a hobby with me — it's a long-running passion. What has impressed me most about *Stereo Review* over the years is that you do not take an anti-analog or anti-digital approach. I have enjoyed "Audio Q&A" by Ian Masters the most, but I will sadly miss Julian Hirsch's "Technical Talk." The music reviews are excellent, and I have many times based purchases on them.

Eddie Methot
Dalhousie, New Brunswick

DVD and DTS

Will any DVD player (such as Sony's DVP-S7000) play DTS-encoded discs as long as the receiver/processor has a DTS decoder?

Thomas Wright
Staten Island, NY

Many first- and some second-generation DVD players will not pass the DTS bitstream unaltered. Newer players that can do this generally carry a "DTS Digital Out" logo on the front. The Sony player you mention will pass a DTS bitstream from CDs but not DVDs. Audio output from DTS-encoded DVDs (if these become available) would default to two-channel Dolby Digital for decoding in Pro Logic surround.

In general I agree with Corey Greenberg's March "High End" column ("Format-of-the-Month Club"), but I am concerned by his comments on DTS. One of the main reasons I have not yet gotten a DVD player is that I've been waiting for DTS-encoded DVDs. I heard an A/B comparison of Dolby Digital and DTS on some great high-end gear, using the same scene in the movie,

same volume setting, and so on. Although both sounded excellent, the DTS soundtrack seemed to have more detail and clarity. Honestly, it blew me away.

Should I hold out for DTS DVDs? Or go ahead and make my move to DVD now?

Steve Sanford
Rockmart, GA

Although the demonstration you heard may have used the same scene and settings, unless the 5.1-channel soundtrack mixes were the same, you can't draw a legitimate conclusion that the DTS or Dolby Digital (DD) encoding system is "better." As we went to press, more than 700 Dolby Digital-encoded DVDs were available, but no DTS-encoded DVDs had even been announced, so why wait? Just buy a player that you know is compatible with the DTS format.

dolby pro logic test/setup CD

A number of years ago you ran an article on a Delos test disc for proper setup of a Dolby Pro Logic system. Nobody in my area carries it or seems to know anything about it. Can you help me find a copy?

Andrew D. Bronson
Sleepy Hollow, NY

The two-CD set is called Surround Spectacular (DE 3179), and you can find a dealer by calling Delos at 800-364-0645.

minidisc mavens

A stereo buff for about forty years, I have never been one to jump on the bandwagon every time a new format or equipment line appeared. My vote, however, is a resounding "yes" for MiniDisc. It is ideal for my work as technical director for the local community theater. Once an MD is edited, divided, titled, and so on, it offers precise sound effects and music cues for our productions, and one disc replaces twenty-five cassettes. Blank MDs are still difficult to find around here, but they are available. As for DVD . . . I may just wait a little longer.

Stuart W. Roller
Killeen, TX

I bought one of Sony's first MiniDisc recorders, the MDS-101, and now have four different MD devices. As a music teacher I have found MD unbeatable for convenience and performance. Here are some of the ways I use it: to record my students in rehearsal, to master recordings of their solos for contests, to compile excerpts from famous pieces of music for them to identify (the memory feature gives me great variety in the order of songs from one listening test to the next), to compile professional record-

SUBWOOFER OF THE YEAR!

ings of music they are performing so that they can learn by playing or singing along, and to dub demo cassettes for fast access during rehearsal. Of course, each disc is reusable, so one disc per group is fine for months. No tape format can match these benefits of MD.

Robert C. Fox, Jr.
N. Charleston, SC

The June issue will feature a hands-on look at some of the latest MD components.

death of townes van zandt

The February review of Steve Earle's album *El Corazón* stated that Townes Van Zandt "took his own life." Many other media reported that he died of a heart attack following hip surgery, a far cry from your strong insinuation that he committed suicide.

Fern MacDonald
East Granby, CT

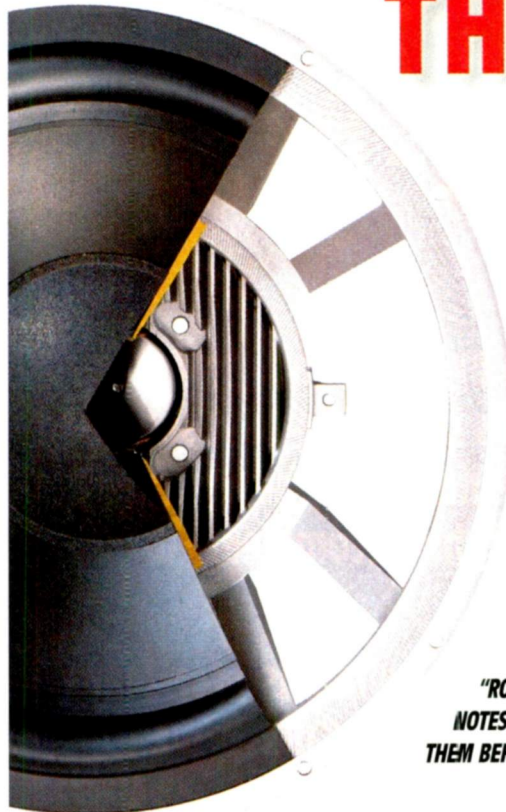
The causes of Townes Van Zandt's death are officially listed as cardiac arrhythmia and myocardial ischemia. We sincerely regret the error in the Steve Earle review, which occurred in part because of a misinterpretation of information on the Web site devoted to Van Zandt and maintained by his widow, Jeanene (www.lonestarwebstation.com/jvzemail.html). When we asked her about it, she explained that his condition was indeed exacerbated by hip surgery as well as by antihistamines he had mistakenly taken for pain. "We didn't know he had heart disease," she said, "and the antihistamines threw his damaged heart into arrhythmia. Along with the stress of surgery the day before and thirty years of hard living, it just gave out."

Corrections

Corey Greenberg's segment in "My First Stereo" in March included an editing error: his reference to a "towheaded immigrant urchin" was changed to "two-headed." Mr. Greenberg's head is, and was, singular.

In the test report on the DCM KX-7 Series Two speaker in March, a reference to its "high insensitivity" should have read "high sensitivity," and the second sentence in the large-type comment on page 97 had two errors: "It's" should have been "Its," and "10 dB" should have been "10 Hz" (as it was in the main text). We regret these errors, which we can only attribute to an excess of anniversary partying. □

We welcome your letters. Please write to Editor, Stereo Review, 1633 Broadway, New York, NY 10019; or e-mail to StereoEdit@aol.com. You should include your street address and telephone number for verification. Letters may be edited for clarity and length.



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- Tom Nounsaine on the PS-1200, Video Magazine

"...POWERFUL AND IMPRESSIVE."

- Andrew Marshall on the PS-1200, Audio Ideas Guide

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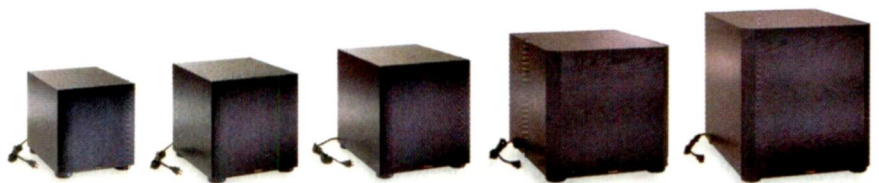
- Wes Philips on the PS-1000, Stereophile Guide to Home Theater Vol. 2, Number 2

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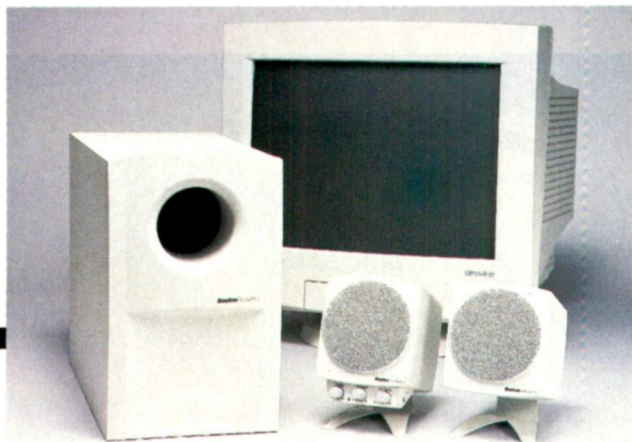
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NEW PRODUCTS

Technics The Technics SH-AC500D audio processor and preamp can decode both Dolby Digital and DTS-encoded surround signals. It has two optical and two coaxial digital inputs, a set of six analog RCA inputs, and six analog RCA outputs for connection to a receiver or amplifier. Features include dynamic-range compression for late-night listening, a test-noise generator for system level calibration, and adjustable center- and surround-channel delay. A wireless remote control is included. Price: \$400. Panasonic, Dept. SR, One Panasonic Way, Secaucus, NJ 07094. Phone, 800-211-7262. Web, www.panasonic.com.



Boston Acoustics The MediaTheater multi-media powered sound system from Boston Acoustics features Virtual Dolby Surround processing, a spatial-enhancement system said to produce the effect of five-speaker Dolby Surround sound with only two speakers. The MediaTheater consists of two magnetically shielded satellite speakers that measure 4½ x 4⅛ x 4½ inches and a dual-chamber bass module, measuring 12½ x 6⅞ x 12¼ inches, that contains a 6½-inch woofer, the system power amplifier, and the signal-processing circuitry. Price: \$300. Boston Acoustics, Dept. SR, 300 Jubilee Dr., P.O. Box 6015, Peabody, MA 01961. Phone, 978-538-5000. Web, www.bostonacoustics.com.



Advent The AV575 bass-reflex satellite speaker from Advent is designed to be usable for either the main or surround channels of a home-theater system. Part of Advent's 500 series, which also includes the AV520CC center-channel speaker and the SUB550AV powered subwoofer, the AV575 has a 5¼-inch woofer and a 1-inch titanium-dome tweeter. Frequency response is given as 80 Hz to 20 kHz ±3 dB, sensitivity as 91 dB, and nominal impedance as 8 ohms. The speaker's glass-filled ABS enclosure is magnetically shielded and features a built-in swivel-mount base. The AV575 is intended for use with amplifiers delivering between 20 and 150 watts, and it contains current-limit protection circuitry. It measures 10¾ x 6 x 6¾ inches and is available in black or white. Price: \$350 a pair. Advent, Dept. SR, 527 Stone Rd., Benicia, CA 94510. Phone, 707-745-5940. Web, www.adventaudio.com.



Denon A Dolby Digital decoder is built into Denon's DVD-3000 DVD player. In addition to the six-channel analog audio RCA output, the player has both optical and coaxial digital audio outputs. A virtual surround-sound mode is said to deliver the sensation of enveloping sound from front speakers alone, and a speaker-mode selector is said to match the player's low-frequency output to the type and number of speakers in use. A variable time-delay setting is also provided to allow for flexible placement of the surround speakers. Video outputs include two composite-video and two S-video jacks and a component-video set. Three picture-mode settings are provided: fine, soft, and normal. Price: \$899. Denon, Dept. SR, 222 New Rd., Parsippany, NJ 07054. Phone, 973-575-7810. Web, www.denon.com.

NEW PRODUCTS



Pioneer The Pioneer VSX-507S Dolby Pro Logic receiver includes Virtual Dolby Surround processing to create the illusion of three-dimensional sound from only two speakers. Six other simulated ambience modes (Jazz, Dance, Hall, Theater 1, Theater 2, and Dialogue) are also offered. The receiver, which is rated to deliver 100 watts to each of its five channels, has a six-channel analog input for connection to a DVD player with a built-in Dolby Digital decoder or an outboard, stand-alone decoder; that input is selected with a front-panel Direct button. Preamp outputs are provided for the subwoofer and center channels. The receiver's digital signal processing (DSP) circuitry features proprietary digital noise reduction. Five A/V inputs are provided, including a convenience set on the front panel. Price: \$450. Pioneer, Dept. SR, 2265 E. 220th St., Long Beach, CA 90810. Phone, 800-746-6337. Web, www.pioneerelectronics.com.



MSB Technology MSB's DDP 2x preamp/processor provides decoding for both Dolby Digital and DTS sources. It has one optical and one coaxial digital input plus an AC-3 RF input for connection to a suitably equipped laser-disc player. Input signals are automatically identified as PCM (standard CD), Dolby Digital, or DTS format and processed accordingly. Digital-to-analog (D/A) conversion is handled by 20-bit devices. A six-channel analog RCA input is also provided; a bypass mode routes incoming analog signals directly to a set of output jacks. There are three 20-bit digital PCM outputs for the front, rear, and center/sub channels and a line-level two-channel output as well. Front-panel controls allow the level of each channel to be adjusted independently or with a master volume control. The DDP 2x measures 17 x 12 x 4 inches and weighs 24 pounds. Price: \$2,195. MSB Technology, Dept. SR, 14251 Pescadero Rd., La Honda, CA 94020. Phone, 650-747-0400. Web, www.msbttech.com.

Tributaries

The Tribute GroundGuard ground-loop eliminator is designed to be installed in a cable-TV feed to eradicate the picture anomalies and audio buzz caused by ground loops. Ground loops can develop when an A/V system has two or more ground connections at different voltage potentials — for example, the grounds of a cable-TV hookup and the house's electrical wiring. Price: \$100. Tributaries, Dept. SR, 1307 E. Landstreet Rd., Orlando, FL 32824. Phone, 800-521-1596. Web, www.tributariescable.com.



Rockustics

The Tunestone outdoor speaker from Rockustics is one of twenty-eight models in the company's line. It has an 8-inch full-range driver in an enclosure made using crushed stone and environmentally safe resins. The enclosure, which is designed to blend into the landscape, is said to be able to withstand weather extremes including ultraviolet rays, heat, rain, snow, and wind. The speaker's power-handling capability is rated at 70 watts. It has a lifetime warranty against manufacturing defects. Price: \$530 a pair. Rockustics, Dept. SR, 15400 E. Batavia Dr., Aurora, CO 80011. Phone, 800-875-1765.

AudioControl

For those who like big bass on the road, AudioControl's Epicenter Series II processor incorporates a circuit that is said to detect bass harmonics in audio signals and digitally recreate the original, fundamental bass frequencies. The user can tailor the level, bandwidth, and shape of the bass-restoration effect. In addition, the processor has an infrasonic filter with a 36-dB-per-octave slope. The Epicenter has two line-level inputs and outputs. It measures 5 x 6 x 1½ inches and is intended to be mounted in the vehicle's trunk or package area; a dash-mountable control for the bass-restoration circuit is included. Price: \$200. AudioControl, Dept. SR, 22410 70th Ave. W., Mountlake Terrace, WA 98043. Phone, 425-775-8461. Web, www.audiocontrol.com.



NEW PRODUCTS



Newpoint The Newpoint TD5000 Theatre Director surge suppressor features five switched and three unswitched power outlets. One of the unswitched outlets has current-sensing circuitry that allows a device plugged into it to control the power to the five switched outlets, two of which feature a 10-second turn-on delay. The Theatre Director has a 1,370-joule energy-dissipation rating and is UL-1449 listed. Protection for one telephone line and two coaxial lines is also provided. Price: \$300. Newpoint, Dept. SR, 6370 Nancy Ridge Dr., San Diego, CA 92121. Phone, 800-639-7646. Web, www.newpoint.com.

Aiwa

The ADC-M55 six-disc car CD changer from Aiwa is designed to be an easy add-on for any car stereo system because no wiring is required between it and an in-dash receiver. Instead, the changer sends music signals wirelessly via an FM modulator at 88.3 or 88.7 MHz. The magazine-equipped changer can be mounted at any angle from 0 to 90 degrees. An optional wireless remote control is available. Price: ADC-M55, \$300; remote control, \$35. Aiwa, Dept. SR, 800 Corporate Dr., Mahwah, NJ 07430. Phone, 800-289-2492. Web, www.aiwa.com.



TrueMusic

Pragmatic Communications Systems claims that its TrueMusic wireless audio-signal distribution system can relay stereo signals more than 300 feet via radio signals in the 900-MHz band, though its in-home range will be reduced by walls and other obstructions. The system consists of the TST-1 transmitter, which accepts a line-level stereo input; the TSR-1 receiver, which has line-level stereo outputs; and two AC wall-mount adapters and the ANT-1R antenna (not shown). Price: \$900. Pragmatic Communications Systems, Dept. SR, 544 E. Weddel Dr., Suite 8, Sunnyvale, CA 94086. Phone, 408-542-0330. Web, www.wireless-experts.com.



Cerwin-Vega

The Cerwin-Vega CVT speaker line consists of the CVT-12 (shown) and CVT-10 tower speakers with side-firing woofers (\$1,199 and \$799 a pair), the CVT-300S and CVT-200S (shown) powered subwoofers (\$699 and \$499), and the CVT-7LCR speaker (\$299, shown atop the TV), designed for front, center, or surround applications. All speakers are magnetically shielded and finished in black woodgrain vinyl. Cerwin-Vega, Dept. SR, 555 E. Easy St., Simi Valley, CA 93065. Phone, 805-584-9332. Web, www.cerwinvega.com.

Platinum Audio The PT Series speakers from Platinum Audio consist of the PT 801 (left) and PT 806 (center) bookshelf speakers and the 40-inch-high PT 808 floor-standing model. All have a 1-inch titanium-dome tweeter. The PT 801 has one 7-inch woofer, while the PT 806 and PT 808 have two each; respective low-frequency ratings are 45, 42, and 25 Hz. All are finished in rosewood vinyl. Prices (per pair): PT 801, \$399; PT 806, \$599; PT 808, \$799. Platinum Audio, Dept. SR, 250 Commercial St., Unit 4002, Manchester, NH 03101. Phone, 603-647-7586. Web, www.platinumaudio.com.



NEW PRODUCTS



Coda The Coda Technologies Amplifier 20.5 is a two-channel power amp rated to deliver 200 watts per channel into 8 ohms from 20 Hz to 20 kHz with less than 0.1 percent distortion, or 800 watts in its bridged-mono mode. The amplifier's maximum current output is said to be greater than 70 amperes, and its slew rate — the maximum speed at which its output can change in response to an input — is given as 50 volts per microsecond. Noise is specified as -100 dB referred to rated output. The Amplifier 20.5, which features both balanced and unbalanced inputs, an anodized aluminum chassis, and double-sided, gold-plated circuit boards, measures 19 x 8 x 19 inches and weighs 85 pounds. It carries a ten-year warranty. Price: \$5,250. Coda Technologies, The Continuum Group, Dept. SR, 9941 Horn Rd., Unit A, Sacramento, CA 95827. Phone, 916-363-4653.



RCA The RC5210P, RCA's second-generation DVD player, can also play audio CDs and video CDs. It supports base-level features of the DVD format including multiple-language and subtitle capability, parental control, and multiple aspect ratio on suitably encoded discs. Playback modes include slow motion, stop action, and search. Both optical and coaxial digital audio outputs are located on the rear panel. While intended primarily for connection to a Dolby Digital receiver or decoder, the digital outputs are said to pass through DTS-encoded signals without corruption. Two-channel analog audio outputs are also provided, as are composite-video and S-video outputs. The horizontal resolution is given as more than 500 lines, and signal-to-noise ratio is rated at greater than 95 dB. The player measures 15 x 2³/₄ x 13¹/₂ inches. A remote control is included. Price: \$599. RCA, Dept. SR, 10330 N. Meridian St., Indianapolis, IN 46290. Phone, 317-587-4450. Web, www.rcaelectronics.com.

Jamo

The Jamo Cornet 175 speaker is a two-way bass-reflex design with a pair of 6¹/₂-inch woofers and a 1-inch, ferrofluid-cooled, soft-dome tweeter. Its sensitivity is given as 90 dB and its bandwidth as 43 Hz to 20 kHz. The gold-plated terminals accept banana plugs or heavy-duty speaker cables. The Cornet 175 measures 31¹/₂ x 8³/₄ x 11¹/₄ inches and is available in a mahogany or black wood veneer finish. Price: \$598 a pair. Jamo, Dept. SR, 1177 Corporate Grove Dr., Buffalo Grove, IL 60089. Phone, 847-465-0005. Web, www.jamospeakers.com.



InnoDesign

The CDX system from InnoDesign consists of plastic trays that hold four CDs each. The trays can be hung on the wall (as shown) for display. Discs can be removed without taking the jewel boxes from the trays. Prices for systems that hold from eight to forty-eight discs range from \$14 to \$36. InnoDesign Inc., Dept. SR, 577 College Ave., Palo Alto, CA 94306. Phone, 800-443-4666. Web, www.innodesign.com.

MB Quart

The MB Quart QM 215.61Q and QM 218.61Q (shown) car component speaker systems have 1-inch titanium-dome tweeters. The QM 215.61Q has a 5¹/₄-inch woofer and a rated response of 40 Hz to 25 kHz ±3 dB. The QM 218.61Q has a 6¹/₂-inch woofer and a response of 37 Hz to 25 kHz ±3 dB. Prices: QM 215.61Q, \$749; QM 218.61Q, \$799. MB Quart, Dept. SR, 25 Walpole Park S., Walpole, MA 02081. Phone, 800-962-7757. Web, www.mbquart.com.





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Hot DVDs

RECOMMENDED NEW TITLES AND CLASSIC REISSUES BY RAD BENNETT

THE LITTLE PRINCESS; A LITTLE PRINCESS

When good source material is used, classics can take on a new life on DVD. The 1939 version of Frances Hodgson Burnett's tale, considered by many to be Shirley Temple's finest movie, is a case in point. Rather than a restoration, the DVD is a digital transfer from what Lumivision claims is "the only known nitrate print of the film in existence." Although some visuals have faded, most of the picture sparkles in bright color, and Temple's plucky performance comes off as consistently assured and even occasionally inspired. Ancillary material includes a trailer and a promotional short in which Temple, dressed up like a miniature Florence Nightingale, makes a plea for everyone to give a dollar to the "Merican Red Cross." How could anyone resist! Lumivision's bargain price, the lowest we've seen so far for a DVD movie, makes *The Little Princess* both an entertaining and an economical excursion into the past.

Whereas the 1939 movie is sentimental in its look and approach, the 1995 version

of the same story, *A Little Princess*, comes across as richer and more fully textured. Liesel Matthews is entirely appealing as the title character without ever being cutesy, helping to make this a program that can be appreciated by children and adults alike, a real family movie. Moreover, it is one of the best-looking DVDs in the entire catalog. The deliberately oversized interiors of the boarding school, rich with wood tones and various shades of green, are faithfully transmitted, and the detail — which allows

street scenes to be easily read — is astonishing even by DVD standards. The Dolby Digital 5.1-channel mix is first-rate, too, serving up dialogue, sound effects, and Patrick Doyle's poignant score with absolute clarity.

Taken together, these two movies show a fascinating contrast in social and artistic observations made on the same material a half century apart. It's a plus, then, that DVDs are so affordable that owning both titles isn't prohibitive.

***The Little Princess* (1939):** one-sided; Dolby Digital 2-channel mono; 91 min (feature), plus trailer and promotional short. Lumivision, \$14.95. ***A Little Princess* (1995):** two-sided; English and French, Dolby Digital 5.1; Spanish, Dolby Digital 2-channel matrix surround; English, French, and Spanish subtitles; closed captioned; letterbox (1.85:1) and pan-and-scan; 97 min. Warner Bros. Family Entertainment, \$24.98.

PLATOON

By training an ensemble cast for two weeks in the jungle, Oliver Stone and his military technical advisor, Dale Dye, helped create a movie about the Vietnam War that rings true, its young actors seeming more like soldiers in a documentary. Gritty and unflinching, the Best Picture of 1986 still packs a wallop, and the DVD version is exceptionally well done. The image is loaded with detail and almost totally devoid of digital artifacts. The many slow pans of the jungle are rock solid, without any of the distracting shimmer that DVD's MPEG-2 compression can add to such scenes. Close-ups are so sharp you feel an

uncanny intimacy with the actors. The remixed Dolby Digital 5.1-channel sound is good, too. Audio for the surround channels seems carefully chosen rather than always present, heightening the drama on the screen rather than distracting you from it. There are two full-length commentary tracks — one by Stone, who won the Oscar for Best Director, and the other by Dye — as well as "A Tour of the Inferno," a documentary on the making of the movie. Scene-selection menus provide live action and are downright cool in design. At its list price, *Platoon* is a real bargain.

One-sided dual-layer; Dolby Digital 5.1 and Dolby Digital 2-channel matrix surround; closed captioned; letterbox (1.85:1); THX-approved; 120 min (feature), plus making-of documentary. Live Entertainment, \$24.98.

CELINE DION: THE COLOUR OF MY LOVE CONCERT

Shot at Quebec's Theatre Capotole, this tightly edited 1995 program uses many different camera angles to make you feel as if you're seeing much more than what the audience could have experienced. The spotlights and color washes, including a particularly hot orange, are handled by DVD's digital video with ease. The analog video of laserdiscs often shows streaking or other video noise during such scenes, but the DVD signal is as steady as can be. For the

soundtrack, there's a choice of Dolby Digital 5.1 channels or PCM stereo. The surround channels recreate vocal and instrumental reflections off the side and rear walls of the Quebec hall as well as reproducing the audience applause in all



the channels. If you find that overwhelming, the clean and clear PCM tracks provide upfront sound that is more intimate and a little warmer. This DVD does something we think all DVDs should be providing menu setups before you start the program. An easy-to-click "resume" position begins the concert once the audio and subtitle options are set.

One-sided; Dolby Digital 5.1 and PCM stereo; English and French subtitles; 67 min. SMV/Sony 550 Music, \$24.98.



Platoon's Charlie Sheen

RICKY FRANCISCO/MGM

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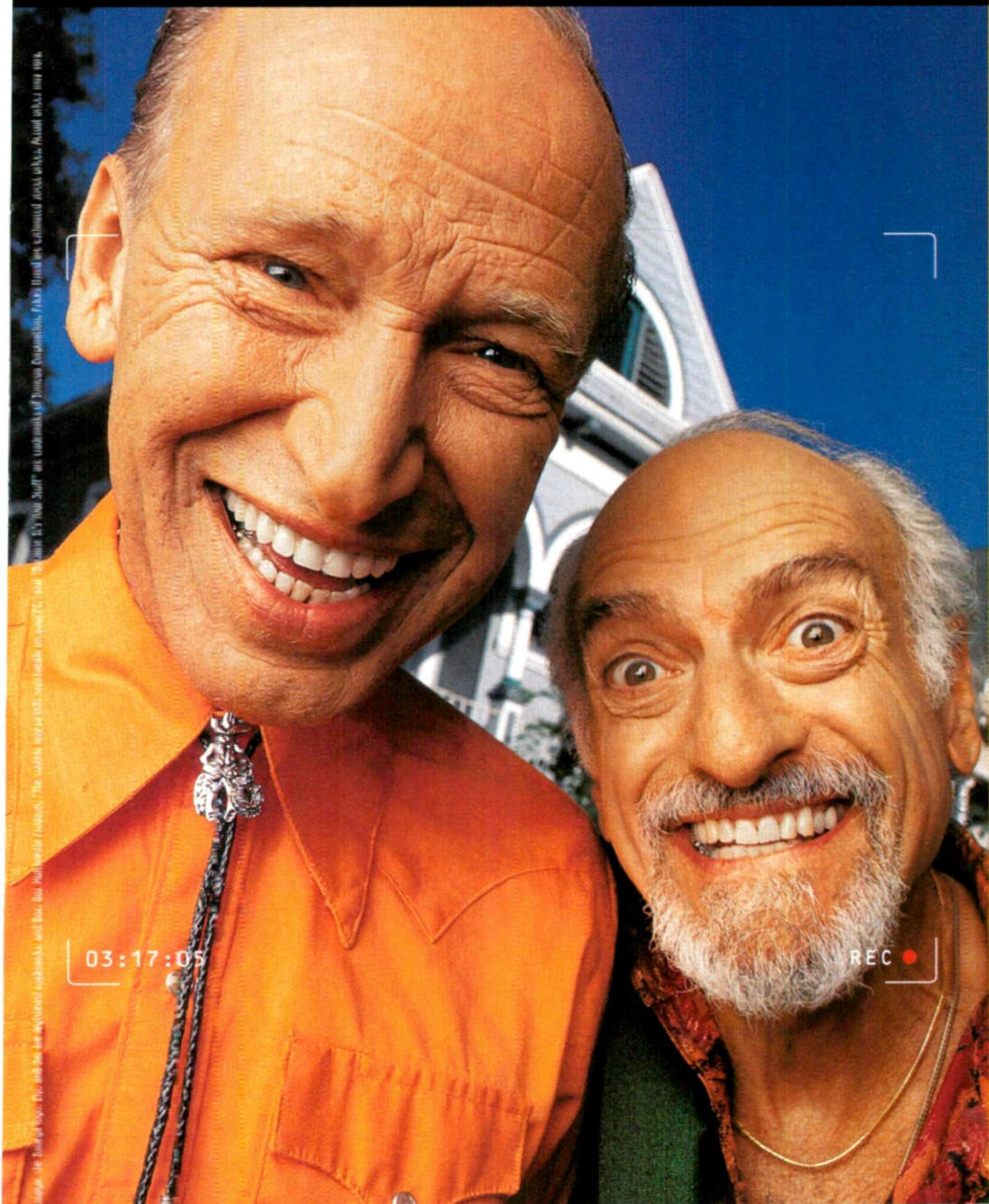


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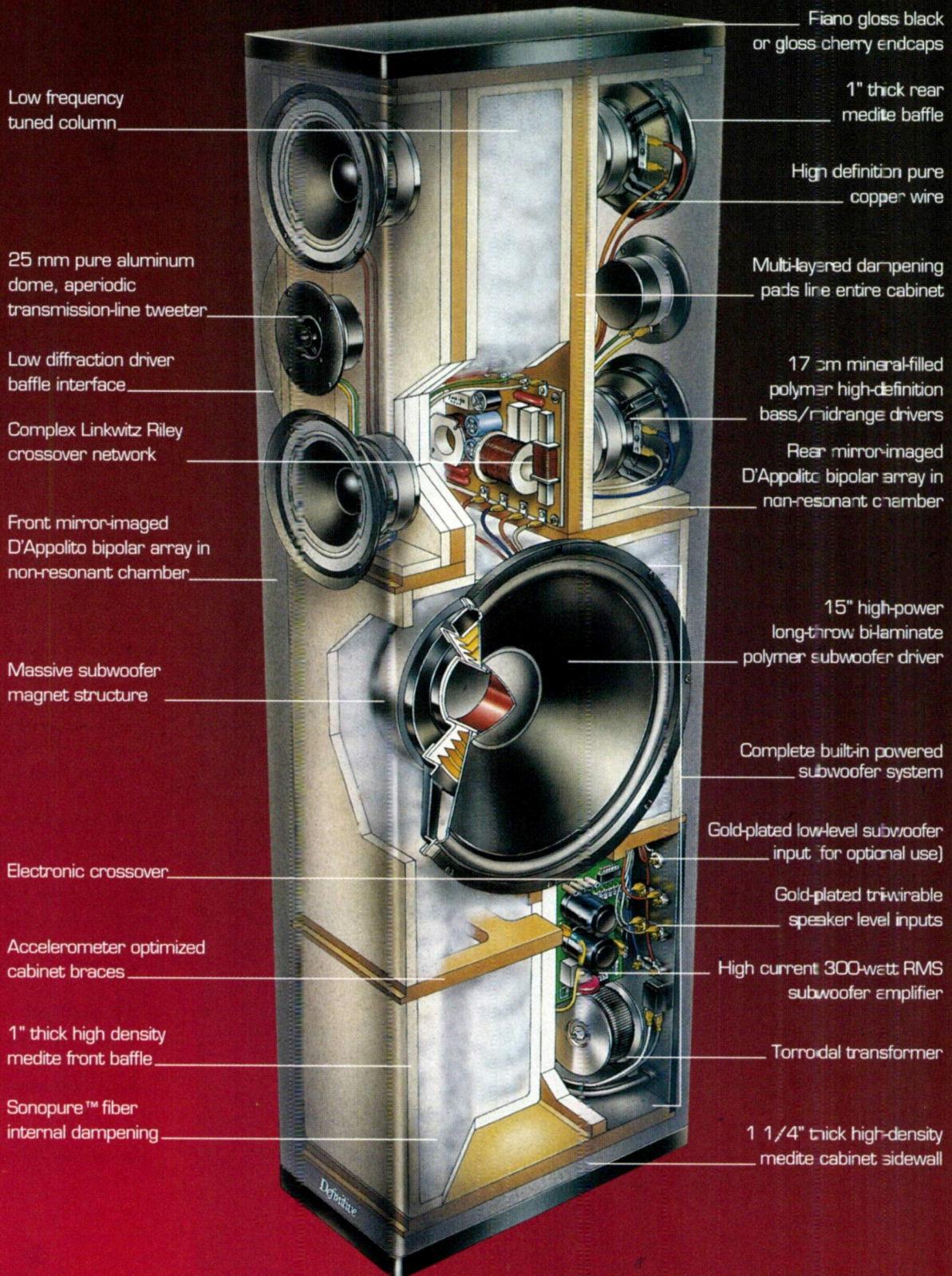
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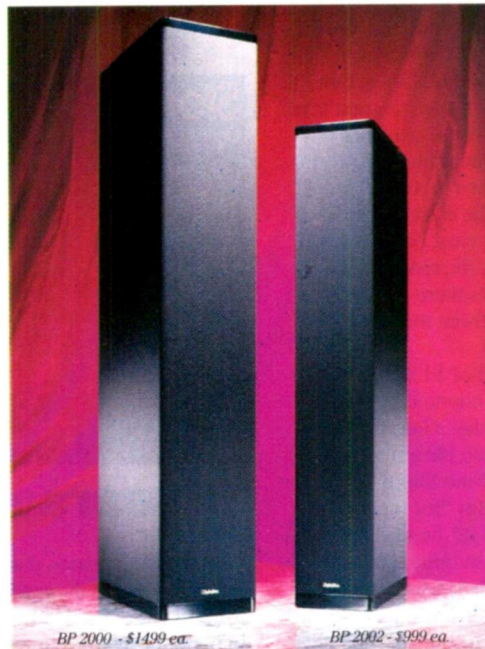
—*Home Cinema Choice*, England

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—*Prestige HiFi*, France

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—*HiFi Review*, Hong Kong

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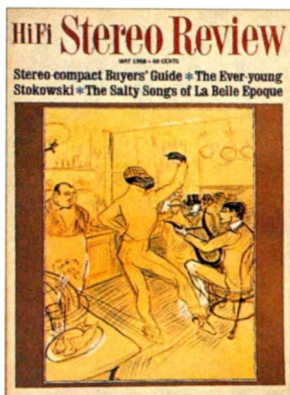
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time delay



30 years ago

It's the end, the end of the century: the May 1968 issue took readers back to "The Music of *La Belle Époque*" and the era's "frantic exuberance, its frenzy, its gaiety, its minor horrors." It was also a time "when a gentleman grabbed Charles Cros by the throat during a demonstration of the 'graphophone' to prove that what was later to become the record player was no more than a clever act of ventriloquism."

An early attempt at a drum machine was the Arc (automatic rhythm "computer"), as shown in new products. Built by WMI, the \$350 "percussion band" plugged into an amplifier and supplied twelve rhythms (including tango and cha-cha) in the sound of ten instruments (including woodblock and cowbell).



WMI drum machine, 1968

A buyer's guide was devoted to "stereo compacts," the new breed of tabletop units. Models ranged from Lafayette's LSC-40 turntable/amplifier/speaker system (\$100) to Bogen's MSC-1 (\$522), which added an AM/FM tuner and an eight-track tape player.

Best of the Month kudos went to *Francis A. and Edward K.* — Sinatra and Ellington, that is. Meanwhile, Eric Salzman's roundup of "Musicotechnology" encompassed works by Berio, Cage, Druckman, Feldman, and Reich. And in an interview, conductor Leopold Stokowski was asked to speculate on music of the future. "When I meet you in heaven or hell," he said, "I will answer that question."



20 years ago

E.T., headphone home. In his May 1978 column, music editor James Goodfriend reflected on NASA's recent launch of "a transmigrant time capsule" whose contents included recordings of music from various parts of the world: "The extraterrestrial must have ears, or all is lost. But that is the risk we take. God knows there are human beings without them."

"The price of \$150 is considerable for a phono cartridge, even in today's inflated economy," Julian Hirsch reported in a test of the Shure V15 Type IV. But "for those who can afford it," he said, "there is nothing else quite like it." Wharfedale's return to the U.S. market was covered in a test of the top-of-the-line E-70 speaker (\$475), which concluded, "The quality of the cabinet's walnut finish . . .

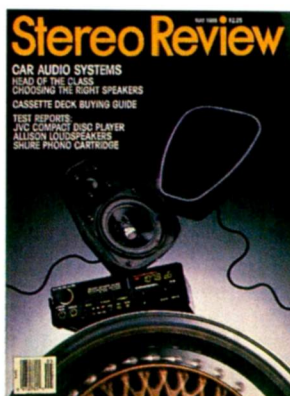
explains some of its rather high price. The sound quality explains the rest!"



Pioneer receiver, 1978

KLH entered the autosound market with a line of speakers ranging from the Headliner III (\$120 a pair) to the Model 693DMSC (\$215 a pair). Also featured in new products was one of the first graphic equalizers for the car, part of Royal Sound's EA-400 power amplifier (\$180). For the home, Pioneer introduced its SX-1980 receiver, rated at 270 watts per channel and priced at \$1,250.

Steve Simels called Warren Zevon's *Excitable Boy* "the first truly subversive album of 1978." Elsewhere, Chris Albertson reported on the trend of "Loft Jazz," and William Livingstone interviewed bass-baritone José van Dam, who said, "I never want someone who has enjoyed one of my records to come to the theater and find that I cannot do the same thing on the stage."



10 years ago

"There's no question that music can make the road easier for us," wrote Louise Boudas in her editorial introducing the May 1988 issue's special car-stereo coverage. "I just hope the fellow driving that

eighteen-wheeler coming down the road toward me is not trying to figure out how to work his equalizer right now."

Among the new products was Soundstream's TC301, at \$299 the lowest-priced car cassette receiver then on the market. Also shown was the Pinnacle PN 6+ bookshelf speaker system (\$229) with a large, tuned, elliptical port



Warren Zevon, 1978

whose tube was angled deep into the enclosure for what the company called "the best possible bass response from a small box."

"The notion of a career is the thing that interests me the least," said rising-star conductor Simon Rattle in an interview. "The making of music is much more important to me." And speaking of careers, rocker David Lee Roth's was "slipping" on *Skyscraper*, where critic Mark Peel found one track that sounded like "Barbara Cartland with amps."

— Ken Richardson



Pinnacle speakers, 1988

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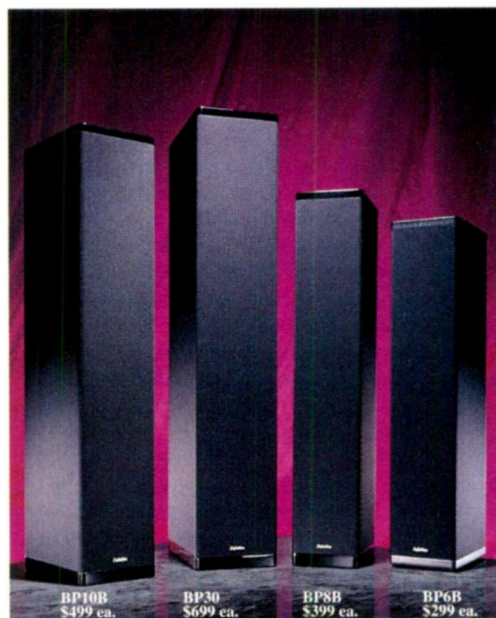
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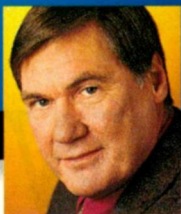
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AUDIO Q&A

IAN G. MASTERS

ported subwoofers

Q. *I'm looking for a subwoofer to use in my home-theater system. I know that subs are supposed to deliver all of the low frequencies, but the ones that I've seen are ported and don't produce the sort of bass I want. Do any models go really low?*

**Clint Lotz
Springfield, IL**

A. A port does not necessarily diminish a speaker's bass extension — in fact, it often increases it. Some of the deepest subwoofers use ported, or bass-reflex, enclosures. You need to evaluate the speaker as a whole and not focus on a single aspect of its design. There are good and bad examples of all possible designs.

On the other hand, it's quite true that many so-called subwoofers are really just woofers and don't produce the lowest octave — below, say, 30 Hz. Some do, however. Few movie soundtracks have much energy that low, however, and such extended response is often wasted in home theaters.

In any event, few listening rooms in audio stores really do justice to subwoofers (or any speakers, for that matter), so you will have to judge any sub you may decide to buy in your own room. Make sure the dealer will take it back for a refund or exchange if you don't like the way it sounds when you get it home.

system from *The Twilight Zone*

Q. *I'm on a shoestring audio budget, so I'm always on the lookout for secondhand components. I recently happened upon a Heathkit AR29 receiver that appeared almost unused and a pair of speakers with 12-inch woofers, 8-inch midranges, and rather odd-looking 2 1/2-inch drivers that I assume are tweeters. There's a switch marked Presence/Norm and a knob that operates when the presence control is switched in. Only the name Universal appears on the woofer. The whole works cost me only \$33, but it plays cleanly at excruciatingly high levels. Do you know anything about these components? Are these some bizarre devices from *The Twilight Zone*, or did I luck into a perfectly matched \$33 audio system?*

**M. David Kaczmarek
Medina, OH**

A. It's probably pretty well matched for a 30-year-old system. My somewhat patchy archives show that the Heathkit AR29 was available in 1972, but if memory

serves, it was already several years old then. It cranked out a hefty 35 watts per channel, which was about medium-power in those days.

The speakers are more of a mystery. The name Universal is unfamiliar to me, but I suspect they may be knockoffs of University speakers, which was a fairly prominent public-address (PA) speaker brand back then. The "excruciatingly high levels" with a 35-watt amp indicate a very high sensitivity, which would make sense for PA speakers. The "odd-looking" tweeter may be some sort of horn design, which would also be consistent with high sensitivity and a PA application.

Speakers back then often had presence controls that boosted the middle frequencies to make voices seem closer. Keep it switched off, as it makes the speaker's frequency response less accurate.

missing codes

Q. *When I buy CDs, I regularly look for the codes (AAD, DDD, and so on) that tell buyers how the music was produced, recorded, and mastered. I understand that a disc for which all three processes were digital is preferable. Recently I've noticed that fewer and fewer discs include these codes. Is there any good reason for the record companies to withhold this valuable information?* **Mark C. Jagielski
Milwaukee, WI**

A. The letters you refer to are known as the SPARS code, after the Society of Professional Audio Recording Studios, which originated them. The first letter indicates whether the original recording medium was analog or digital. In many recordings, especially of pop and rock music, that original is made on a multitrack analog machine on which individual instruments can be manipulated before being combined. That second phase — the mixdown — is the first version of the whole recording rather than its component parts, and it's indicated by the second letter. The third is always D because the codes are only used for CDs, and all CDs are digital.

In theory, the earlier in a recording's life that it's converted to digital the better, because it's the multiple generations of recording, plus the processing used to try to keep them as clean as possible, that make analog recordings inferior to digital ones. But a first-generation analog recording can easily be as good as its digital equivalent,

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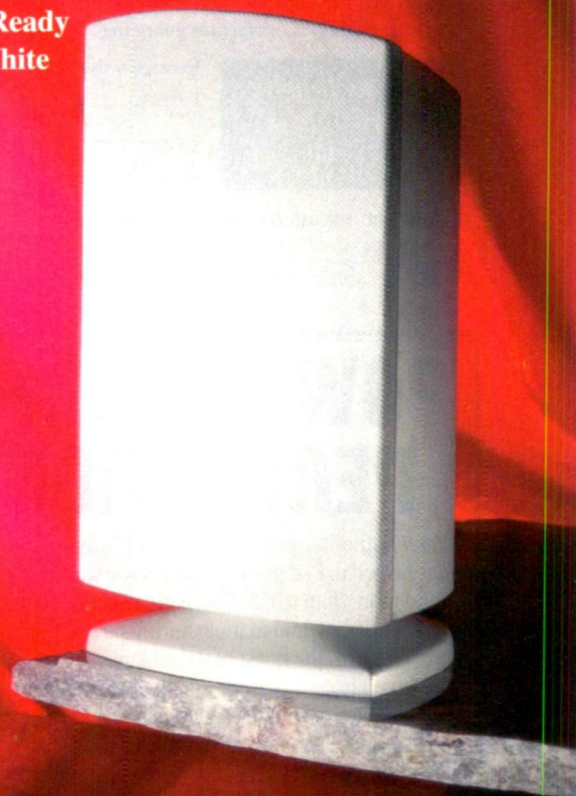
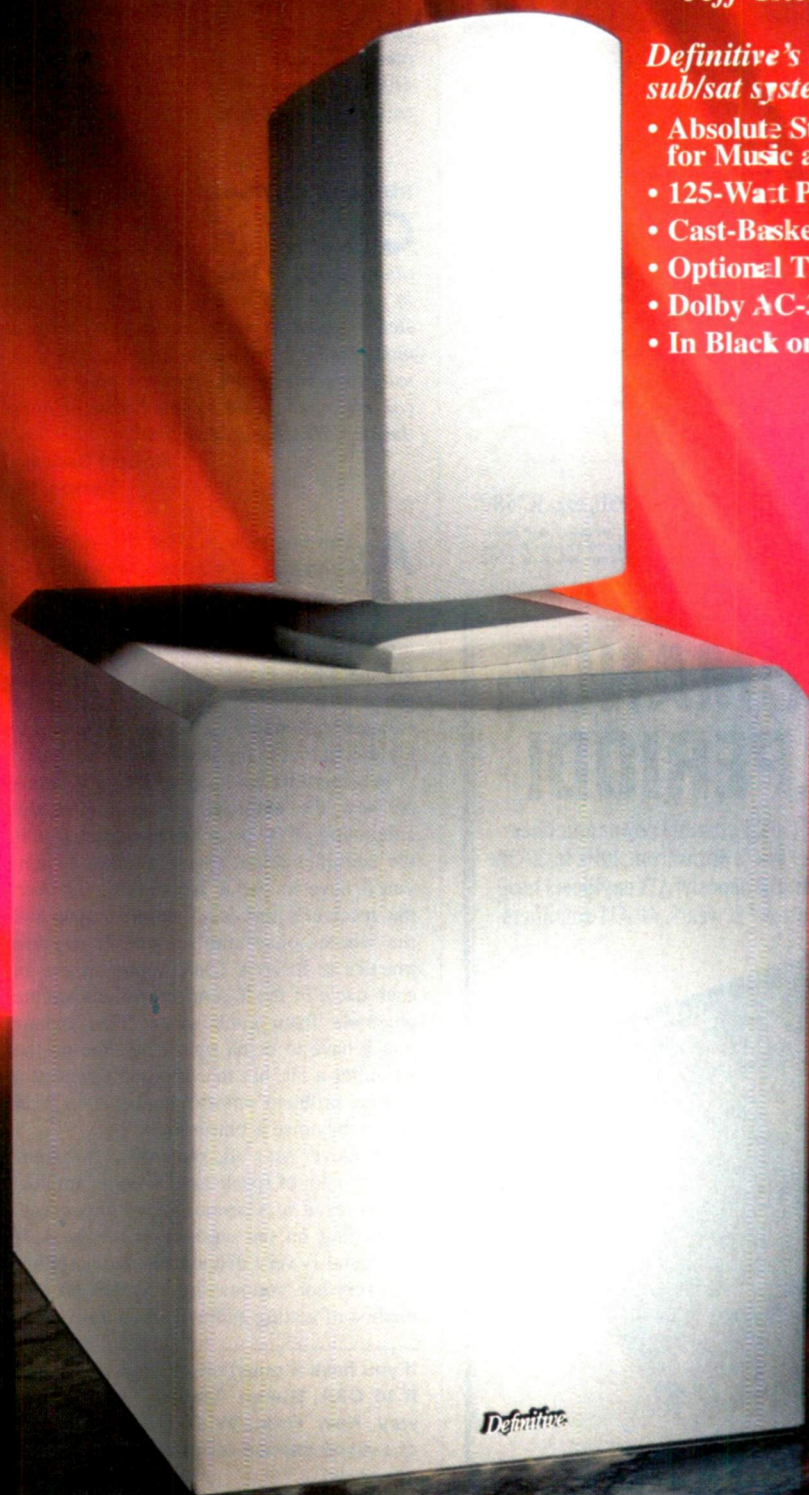
AK- Alaska Audio: Juneau• Pyramid: Anchorage.
AL- Cohen's Electronics: Montgomery• Kincaid's TV: Tuscaloosa•
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AR- Custom Audio Video: Little Rock.
AZ- Jerry's Audio Video: Phoenix, Tucson, Scottsdale.
CA- Access to Music: Larkspur• Accurate A/V: S. Lake Tahoe•
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Clearwater• Hoyt Stereo: Jacksonville• Palm Audio: Destin•
Sound Components: Coral Gables• Sound Ideas: Gainesville•
Sound Insights: Ft. Pierce• Stereotypes: Daytona Beach.
GA- Laser Disc Enterprises: Atlanta• Merit TV: Columbus•
Stereo Connections: Valdosta• Stereo Festival: Atlanta.
HI- Honolulu Home Theater: Honolulu.
IA- Ultimate Electronics: Cedar Rapids, Des Moines•
Archer Audio Video: Ft. Dodge• Audio Video Logic: Des Moines•
Audio Visions: Sioux City• Hawkeye Audio: Iowa City, Cedar Falls•
Renier's: Dubuque.
ID- Ultimate Electronics: Boise• Wise Buy: Idaho Falls.
IL- Absolute Audio: Rockford• United Audio Centers: Chicago &
Suburbs• Good Vibes: Champaign• Jon's Home Ctr.: Quincy•
Sound Forum: Crystal Lake.
IN- Classic Stereo: Ft. Wayne, Mishawaka• Kings Great Buys:
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KY- Ovation Audio: Lexington, Louisville.
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Wright's Sound Gallery: Shreveport.
MA- Cookin': Chestnut Hill, Saugus• Goodwins Audio: Boston,
Shrewsbury• Nantucket Sound: Hyannis• Northampton Audio:
Northampton• Pittsfield Radio: Pittsfield.
MD- Gramophone: Baltimore, Ellicott City• Myer-Emco: Gaithersburg,
Beltsville, Rockville• Sight & Sounds: Easton• Soundscape: Baltimore.
ME- Cookin': Portland.
MI- Pecar's Troy• Classical Jazz: Holland• Sound North: Iron Mtn. •
Stereo Center FRAV: Flint• Court St. Listening Room: Saginaw.
MN- Audio King: Minneapolis & Suburbs, Rochester, St. Cloud•
Audio Designs: Winona.
MO- Independence A/V: Independence• Sound Central: St. Louis.
MS- Ideal Acoustics: Starkville• McLelland TV: Hattiesburg•
Players A/V: Ridgeland.
MT- Avitel: Bozeman• Rocky Mt. Hi Fi: Great Falls.
NC- Audio Video Systems: Charlotte• Audio Visions: Wilmington•
Now Audio Video: Durham, Greensboro, Raleigh, Winston Salem•
Tri City Electronics: Conover.
NE- Custom Electronics: Omaha, Lincoln.
NH- Cookin': Nashua, Manchester, Newington, Salem, S. Nashua.
NJ- Hal's Stereo: Trenton• Monmouth Stereo: Shrewsbury•
Woodbridge Stereo: West Caldwell, Woodbridge.
NM- Ultimate Elect.: Albuquerque• Sound Ideas: Albuquerque.
NV- Ultimate Elect.: Las Vegas.
NY- Audio Breakthroughs: Manhasset• Audio Den: Lake Grove•
Clark Music: Albany, Syracuse• Stereo Exchange: Manhattan•
Hart Elect.: Vestal• Innovative Audio: Brooklyn• Listening Room:
Scarsdale• Rowe Camera: Rochester• Speaker Shop: Amherst.
OH- Audio Craft: Akron, Cleveland, Mayfield Hts., Westlake• Audio Etc.:
Dayton• Classic Stereo: Lima• Ohio Valley Audio: Cincinnati•
Paragon Sound: Toledo• Stereo Visions: Columbus•
Threshold Audio: Heath• Unique Home System: Cincinnati.
OK- Audio Dimensions: Oklahoma City• Photo World: Stillwater,
Shawnee• Ultimate Electronics: Tulsa.
OR- Bradford's HiFi: Eugene• Chelsea A/V: Portland, Beaverton•
Kelly's Home Ctr.: Salem• Magnolia HiFi: (Portland) Beaverton,
Clackamas• Stereo Plant: Bend.
PA- Audio Junction: Pittsburgh• Gary's Elect.: State College•
GNT Stereo: Lancaster• Hart Elect.: Blakely• Hi Fi House: Abington,
Broomall, Camp Hill, Harrisburg• Listening Post: Pittsburgh•
Palmer Audio: Allentown• Stereo Shoppe: Selinsgrove, Williamsport•
StereoLand: Natrona Heights• The StereoShop: Greensburg.
RI- Stereo Discount Ctr.: Providence.
SC- A/V Design: Charleston• Custom Theater & Audio: Myrtle Beach•
Upstairs Audio: Columbia.
SD- Audio King: Sioux Falls• Sound Pro: Rapid City.
TN- College HiFi: Chattanooga• Hi Fi Buys: Nashville• Now Audio Video:
Knoxville• Modern Music: Memphis• Sound Room: Johnson City.
TX- Home Entertainment: Dallas, Houston, Plano• Audio Tech: Temple•
Audio Video: College Station• Bunkley's Sound Systems: Abilene•
Bjorn's: San Antonio• High Fidelity: Austin• Krystal Clear: Dallas•
Marvin Electronics: Ft. Worth• Sound Quest: El Paso•
Sound Systems: Amarillo.
UT- AudioWorks: Salt Lake City• Crazy Bob's: St. George• Stokes Bros.:
Logan• Ultimate Elect.: Layton, Murray, Orem, Salt Lake City.
VA- Myer-Emco: Falls Church, Tyson's Corner, Fairfax• Audio Connection:
Virginia Beach• Audiophonics: Roanoke• Home Media Store: Richmond.
WA- Bunch-Finnegan: Kennewick• Magnolia HiFi: Seattle & Suburbs,
Tacoma, Silverdale, Spokane• Pacific Sight & Sound: Wenatchee.
WI- Absolute Sound & Vision: Sheboygan• Audio Emporium: Milwaukee•
Flanner's A/V: Milwaukee• Hi-Fi Heaven: Appleton, Green Bay•
Sound World: Wausau.
Puerto Rico- Precision Audio: Rio Piedras.
Canada- A & B Sound: Calgary, Edmonton, Kelowna, Vancouver &
Suburbs, Victoria• Advance Electronics: Winnipeg• Bay Bloor Radio:
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so it's very possible for an ADD recording to sound every bit as good as a DDD recording (or even better, depending on the skill of the respective engineers). Even AAD discs can be superb if the digital conversion is made from the original mixed tape. If the conversion happens generations later, it can be terrible. But the code won't tell you how *many* analog generations there were, just that there was at least one for each A.

The code was never mandatory; some companies never used it. My guess is that many feel that the use of the code might drive purchasers away from otherwise excellent ADD and AAD recordings.

stereo reprocessed for mono

Q. *My house is wired for audio, with two speakers in most rooms. Unfortunately, only one cable feeds both speakers in each room. I would like to convert the stereo sound from my main receiver to a mono feed for the whole-house system. I'm using a separate amplifier for that, so the conversion could take place before or after the amp. Which would be best?*

**Robert Gearing
Tampa, FL**

A. You can't do it after the amplifier. Connecting the outputs of two amplifiers together is likely to damage both of them, so the conversion must be done at the input stage. It might be as simple as switching the whole-house amplifier to its mono mode, if it has one, then just cranking the balance control to one channel and connecting that output to the whole-house wiring.

Whether that works in your case depends on how the amplifier accomplishes the combining of the two channels internally. If the amplifier doesn't have a mono switch, you'll have to use a Y-connector between the receiver's line-level stereo output and the whole-house amp's input. It is good practice to insert a 10,000-ohm resistor in each cable of the Y-connector to isolate the channels from each other. That means you'll have to crank up the volume on the amplifier a bit, but that shouldn't present a serious problem unless you get to a level where the noise is obtrusive.

Whatever you do, remember that connecting a lot of speakers to a single amplifier can result in a seriously low impedance, depending on the equipment involved. If the sound is very distorted or the amplifier gets very hot, you may have to seek another method of getting audio to all your rooms.

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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What Buttons Do You Want to Push Today?

AS YOU MIGHT imagine, I'm writing this column on a computer. I've written a ton of magazine articles with the help of computers. In fact, I've written only *one* article on a typewriter — my very first one, in 1982. After enduring a long, hellish night thanks to my horrendous typing skills, I confronted an obvious decision: either learn how to touch-type, or get a computer. The next day I mail-ordered a computer kit, which I finished building just in time for my next deadline, one month later. Ever since then, I've felt distinctly uncomfortable using any keys or buttons that do not talk to an operating system.

As you might imagine, I am also writing this column while listening to music. The audio gear in my office changes more often than my socks, but tonight I happen to have a modest home-theater system installed. The satellite receiver, DVD player, VCR, and A/V receiver have a total of 72 buttons on their front panels. The various remotes add another 181 buttons, which yields a combined total of 253. They make it difficult and frustrating to operate the system, and there's absolutely no good reason for that.

Men and frogs share about 98 percent of their DNA. A home-theater system and a personal computer probably share at least as much. They are both mainly housed in plastic-and-steel boxes with electrical connections. They accept data inputs, process it through cleverly designed silicon chips, and output representations of it to us, the users. However, in the same way that men and frogs wound up on different ends of the food chain, computers and stereo systems have taken different evolutionary paths.

Today's audio and home-theater components — members of a much older family than computers — have stayed with the dedicated control buttons common in their ancestral line. Although they use microprocessors to interpret the user's button presses, they mainly insist on devoting dedicated buttons to particular tasks. The computer, a much younger species, has taken a more advanced evolutionary path. Computers use nondedi-

cated buttons (aside from that pesky ASCII keyboard). Most of their controls appear as button icons in a visual display — “soft” buttons.

Clearly, soft buttons are superior to hard ones. A hard-button computer would be absurd. Every program would need its own massive, dedicated control panel — obviously an unworkable idea. Instead, the front panel of my computer has 4 buttons, the keyboard has 103 buttons, and the mouse has 2. Admittedly, 109 buttons is more than I'd ideally like to see. On the other hand, my computer does the same

If they are to survive, audio and home-theater systems must learn a lesson from computers and reduce their button counts.

basic tasks as my home-theater system (playback of movies and sound) and a heck of a lot more.

Now, don't get me wrong. The operation of my computer's soft buttons isn't always intuitively obvious or easy. But soft buttons are inherently more understandable than hard ones. They can be big and colorful, with identifying labels or icons, and they can appear only when they are needed. Soft buttons make a computer a more advanced species. By contrast, my 253-button home-theater system is of a species that is out of control, multiplying and mutating its functions to the point of self-oblivion. Its hard-wired approach, which was efficient twenty years ago, is now hopelessly unwieldy. And as home-entertainment systems inevitably grow more complex, the number of buttons required to operate them will only increase. My tolerance level for buttons will certainly not increase, however. That means that as future audio and video systems add more buttons, I won't use any of them. In other words, as far as I'm concerned, the species will have stopped usefully evolving.

If they are to survive, audio and home-

theater systems must learn an evolutionary lesson from computers. They must reduce their button counts. They must become more computerlike. In particular, they must adopt an operating system.

An operating system removes functionality from applications and takes it on itself. An operating system can provide an intuitive graphical user interface. Perhaps most important, an operating system establishes commonality among many different devices. Instead of presenting a hodgepodge of weirdly different controls, an operating system acts the same everywhere. The use of an operating system is why computers are so powerful, and it offers the only hope for home audio and video systems. Frankly, equipment designers and manufacturers have no choice. If they don't adopt an operating system, the companies that already use operating systems will simply begin to build soft-

ware-based equipment that is much better than old-fashioned hard-wired stereo equipment.

In fact, one company that makes operating systems has already foreseen the need for a simple, portable operating system and has developed one. The company is Microsoft, and the operating system is Windows CE, a much-simplified version of the world-standard Windows operating system. Windows CE is already widely used in handheld PCs, and mobile-electronics companies are embracing it for in-car PCs. Windows CE can do away with all those buttons littering your listening room. Is Windows CE perfect? Of course not. But it may be our only chance, as frustrated users, to keep up.

Now, as I reach the end of another article, I can't help but reflect on my poor typing skills. Sure, the computer helps enormously. But that pesky ASCII keyboard is still an obstacle to my button-adverse fingers. My eye turns to a mail-order ad for voice-recognition software that promises efficient speech-to-text translation. Hmm . . . that would leave only six buttons — something my ten fingers might actually be able to handle. □

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Juian Hirsch
Stereo Review, May 1997

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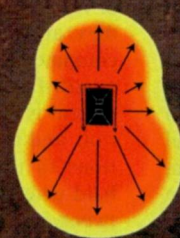
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Pioneer DV-505 DVD Player

KEN C. POHLMANN, HAMMER LABORATORIES

If it's spring, it must be time for the flowers to blossom and for the new DVD players to arrive. It's hard to believe that the DVD-Video format is a year old and that manufacturers are now bringing their second-generation models to market. But what's important isn't just that the players are new, but that their designs incorporate improvements made as a result of feedback from dealers, consumers, and perhaps even a few magazine reviewers. Moreover, if the new models follow historical precedent, their prices should be somewhat lower than first-generation players as well.

The Pioneer DV-505 is one of a trio of new players from that Japanese titan of consumer electronics. It's an entry-level model featuring a 10-bit video digital-to-analog (D/A) converter and a 96-kHz/20-bit PCM audio D/A converter. In addition, it features a Virtual Dolby surround-sound simulator and a new video processing chip said to provide better performance than first-generation chips.

The DV-505's spartan front panel follows the norm and could easily be confused with those of most other DVD or CD players. There are play/pause, stop, open/close, and forward and reverse track-skip and chapter-skip but-

tons. The fluorescent display can be turned off by pressing a button. The power button performs as advertised, and when the player is turned off, a standby indicator is lighted. The front-panel display provides alphanumeric characters to spell out various operating modes and diagnostic messages as well as chapter and track numbers and playing times. Other labels light up to indicate conditions such as Dolby Digital playback, 96-kHz audio playback, multi-angle playback, and last-memory play, which allows you to bookmark a DVD for later playback from where you stopped. A blue bar lights when a DVD is loaded.

The player's rear panel is modestly endowed. Four RCA jacks provide two pairs of analog stereo outputs. These can be used to play music CDs through

a conventional stereo system or to connect to a Dolby Pro Logic receiver. Coaxial and Toslink optical jacks provide digital audio output. During CD playback, they convey a linear PCM signal to an external D/A converter. During DVD playback, they send a Dolby Digital bitstream to an external decoder or an A/V receiver equipped with a decoder. Composite- and S-video connectors are provided, but there is no component-video output. A mini-jack is used to interconnect control signals with other Pioneer equipment. Finally, there is a detachable AC power cord. Like all other DVD players, this one uses CSS digital encryption to prevent copying of the bitstream and Macrovision signal modification to prevent copying of the analog signal.

As with most modern A/V equipment, the DV-505's operations are mainly handled via the infrared (IR) remote control, which looks much like most other remotes. It sports forty-three buttons, which duplicate the front-panel buttons and access a plethora of additional features such as last-memory play. Restart points for five different discs can be bookmarked in the player's memory.

Film buffs will appreciate freeze-frame, slow forward play (at speeds of one-half, one-fourth, one-eighth, and one-sixteenth), and frame-by-frame forward advance. Backward playback is also possible. The MPEG-2 video data-compression algorithm used in the DVD format is not backward-friendly, however, so it's not surprising that this player's backward playback jumps several frames at a time and that only one

FAST FACTS

DIMENSIONS 16½ inches wide,

4 inches high, 11¼ inches deep

WEIGHT 6½ pounds

PRICE \$635

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Web, www.pioneerelectronics.com

backward speed is available. As with other DVD players, the sound is muted during off-speed playback.

Other perks include a choice of aspect ratios (pan-and-scan, letterbox, and wide), playback from multiple camera angles, multiple playback languages, and multilingual subtitles. Those features are available, of course, only with discs that support them. You can also choose from three different picture qualities: Cinema (sharp and clear picture for images with high contrast), Animation (for bright, clear colors), and Standard Video (normal TV picture). Playback settings for up to thirty individual DVDs can be stored in the player's memory. A password-protected parental-lockout feature lets you choose eight levels of lockout for discs that are coded with a parental rating. Other transport features include title search, chapter/track number search, chapter programming, chapter/track or title repeat, A-B repeat, and chapter/track or title random playback.

To help tailor the player for the best sound quality, you can enable and adjust a dynamic-range compressor. Another interesting sonic feature is the Virtual Dolby surround-sound simulator, which is designed to provide enhanced spatiality when the analog output is played back over two speakers. The DV-505 player implements Virtual Dolby with a TruSurround chip made by SRS Labs.

Like other DVD players, the DV-505 uses an on-screen graphical user interface (GUI) to guide the user through

the various setting options, such as the analog and video output modes. The GUI can be accessed by pressing the Menu button when playback is stopped. Although workable, I found it to be relatively cumbersome. The on-screen controls are not especially intuitive or logical. Moreover, the graphic design of the menus and help screens is crude and aesthetically unappealing, which diminishes the "wow" factor you'd expect from a technology as nifty as DVD.

A simple readout of basic disc information, which overlays the video picture, can be called up by pressing the Display button. It shows the current title/chapter numbers, the playback time, the language selected, the audio output mode, and, if desired, the bit rate of the decoder.

Of course, most DVDs contain their own menus, which can be accessed by pressing the Menu button while the disc is playing. Generally, these on-disc menus are nice-looking and put the DV-505's own GUI to shame. The owner's manual, by the way, gets a thumbs down for being confusing.

For my viewing and listening tests, I connected the DV-505's optical digital audio output and S-video output to my Denon A/V receiver. I also connected the player's analog audio outputs to a stereo amplifier so that I could check out its D/A converters. I first auditioned

a number of DVD movies (it's a tough job, but at least I'm being paid to do it). Until I get sick of it, one of my current favorites is *Terminator 2*, featuring an awesome 5.1-channel Dolby Digital soundtrack and a very cinematic-looking transfer. The DV-505 did a great job of reproducing this action-packed blockbuster. I saw no video artifacts, and the resolution and hue looked great. The picture delivered by the DV-505 certainly was on par with that from other mid-line DVD players I have tested, and perhaps it would challenge higher-end players as well.

I was also impressed with the player's three picture settings. I tried these on a number of different DVDs, and found them to be quite helpful in tweaking the picture's brightness, contrast, and hue. A few high-end DVD players provide comprehensive picture controls; the three global settings offered by the DV-505 are a reasonable (and easy to use) alternative to comprehensive controls.

Like other DVD players, the DV-505 had no problem delivering an error-free Dolby Digital bitstream to the DD decoder in my receiver, and the decoder had no problem handling the data and pumping out goodly amounts of surround sound. Just for kicks, I tried the player's Virtual Dolby surround-sound mode, playing the output signals directly into a stereo system. Clearly, the surround effect was not as profound as when a DD soundtrack is played back over six speakers, but it was somewhat better than straight two-channel stereo, and it added a dimension to movie playback. Still, if you've invested in a DVD player, you should run, not walk, to the store to buy a 5.1-channel A/V receiver and more speakers.

It was with great anticipation that I loaded in a Chesky Records Sara K. demo DVD (not for commercial release) encoded with a 96-kHz sampling rate and a 24-bit word length. The DV-505 accepted the disc, showed its still menu and graphics on the screen, and played back some terrific-sounding music. Without having had the opportunity to compare this recording with a lower-specification version from the same master, I cannot say if the recording's high fidelity was due to the higher sampling rate and word length, but it was clear that these new specs hold great potential for music lovers. You should be aware that the DVD-Audio



MEASUREMENTS

DVD VIDEO PERFORMANCE

Composite-video output and Standard Video mode used throughout.

Setup level.....	7.5 IRE*
100%-white-level error.....	0 IRE*
Differential phase.....	<3°
Differential gain.....	<1%
Chrominance nonlinear phase.....	<2°
Chrominance nonlinear gain.....	<2%
Horizontal luminance frequency response	
at 4 MHz.....	-0.72 dB
at 5 MHz.....	-1.94 dB
at 6 MHz.....	-4.44 dB
Equivalent on-screen resolution	>480 lines

* an IRE is a standardized unit of contrast

** decibels referred to digital full-scale

CD AUDIO PERFORMANCE

Except for distortion, all test signals were dithered, which limits measured performance for noise level and distortion, and all were two-channel stereo.

Maximum output	2 volts
Frequency response (20 Hz to 20 kHz)	
de-emphasis off.....	+0, -1 dB
de-emphasis on.....	+0, -1 dB
Noise (A-wtd, re -20-dBFS** input)	
normal (de-emphasis off).....	-73 dB
Excess noise (without signal)	
16-bit (EN16).....	3.4 dB
Distortion (THD+N, 1 kHz)	
at 0 dBFS**.....	0.003%
at -20 dBFS**.....	0.023%
Linearity error	
at -90 dBFS**.....	-1.4 dB
Defect tracking	
(Pierre Verany test disc).....	300 μm

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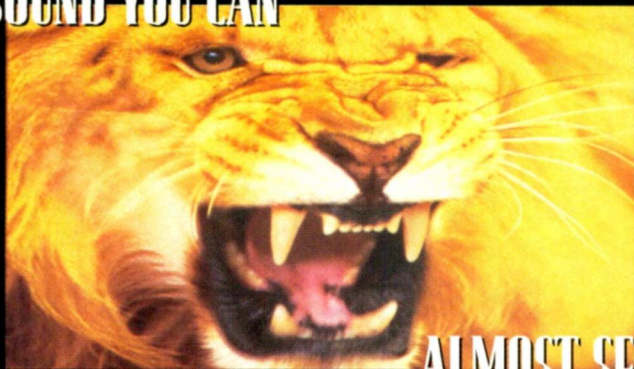
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format (which is expected to include a 96-kHz/24-bit option) has not been finalized, and while the current proposed format is partly compatible with this player, actual DVD-Audio discs — when they become available — will use a different copy-protection system and offer additional features that will be incompatible with it. Meanwhile, the DV-505 can handle DVD-Video discs that use the higher audio specifications.

Of course, the DV-505 also plays old-fashioned CDs. I listened to a number of CDs and was satisfied with the player's sonic abilities. Its stereo D/A converters did a good job of reproducing music, and overall the player is competitive with many mid-line CD players. Unfortunately, it cannot play back CD-R discs.

After watching and hearing the DV-505, I moved it onto my test bench to check its vital signs. The player essentially received a clean bill of health, with neither particularly strong nor particularly weak test results. A few items are worth noting. Its analog frequency response showed a gentle rolloff starting exactly at 2 kHz and proceeding down to exactly -1 dB at 20 kHz. Because this occurred with two samples of the player, we figured that the rolloff was purposely designed into the player's filters. Indeed, a Pioneer spokesman later told us it was done to reduce total harmonic distortion. While very small in comparison with a player whose response is flatter, the rolloff might be audible with some music. Another deviation, probably *not* intentional, was a 0.75-dB imbalance between channels.

The transport was able to negotiate only a 300-micrometer disc defect, barely exceeding the 200- μ m CD-player performance requirement. That's not great, but it's probably good enough if you keep your discs free of scratches. Other audio measurements, such as noise and distortion, were respectable. Overall, from a numbers standpoint, this player is fine.

The march of technology is truly impressive. For the price of a decent CD player a few years ago, you can now buy a DVD player that plays CDs with equal or superior fidelity as well as 96-kHz music DVDs and DVD movies. Although the DV-505 is an entry-level player and lacks such niceties as comprehensive backward-playback modes and a refined GUI, it is still a tempting piece of hardware. If you're waiting to take the DVD plunge, the DV-505 may push you over the edge. □



Paradigm Monitor 70P Speaker

DAVID RANADA, TECHNICAL EDITOR

Reviewing Paradigm's Monitor 70P was somewhat like a case of déjà-vu. I heard similar sound quality from the last Paradigm speakers we examined, the PS-1200 home-theater system (see user's report in October 1997). This sonic similarity was not unexpected, as the Monitor 70P shares more than a little technology with two of the speakers in the PS-1200 system, with the added twist of a built-in powered subwoofer.

The Monitor 70P is a four-driver, three-way bass-reflex system. As a floor-standing speaker, it is on the short side, though well proportioned. It uses the same 1-inch titanium-dome fluid-cooled tweeter and 6½-inch copolymer poly-

propylene-cone midrange driver as the Mini Monitor front-left/right satellites in the PS-1200 system, although the 6½-inch drivers in the latter are called

woofers. The 70P's tweeter/midrange crossover frequency is given as 2 kHz; for the Mini Monitor it's 1.8 kHz. Below 200 Hz the Monitor 70P's midrange driver crosses over to a pair of 6½-inch mineral-filled polypropylene-cone woofers with a front-panel port.

The two low-frequency drivers are not driven by the system amplifier or receiver. Instead, they are connected to an internal power amplifier, rated for a continuous output of 140 watts. In calling the woofers and their amplifier a powered "subwoofer," Paradigm is using the term loosely. Traditionally, "subwoofer" designates a speaker that takes over below the operating range of a normal woofer — say, below 40 to 80 Hz — and not in the upper-bass region as in the Monitor 70P.

You can, however, get traditional subwoofer performance out of the Monitor 70P if you use the line-level subwoofer-only input on its rear panel, intended for hookup to the subwoofer output of a surround-sound amplifier or receiver. Signals entering this input are low-pass-filtered at 80 Hz by the speaker's internal crossover before being amplified. You'll still have to hook up the midrange/tweeter part of the system using normal speaker cables and the set of standard multiway binding posts on the rear panel. The line-level subwoofer input has its own rear-panel volume control, providing some degree of control of the amount of low-bass output from the speakers. But with most systems, if you use this input you should adjust the subwoofer level at the main system amplifier or receiver so that the bass remains balanced between the left and right speakers.

It's simpler to connect the Monitor 70P like a regular speaker, using only the multiway binding posts, and that is therefore the hookup most likely to be employed. In that case, the Monitor 70P behaves like a full-range speaker with a bass-level control. The speaker also allows for two types of bi-amplification hookups as well as biwiring.

Although Paradigm's product brochure shows the Monitor 70P without its removable grille, never seriously listen to this speaker without the grille, especially when you audition it in a dealer's showroom. While most speakers that come with grilles are indeed designed to be heard with them on, their effect in this case is more significant than with many other models. Each grille is designed as a "low-diffraction" device, and the shape of its

FAST FACTS

DIMENSIONS 39 inches high, 8¼ inches wide, 14¼ inches deep

WEIGHT 55 pounds

FINISH light or dark cherry or black ash vinyl laminate

PRICE \$1,199 a pair

MANUFACTURER Paradigm, Dept. SR, MPO Box 2410, Niagara Falls, NY 14302; telephone, 905-632-0180; Web, www.paradigm.ca

wooden frame meshes with the various surfaces around the tweeter and mid-range to create what the manufacturer calls a Controlled Waveguide, which is said to promote "wide-dispersion, high-frequency performance." Our measurements and listening tests confirmed that the Monitor 70P's grille has a definite — and positive — influence on the speaker's sound quality, flattening its response around the tweeter/midrange crossover frequency.

The Monitor 70P's manual says that "the most accurate timbral balance will be achieved with the tweeters at approximately ear level." Believe it. In our listening room, the height of my ears when I'm seated is about 1 meter (39³/₈ inches) above the floor, which is also, not coincidentally, how high our reference mike normally sits when I'm doing lab measurements. This puts both my ears and the microphone 4 inches above the plane of a Monitor 70P's tweeter, which sits 35³/₈ inches above the floor. Even from 2 to 3 meters away, the "above-axis" sound quality I heard when seated normally was different from, and slightly inferior to, what I heard when I slouched down in the

chair so that my ears were at tweeter height.

The difference was easy to hear with pink noise and with musical material containing repetitive or sustained dense high-frequency sounds (such as cymbals in pop music). In the above-axis listening position, there was a touch of both nasality and sibilance on some vocals, and massed strings had both a slight lack of presence and a bit of excess brightness. The moral of this tale is simple: try to audition these speakers while sitting at the same height as your listening room's furniture.

When I listened from a slouched position, a posture that is not comfortably achieved on our room's furniture, the sound of the Monitor 70Ps was noticeably better. The sound was rather good, in fact: similar to, though definitely not as uncolored as, that of the Mini Monitor satellites of the PS-1200 system (conveniently, we still had them around as sonic references). Imaging was excellent, about as good as it gets in terms of tightness and depth with speakers of conventional radiation pattern. Even using the simple speaker-level hookup (*without* the line-level subwoofer in-

put), the system provided excellent dynamic range, thanks mainly to the power available for the woofers.

Measurements showed where the main differences between the above-axis and on-axis sound quality originated. Our "listening window" measurement, an average of seventeen quasi-anechoic frequency responses taken in a 30-degree vertical arc and a 60-degree horizontal arc across the front of the speaker, with the mike 1 meter above the floor and 2 meters from the front panel, gave a response deviation of +2.5, -2.6 dB between 1 and 12 kHz. The most important characteristics of the deviation were a -2.6-dB "crossover" dip between 1 and 2.5 kHz, a rise to +2.5 dB at 6 kHz, and a rather rapid dip to -2.6 dB at 10 kHz. It is these dips and bumps that created the sound qualities I described.

At frequencies higher than 10 kHz, the response steadily rose above the 1-kHz level, to +5.9 dB at 18 kHz, but this rise was far less audible on most program material than the lower-frequency deviations. All of these deviations also showed up in a one-third-octave room-response spectrum.



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At the very low end, the speaker produced solid output down to below 35 Hz and usable output down to 25 Hz. It was capable of handling the most outrageous pipe-organ music, movie-soundtrack explosions, and the dynamic special effects of *Contact* on DVD, if you want to use a pair of these speakers as the anchors of a home theater.

When I remeasured with the mike at tweeter level, both the dip between 1 and 2.5 kHz and the bump at 6 kHz were slightly reduced, for a total response spread of ± 2 dB, a numerically small but sonically noticeable improvement. Curiously, considering the similarity in their design and construction, not even the Monitor 70P's on-axis response was as flat in this frequency region as a similar measurement of the Mini Monitor.

A normally innocent measurement, speaker impedance, pointed out one significant advantage of the Monitor 70P's built-in subwoofer. Its impedance dipped to its minimum value of 5.8 ohms at 339 Hz and 7.6 kHz, which should not present a problem to most modern amplifiers and receivers (it is definitely "compatible with 8 ohms," as

Paradigm's spec sheet claims). What's unusual is the absence of the impedance dip in the low bass that normally occurs with vented speaker systems. Instead, at 100 Hz the impedance was up to 13.7 ohms, by 50 Hz it had risen to 31.5 ohms, and at 20 Hz it had reached an unusually high 78.8 ohms.

These high values are to be welcomed. They mean that the speaker will be drawing little current — and therefore very little power — at low frequencies, leaving more power from the system amplifier or receiver to supply to the high-frequency drivers of the Monitor 70P, even if only the normal speaker-level inputs are used. The subwoofer section, because of its built-in amplifier, doesn't need *power* from the system amplifier to operate correctly, but if you use only the speaker-level inputs, it must still receive the high *voltages* provided by high-power amplifiers. You'll still need a high-power system amplifier to reach high volume levels unless you use the line-level subwoofer input, an important point in its favor.

And the behavior of the subwoofer section of the Monitor 70P produced its best sonic characteristic: it could very

clearly produce high levels of low frequencies. At loud peak sound-pressure levels (SPLs) equivalent to 90 and 95 dB — meaning, when driven by signals that should produce 90- and 95-dB SPLs given the speaker's rated 91-dB sensitivity — the speaker passed all our shaped tone-burst tests from the starting frequency of 800 Hz down to 25 Hz. At an even louder 100-dB drive level, some slight port noise became audible at 31.5 Hz and below. It took a *very* loud 105-dB-equivalent drive level to produce gross misbehavior of the woofer section (audible distortion at 80 Hz, bad distortion at 63 Hz and below). This excellent low-frequency-overload behavior (unusual in a speaker of this size), in conjunction with a lack of mechanical resonances throughout the audio range, gave the Monitor 70Ps a sense of clean, latent sonic power. Even though I have reservations about built-in subwoofers generally — like all full-range speakers, those with built-in subwoofers cannot be positioned for the best imaging and the best bass performance simultaneously — the Paradigm Monitor 70P is nonetheless an unusually good exemplar of the breed. □



McIntosh MAC-3 Dolby Digital Decoder

DANIEL KUMIN, START LABORATORIES

While the Dolby Digital revolution is inarguably in full swing among A/V receivers, there are considerably fewer new stand-alone digital-surround processors these days. Fewer still are of a quality level and configuration appropriate for upgrading a high-performance, top-quality two-channel music system.

McIntosh, the venerable New York State firm known for high quality since literally the birth of the audio hobby, has increased that population by one with its new MAC-3 Dolby Digital (DD) surround decoder. This is an up-to-the-minute digital processor, but it's still every inch a McIntosh. And that means — first things first — a front panel with a silk-screened glass cover and illuminated green labels and readouts, the antique McIntosh logo at the center top, and two familiar, rather retro, chrome-edged knobs.

The left-hand knob selects among one analog and four digital inputs, and the opposite knob is the master volume control. A row of nine switches completes the front-panel controls. Eight are pushbuttons for selecting the surround mode, selecting the Late Night

mode (DD dynamic-range compression) or the Cinema-EQ (treble-rolloff) mode, and setting delay times and channel levels. The ninth, in the center, is an on/off power rocker switch. A grouping of loudspeaker icons at the upper left represents the 5.1 channels of a Dolby Digital system. Each icon lights to indicate when its channel is active. With PCM input, whether matrix-encoded or plain stereo, only the (front) L and R icons and the S (subwoofer) icon light up.

Inside, the MAC-3 is very solidly built, just as I'd expect any McIntosh product to be, with a spacious layout and an unusually elaborate, massive power supply. Digital signal processing (DSP) is managed by two Motorola

56000-family chips, which are common in Dolby Digital equipment. Six channels of 20-bit digital-to-analog (D/A) conversion produce the six DD analog outputs, while a stereo 20-bit analog-to-digital (A/D) section handles analog inputs. All six analog output stages appear to use fully discrete-component topology.

Around back the MAC-3 is also well equipped, with a single set of analog input jacks and optical and coaxial digital jacks for four sources. The optical and coaxial jacks in each pair can be connected to different sources, and the active input will automatically be selected. But if both are active, the MAC-3 simply mutes and you get nothing. Besides audio line outputs for Dolby Digital's standard six channels, there are pairs of 1/8-inch in/out jacks for remote control and automatic turn-on/off in an all-McIntosh system.

The MAC-3 handles the DD bass-management options with four miniature slide switches on the back, for small/large front and surround speakers, small/large/none for the center speaker, and subwoofer on/off. Other rear-panel switches select automatic or manual circulating noise signals for level matching and disable the front-panel infrared (IR) sensor in favor of a hard-wired central-remote connection.

I listened to the MAC-3 processor in a stand-alone arrangement with my DVD and laserdisc players feeding it Dolby Digital/PCM and AC-3/RF signals directly. No remote control is supplied with the MAC-3, but it can be

FAST FACTS

DIMENSIONS 17½ inches wide, 3½ inches high, 16½ inches deep

WEIGHT 32 pounds

PRICE \$2,500

MANUFACTURER McIntosh, Dept. SR, 661 W. Redondo Beach Blvd., Gardena, CA 90247; telephone, 888-979-3737; Web, www.mcintoshlabs.com

controlled by the McIntosh MX130 preamp's remote, which the company sent me to try out (it's a \$70 option without the preamp). I connected my CD player both to the processor's analog inputs and to one of its digital inputs to enable critical listening via its A/D stage as well as direct digital.

Operating the MAC-3 was exceedingly simple in this solo setup. The front-panel input selector (or remote key) chooses the source. The Surround button (or remote button) toggles between 5.1-channel and two-channel Dolby Digital decoding modes or between Pro Logic and plain-vanilla stereo options with a PCM or analog input.

The results were exemplary in every respect. Comparing CDs played through the analog and digital inputs revealed only a vanishingly tiny noise difference and change in the "grain" of the background with the most critical material, both really perceptible only in headphone listening (which required an external headphone amp, as the MAC-3 lacks a headphone output). That testifies to an excellent A/D stage, a definite advantage in optimizing the surround performance of analog sources.

In its surround modes the MAC-3 was just as impressive. Both Dolby Pro Logic (DPL) and Dolby Digital performance were just about state of the art. Real-world noise was exceptionally low in both modes — no doubt thanks in some part to the simplified setup's enhanced freedom from ground loops. In performing its digital-domain DPL decoding, the MAC-3 was laudably free from such surround-channel artifacts as pumping and noise fades. Front-stage "steering" was exceptionally smooth and stable as well. And the processor's freedom from leakage of center signals to the left, right, or surround channels (or vice versa) was very little short of astonishing, the best I've heard by a significant margin.

With one debatable exception, on the test bench the MAC-3 delivered outstanding results in test after test. (Note that our new "level-playing-field" reference levels — 200 mV, 1 watt, -20 dBFS — yield noise, distortion, and separation results that "look" typically 15 percent or so "worse" than the usual spec-sheet measurements you may see. Always be sure to compare apples with apples.) In areas such as Dolby Digital noise, channel separation, and subwoofer output, the MAC-3 equaled or bettered the top results I've seen.

The exception in the measurements

was the subwoofer-output distortion, which under worst-case, but typical, operating conditions (all main speakers set to "small") never fell below 14 percent at any setting of either the master volume control or the subwoofer level control. This behavior probably indicates that the MAC-3's bass management is accomplished mainly in the digital domain and that the calculations essentially run out of numerical dynamic range, causing distortion before the signals are converted to analog form. There is some controversy as to whether the Dolby Labs test signal we use — a maximum-level, 30-Hz tone in all 5.1 channels — accurately represents what Dolby Digital movie soundtracks deliver in practice. I doubt that it does. In any case, I never heard any distortion misbehavior from the subwoofer output in listening tests, and the problem dis-

appeared altogether when I used the "large" setting for all speakers.

Does a \$2,500 Dolby Digital/DPL processor sound better than, say, a \$700 one? Populist that I am, it pains me to say it, but in this case I'm afraid so. This is, naturally, a very subjective judgment, since I made no direct comparisons (nor are these really practical), so I can speak only from aural memory, a famously unreliable source. In any event, with a few exceptions the differences I heard were generally modest — even most "budget" DD/DPL decoders I've auditioned have sounded great. But if cost is *not* a factor, the MAC-3 is an excellent way to add Dolby Digital (and Pro Logic) capabilities to an existing McIntosh or similar-grade two-channel system. In that context, it will deliver surround performance that is surely close to as good as it can get. □

MEASUREMENTS

DOLBY DIGITAL (AC-3) PERFORMANCE

All data obtained from Dolby Labs' test DVD using dithered test signals, which set limits on measured distortion and noise. Reference input level is -20 dBFS*; reference output level is 200 mV unless otherwise stated. The resulting volume setting was 75. All are worst-case figures unless otherwise noted.

Distortion (THD+N, 1 kHz)	<0.05%
Noise (A-wtd)	-72.6
Excess noise (with signal)	
16-bit [EN16]	3 dB
Frequency response	
20 Hz to 20 kHz +0, -0.13 dB	
Channel imbalance	0.23 dB
Subwoofer output frequency response	
(-3 dB at 80 Hz)	24 dB/octave rolloff
High-pass-filter frequency responses	
(-3 dB at 80 Hz)	12 dB/octave rolloff
Max. unclipped subwoofer output (see text)	
Subwoofer distortion	
(volume set at 75)	17%

DOLBY PRO LOGIC PERFORMANCE, ANALOG INPUTS

All figures are worst cases; reference input and output levels are 200 mV unless otherwise stated.

Frequency response	
front/center	20 Hz to 20 kHz +0, -0.35 dB
surround	20 Hz to 6.5 kHz +0, -3 dB
Noise (A-wtd mV)	-71.9 dB
Distortion (THD+N, 1 kHz)	<0.044%
Surround-decoder input-overload margins (at 1 kHz)	
front (re 2-volt input)	+11.5 dB
center (re 1.4-volt input)	+3.4 dB
surround (re 1.4-volt input)	+3.2 dB

Channel separation

surround out, right driven54 dB

STEREO PERFORMANCE, DIGITAL INPUTS

All data obtained using dithered test signals, which set limits on measured distortion and noise. Reference levels are as with the Dolby Digital measurements unless otherwise stated.

Linearity error (at -90 dBFS*)	+0.15 dB
Noise (A-wtd)	
normal (de-emphasis off)	-73 dB
de-emphasis on	-78 dB
Excess noise (without/with signal)	
16-bit [EN16]	2.9/2.9 dB
quasi-20-bit	18.9/18.9 dB
Distortion (THD+N, 1 kHz)	0.05%
Frequency response	
normal	20 Hz to 20 kHz +0, -0.16 dB
de-emphasis on	20 to 20 kHz +0.03, -0.18

STEREO PERFORMANCE, ANALOG INPUTS

Unless otherwise stated, input and output reference levels are 200 mV. Volume set at 75.

Sensitivity (at maximum volume)	73 mV
Input overload margin	
(re 2-volt input)	+11.6 dB
Distortion (THD+N, 1 kHz)	
200-mV input	0.028%
2-V input	0.003%
Noise (A-wtd)	
re 200 mV input/output	-64.8 dB
re 500 mV input/output	-72.8 dB
Frequency response	
20 Hz to 20 kHz +0, -0.26 dB	

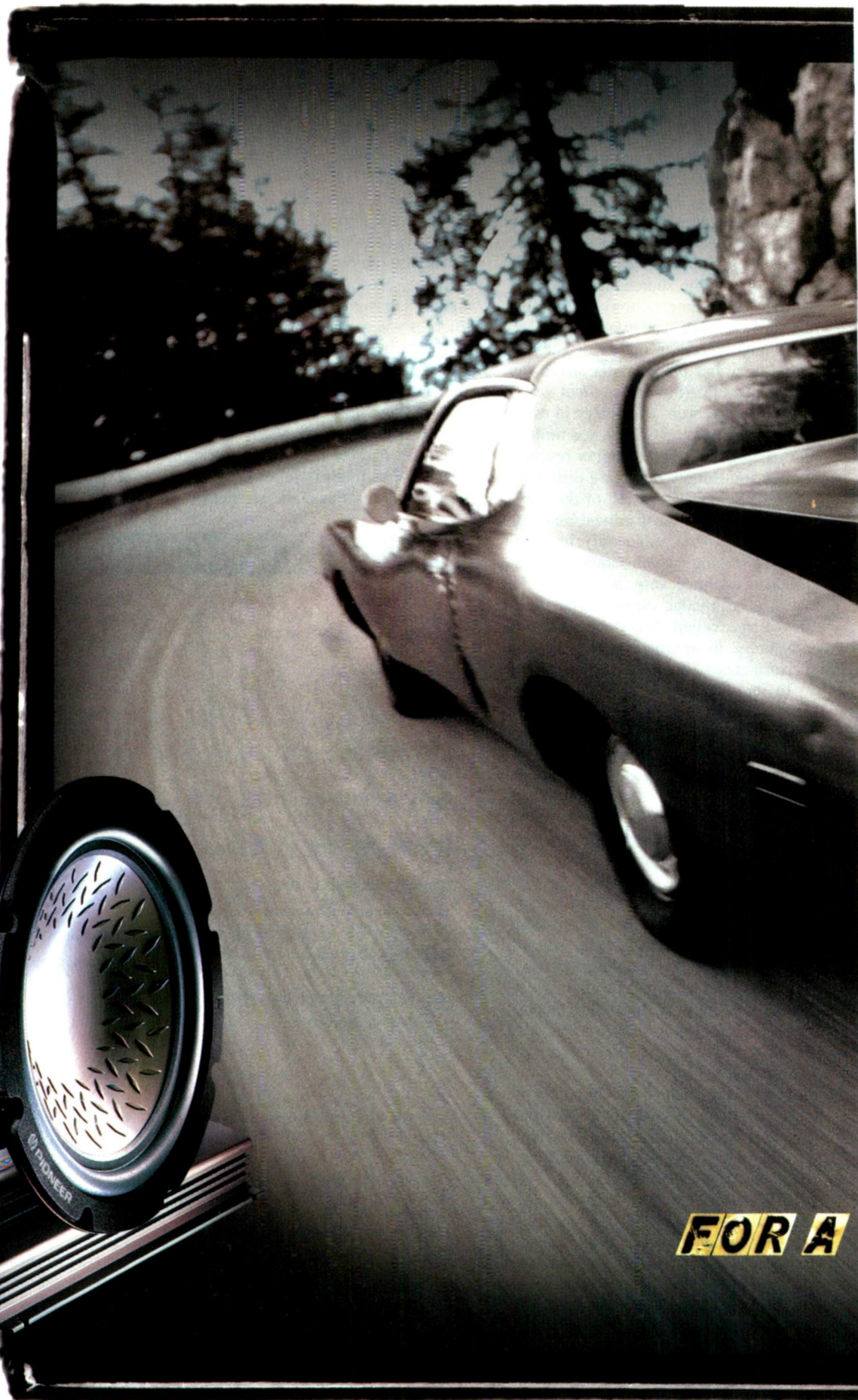
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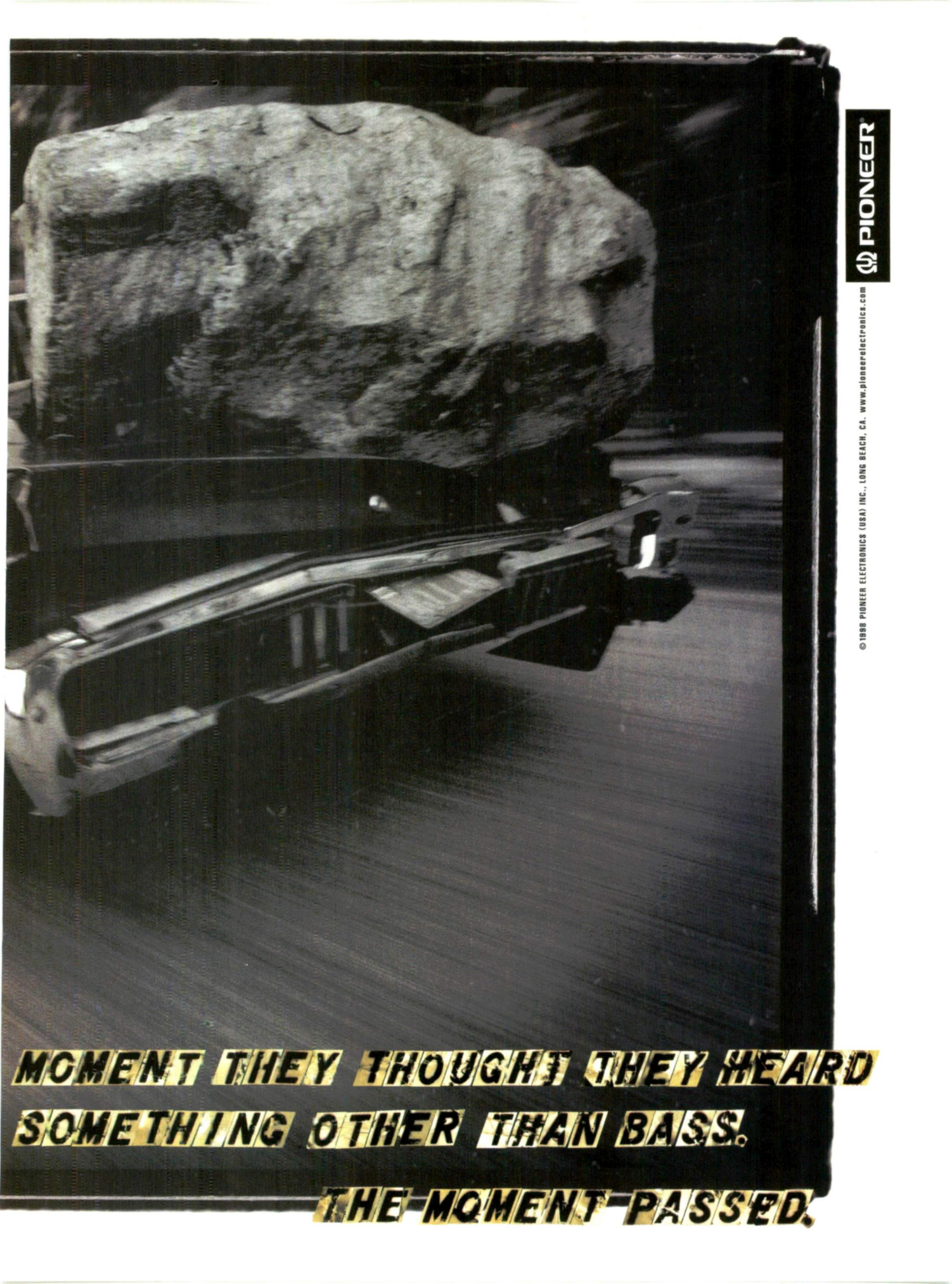
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ATI AT1505 Five-Channel Power Amplifier

DANIEL KUMIN, START LABORATORIES

Amplifier Technologies Incorporated (ATI) is a relative newcomer to the U.S. audio scene, but the people behind it are not. The company's founders were associated with the SAE brand, widely known in the 1960s and 1970s for unpretentious, good, value-oriented preamps, power amps, and other components. Although ATI's brand image appears to be a bit more upscale than was SAE's, its products also seem designed and priced more for measurable performance and value than for esoteric appeal. This translates to a line of sensible and unusually robust power amplifiers (ATI's only product category so far) that are not only designed but also made in the U.S.

The latest example, the five-channel AT1505, is built with obvious care and quality. It lists for \$1,695 and is rated to deliver 150 watts per channel into 8 ohms from 20 Hz to 20 kHz with less than 0.03 percent total harmonic distortion

plus noise (THD+N), or 225 watts per channel into 4 ohms. The plain but attractive front panel has a great big on/off rocker switch and five small clipping LEDs, each of which lights when its associated channel has reached maximum power and glows more steadily as it further exceeds the clipping level. These lit up obediently on the test bench but barely glimmered during multichannel listening until the system achieved fairly ridiculous volume levels.

FAST FACTS

DIMENSIONS 17 inches wide, 7 inches

high, 16 inches deep

WEIGHT 73 pounds

PRICE \$1,695

MANUFACTURER ATI (Amplifier Technologies Inc.), Dept. SR, 19528 Ventura Blvd. #318, Tarzana, CA 91356; telephone, 818-343-4777; Web, www.ati-amp.com

A very heavy, all-metal chassis holds the thick, subtly beveled front panel and the silver-gray steel top/side cover, which has a perforated cooling grille — a tasty touch. The whole business is assembled in solid, businesslike fashion with Allen-head screws, and the very decent finish quality extends to the folded-steel chassis pan and rear panel.

The rear panel presents a gold-plated RCA input jack and a heavy-duty, five-way speaker output, also gold-plated, for each channel. Each output terminal is also equipped with *two* bayonet-screw fuseholders and two LEDs. The dual 3-ampere fuses guard each channel's positive and negative voltage supplies, and the associated LEDs are there simply to indicate when the adjacent fuse has been called into action. The idea is that if a channel suddenly sounds *really* bad or falls silent you can get a quick fix on the problem by glancing at the back panel.

There are no input-level trim controls or on-board bridging facilities. The remaining rear-panel connectors include an IEC socket for the removable power cord — ATI supplies a high-quality, heavier-than-usual cord — and a computer-style DB-25 multichannel connector, still relatively rare on A/V components. The multipin connector accepts a five-channel (unbalanced) audio

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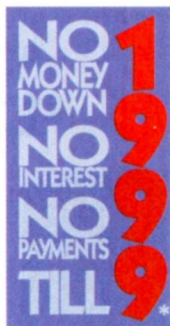
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signal and a low-voltage DC on/off trigger from a single DB-25 cable.

Under the AT1505's hood, a very large toroidal power transformer is mounted on edge just inside the front panel. It has individual plus and minus secondary windings for each channel, a refinement that is said to reduce hum a bit and to decrease interaction among the channels. Behind the transformer are five identical power-amp modules, each of which has its own heat sink and contains all the other requisite circuitry for a single channel, including power-supply rectifiers and filter capacitors. The modules are designed for easy removal by a qualified technician. Construction is entirely first-rate, with lots of top-grade parts. ATI also provides a generous seven-year warranty covering parts and labor.

ATI says that the AT1505 design is fully complementary from input to output; that is, the circuit topology is symmetrically balanced. It's also DC-coupled throughout except for the first input stage, which can help preserve waveform integrity at near-overload levels. Each channel operates in Class A mode right up to the driver stage, where it controls an individual output stage composed of eight high-current bipolar transistors — all solidly high-end stuff. ATI further reports that thermal-protection sensors on each channel's heat sink are designed to shut down the amplifier if it overheats. That did not happen during my use or lab tests, not even after I let all the channels clip for several minutes, but shorting an output with a screwdriver (don't try this at home!) did pop the fuses.

On the test bench, the AT1505 easily surpassed its quite stringent power specifications, delivering just over 200 watts into a single-channel 8-ohm load, and half again as much into 4 ohms. Rather impressively, the maximum 8-ohm output with all five channels driven simultaneously in phase was 157 watts per channel. This test induced an AC-power-line sag (from idle) of about 7 volts in my studio, which is a tad less than I've seen with some other high-power multichannel amps. Dynamic headroom measured 1.6 and 2 dB at 8 and 4 ohms, but note that these figures really reflect clipping headroom more than true dynamic reserves, since the amplifier clipped at nearly the same levels regardless of whether the test signal was continuous or on/off tone bursts.

Noise and distortion were equally exemplary. Noise referred to 1 watt was

just shy of -100 dB (about -121 dB referred to full output), which is more than admirable. Distortion (plus noise) remained below 0.02 percent at any power level from a few watts up to clipping. Frequency response was perfectly flat except for an inconsequential 0.14-dB droop at the very top of the band. Even more notable (and probably more important), the response measurements of all five channels were nearly identical, fitting within an utterly minuscule ± 0.05 -dB window — very impressive!

I auditioned the AT1505 in my home-theater reference system, which com-

With multichannel program material, I was unable to induce audible stress even at a very loud volume level.

prises a suite of moderate-sensitivity speakers: B&W Model 803 Series 2 and HTM speakers up front (left/right and center) and a pair of Citation 7.3 switchable dipole/bipole surround speakers. I did not employ a subwoofer. Source material included CDs, DVDs, and laserdiscs.

After I chased down and eradicated a distracting ground-loop buzz, the ATI AT1505 was marvelously quiet, emit-

ting just a faint, "white" whoosh on the ear-to-the-tweeter test and virtually no buzz. Potentially more important in many rooms, the amplifier was entirely free of any perceptible *mechanical* buzzing from its power transformer, something that's far from universally true of big, high-power multichannel amps.

In terms of ease of use — well, what's to use? The AT1505 has no input-level controls to set, no special functions or features to learn, and no displays to watch other than the clipping LEDs, which rarely light at normal volume levels. About the only eccentricity I can cite is that since it employs no output relays, the AT1505 continues to play for many seconds after its power is cut off, gradually fading into distortion as its capacitors discharge. I could not try out the automatic on/off feature as it requires a preamp or other controller equipped with a DB-25 connector, so there was nothing left to do but listen.

That I did, extensively and with great pleasure. With multichannel program material, whether movie soundtracks or music recordings (including a couple of 5.1-channel music discs), I was unable to induce audible stress at any reasonable to very loud volume level. While playing two-channel stereo recordings, the AT1505 produced ample clean volume from the B&W 803/2 speakers, although the clipping indicators did occasionally flash — we're talking seriously loud volumes here.

Musically, the ATI-powered system sounded very neutral to my ear, with impressive dynamic reproduction and smooth but unrestricted treble. Stereo imaging was excellent, and surround imaging with the best 5.1-channel recordings available to me, such as *DVD Spectacular* on Delos, was literally spine-tingling. Bottom-octave extension and overall sonic ease were almost as impressive. In terms of how it performs, the AT1505 concedes nothing to the other high-power multichannel amplifiers I've encountered.

ATI has produced a very fine amplifier that falls solidly in the middle of the current pack in terms of pricing. The AT1505's performance is indisputably top-shelf, which qualifies it as a paragon of value for home-theater, surround-sound power applications. □



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MEASUREMENTS

All data reflect worst-case one-channel operation except as noted.

Output at clipping (1 kHz)

8 ohms209 watts
 8 ohms (all channels driven)157 watts
 4 ohms339 watts

Clipping headroom

(re 150-watt rated output)1.4 dB

Dynamic headroom

(re rated output, one channel driven)
 8 ohms (re 150 watts)1.6 dB
 4 ohms (re 225 watts)2.0 dB

Distortion (THD+N, 1 kHz, 8 or 4 ohms)

at rated power (150 or 225 watts)...<0.02%
 at 1 watt<0.05%

Sensitivity (for 1 watt output)101 mV

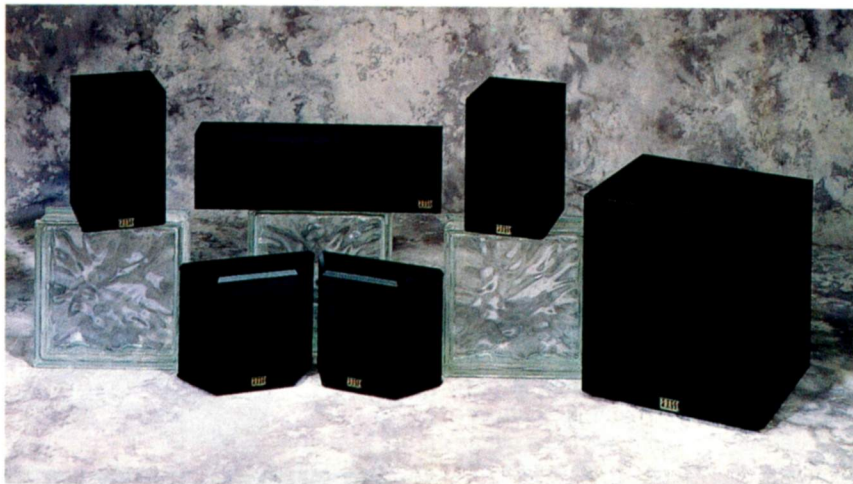
Frequency response

20 Hz 20 kHz +0, -0.14 dB

Noise (re 1-watt output).....<-99.5 dB

Channel balance

(any channel re any other)±0.06 dB



Phase Technology Home Theater Speaker System

KEN C. POHLMANN, HAMMER LABORATORIES

Surround sound is the sound of the future because it provides a more realistic, immersive listening experience. However, because the amplifier and speaker requirements are multiplied compared with two-channel sound, the cost of surround systems may be beyond the reach of some folks. In particular, because speaker manufacturing does not enjoy the same economies of scale as chip fabrication, the need for at least six speakers can pose a substantial cost barrier.

Like other companies, Phase Technology has tackled the problem of designing home-theater speakers that are both cost-effective and good-sounding. However, whereas some U.S. speaker companies merely build their own boxes and insert foreign-made drivers, Phase Technology manufactures not only its enclosures but also most of its own drivers. Because U.S.-made products tend to be more expensive than what is available overseas, Phase Technology would seem an unlikely candidate to achieve a price breakthrough. To evaluate its success, I rounded up no fewer than eight Phase Technology speakers: four Teatro 2.5 bookshelf speakers (\$100 each), two DS T surround speakers (\$125), one Teatro Center speaker (\$200), and one Octave Power 10 subwoofer (\$400). I tried the system both with four Teatro 2.5 satel-

ites and with two of them in front and a pair of DS Ts in the rear.

The Teatro 2.5 is the epitome of a bookshelf speaker. The small rectangular cabinet measures 10½ inches high, 6½ inches wide, and 8 inches deep, and it's finished in black or white vinyl veneer with a removable grille cloth. The 5¼-inch woofer has a polypropylene cone and a butyl-rubber surround. A 1-inch soft-dome tweeter handles everything above 2.5 kHz. The woofer and tweeter are phase-aligned at the crossover frequency, which is said to provide a more even vertical dispersion. The bass-reflex enclosure has a rear port positioned directly behind the woofer.

The Teatro 2.5's power-handling capability is given as 75 watts and its sensitivity as 89 dB sound-pressure level (SPL) with a 1-watt input measured at a distance of 1 meter. Bandwidth is stated as 55 Hz to 20 kHz and nominal impedance as 8 ohms. Shipping weight is 18 pounds per pair. Spring-loaded wiring terminals are used, and the cabinets have a mounting slot for wall hanging.

The DS T surround speaker has a trapezoidal cabinet measuring 6¼ inches wide in front and 10¾ inches in back, 9¼ inches high, and 4 inches deep. It is finished in black or white vinyl with a nonremovable grille cloth. The 5¼-inch woofer, the same driver as in the Teatro 2.5, fires forward. A

pair of 2-inch polycarbonate tweeters are employed, placed on the opposing angled sides of the cabinet and wired out of phase. This quasi-dipole design is intended to provide nondirectional sound. The drivers cross over at about 3.5 kHz. Power handling is given as 75 watts and sensitivity as 90 dB. Bandwidth is given as 80 Hz to 20 kHz and nominal impedance as 8 ohms. Shipping weight is 14 pounds per pair. Like the Teatro 2.5, the DS T uses spring-loaded wiring terminals and has a mounting slot to hang it on the wall.

The Teatro Center speaker has a rectangular cabinet finished in black or white vinyl with a removable grille cloth. It measures 6¼ inches high, 20 inches wide, and 7½ inches deep. One rear edge of the speaker cabinet is cut off at an angle. If the speaker is installed below a video screen, the cabinet can rest on that "side" so that the drivers are aimed upward at an angle. It has the same 5¼-inch woofer as in the Teatro 2.5 and DS T plus a passive radiator of identical construction (without the magnet assembly and voice coil).

Designers at Phase Technology think that interference between two driven woofers close to each other, as are used in many center-channel speakers, can cause frequency-response anomalies in horizontal off-axis areas, so they used only one in the Teatro Center. However, they felt that the unit needed a fuller sound than one driver could provide. Their tests determined that a passive radiator provided the enhancement they were looking for. Frequencies above 2.5 kHz are handled by a 1-inch soft-dome tweeter. Power handling is given as at 100 watts and sensitivity as 90 dB. The bandwidth is stated as 80 Hz to 20 kHz and nominal impedance as 8 ohms. Shipping weight is 17 pounds. The DS T uses spring-loaded terminals.

The Octave Power 10 powered subwoofer has a bass-reflex enclosure finished in black wood laminate with a removable grille cloth. It measures 15¾ inches high, 14½ inches wide, and 15 inches deep, including the controls, connectors, and heat sink on the back. The single 10-inch paper-cone woofer is accompanied by a single front-firing port. The grille cloth conceals a level control. The sub's crossover uses an 18-dB-per-octave low-pass filter; a potentiometer lets you select a cutoff frequency from 60 to 180 Hz. A 6-dB-per-octave high-pass output filter is fixed at 100 Hz. There is also a phase switch, a power switch, and a power cord. Two

RCA jacks accept left and right line-level inputs, and spring-loaded terminals are used for left and right speaker-level input and output. Of course, I prefer a line-level connection because it can result in lower noise and distortion, but if your system can't accommodate that, a speaker-level input will certainly suffice.

The sub's amplifier is rated to deliver 100 watts continuous and 200 watts peak. Servo-limiting is used to protect the speaker and prevent hard clipping. The subwoofer automatically turns on when a signal is applied and turns off about 10 minutes after the signal is withdrawn. Bandwidth is given as 35 to 180 Hz. Shipping weight is 35 pounds.

I installed the Phase Technology speakers in my listening room, a space with a floor that measures 15 x 23 feet and a ceiling that rises to 20 feet in one part. I placed four Teatro 2.5s on stands that elevated them about 3 feet from the floor, spacing them around the listening position. I placed the Teatro Center below my TV screen (I decided that the center channel sounded better coming from below the screen than above it).

The five main speakers presented a

minor (and chronic) problem: the spring-loaded wiring terminals could not accept my beefy speaker cables. I had to unbraid them to extract out a smaller wire bundle. Even then I was less than thrilled with the spring-loaded terminals' ability to bite into and securely hold the wires.

I placed the Octave Power 10 on the front wall about 6 feet from the corner of the room, connecting it to my receiver's line-level subwoofer output. I spent an hour moving and aligning the main speakers and adjusting the subwoofer's level control and low-pass filter, using pink noise and a real-time analyzer as well as music and my own ears, until I found appropriate settings.

I began by auditioning a few DVD movies. I was immediately struck by the high efficiency of these speakers and their very forward sound quality. Whereas some speakers seem dull and recessed, these certainly did not. They played loud even at moderate volume settings and had lots of presence, projecting a very dynamic sound that was entirely appropriate for movie playback. Moreover, they stood up very well to loud passages, putting out a lot

of sound before they began to distort. In particular, they capably handled the extended dynamic range of Dolby Digital (greater than Pro Logic's). Finally, I was impressed by their relatively flat response, which I later verified with informal frequency-response measurements in my listening room.

I am resolute in my belief that a center-channel speaker should match the timbre of the main speakers and provide equal fidelity. The Teatro Center generally fulfills those requirements. Dialogue was intelligible and natural-sounding even when I sat off-axis — which is important for those second-tier friends who don't merit a place of honor on the center futon. The magnetic shielding successfully prevented any interference with my picture tube.

For comparison, I replaced the rear Teatro 2.5s with a pair of DS Ts. I am generally not a fan of dipole speakers, but I really liked the more diffuse sound field the DS Ts provided. More important, the timbre was similar to that of the front speakers. The combination seemed to offer the best of both worlds, and if I had to make a choice, I would prefer the quasi-dipole DS Ts

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over the forward-radiating 2.5s as my surround speakers for movie listening.

Of course, I also paid careful attention to the Power 10 subwoofer. I was impressed both by its output level (robust down to about 35 Hz) and by the tight, movie-theater quality of its sound, which was not boomy when properly adjusted. Moreover, I appreciated the sub's servo protection circuit, which did a good job of preventing overload without introducing the obvious artifacts suffered by some subs with cheesy compressor circuits. The Power 10 is a great movie subwoofer. Placing it in a corner would have boosted the bass level somewhat. Nevertheless, I would probably need two of these subs to give good, consistent bass throughout my large room.

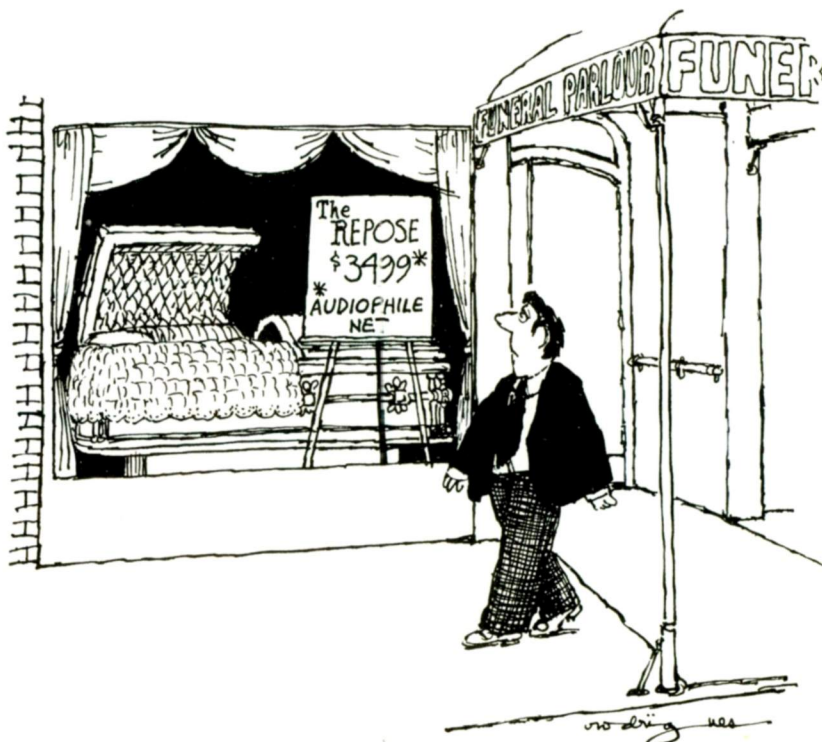
Next I turned my attention to music playback, playing CDs in surround modes and DVD-Video discs encoded with discrete 5.1-channel music. Music playback encourages critical listening, and that places much greater demands on loudspeakers than do most movie soundtracks, even those that have lush scores. I was not unhappy with this speaker system for music playback, but then I switched back to the Teatro 2.5s for the surround speakers. Although they were more directional than the DS Ts, I felt they did a better job with music, even recordings in which the surround channels contain mostly ambience information. Both the DS Ts and

2.5s, however, sounded a bit harsh on complex musical passages.

As usual, whereas I crank up the subwoofer level for movies, I turn it down when listening to music. The Octave Power 10 did a fairly good job on the low end but was a bit muddy compared with the best subwoofers I've auditioned with music. The somewhat aggressive sound quality of the Phase Technology satellite speakers and the subwoofer's tendency toward obfuscation makes this system less than ideal for music-only playback (Phase Technology has other, more high-end models designed for that purpose), but casual listeners will be quite satisfied nonetheless.

Loudspeaker manufacturers have done a tremendous job of designing low-cost speakers that meet the needs of both home theater and casual music listening. This speaker grouping from Phase Technology is an excellent example of what smart, cost-conscious engineering can yield. A 5.1-channel system using four Teatro 2.5s lists for \$1,000, and if you substitute a pair of DS T surrounds it costs only \$50 more. Given the clean and peppy sound delivery of these speakers, that is nearly miraculous economics.

Phase Technology, Dept. SR, 6400 Youngerman Circle, Jacksonville, FL 32244; telephone, 888-742-7385; Web, www.phasetech.com





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The culmination of the latest advances in high technology, revolutionary design, the finest materials, perfect balance, and a dedication to the most refined sense of taste.

Price, \$1,799



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On location

BY
REBECCA
DAY

It's the custom-installation version of being down by a field goal at the 2-minute warning with no time-outs remaining. On the Friday morning before the Super Bowl, three specialists from The Sound Room in St. Louis are trying to finish a home-theater system by the end of the day. There's time but no room for errors. Somehow the job will get done.

Each of The Sound Room's team players — Ross Cook, Tony Julius, and Patrick Nugent — is decked out in the company uniform and ready to go by the time photographer Anne Matheis and I arrive on the scene early in the morning. Over at the gorgeous new cherry wall unit that cabinetmaker Randy Laufer spent 100 hours building, craftsman Tom Hanff is carefully sawing a hole to accommodate the subwoofer and center speaker. Cook is next to him, "dummy loading" the A/V components on the cabinet shelves to make sure that they can be stacked in the right order.

"Sometimes if people have young kids they'll want the equipment in a particular order," he says, pointing out that a peanut-butter-and-jelly sandwich stuffed inside the tape slot of the VCR is a problem that can be avoided with a little foresight. Dummy loading also allows Cook to determine how long the interconnect cables should be. "If I only need 2 meters of patch cord and I have 4 meters, it looks messy," says Cook, who's punctilious about his work and proud of it.

Contractor Fred Bunch also shows

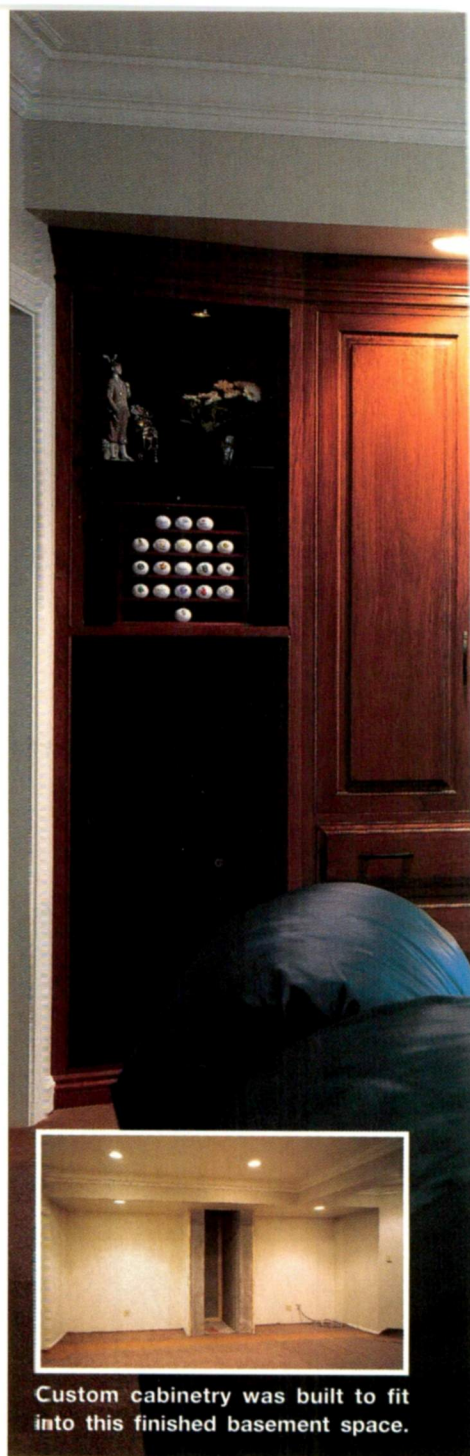
up to see how the new party room is shaping up. After all, a week earlier this busy space was a bare cave, and in 48 hours it has to be ready to host twenty people and a Super Bowl bash.

This wasn't always the plan. When homeowners Mark and Patti first thought about putting in a home theater to feed Mark's sports habit, they assumed it would be upstairs in the family room. The first-story room had problems: too much light and not enough space. "For the size of video screen we were talking about, we were going to have to sit in the kitchen to watch TV," quips Patti, so the pair huddled with Dave Davis, a Sound Room designer, and decided to move the theater to a previously unused part of

the basement. Mark gave Davis a pliable equipment budget of \$10,000 and asked him to create a great-sounding A/V system for sports, movies, and music with a big, 100-inch screen.

Davis selected the Sharp XV-S55U LCD projector and Clarion 100 screen because they delivered on Mark's wish for a two-piece projection system that would produce the biggest, brightest picture for the buck. That left half the

Play by Play: Home Theater on a Deadline



Custom cabinetry was built to fit into this finished basement space.

budget for music and video sources, amplifiers, and speakers. Davis tapped the five-channel Yamaha RX-V992 as control central because the 80-watt-per-channel A/V receiver delivers enough power and has "one of the best Dolby Digital (AC-3) decoders out there. With the budget in mind, I was looking for more performance and fewer features," Davis said.

Dolby Digital was necessary for the DVD portion of the system, although Davis had to bring Mark up to speed on DVD. He had heard of the nascent technology but he'd never experienced



a demonstration. The car-chase scene from *GoldenEye* was all it took to convince Mark that DVD and Dolby Digital are way cool. "A lot of people talk about the rear channels in Dolby Digital, but I like to emphasize the center channel," says Davis. "It's much more pronounced in Dolby Digital than in Dolby Pro Logic." Again with the budget in mind, Davis picked the Pioneer DV-500 DVD player, which would double as a CD player for Mark's blues and alternative-rock music discs.

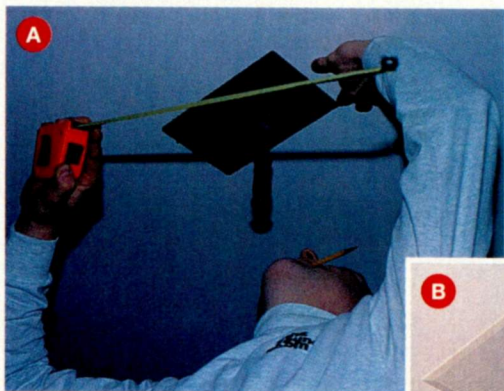
Mark and Patti already had an RCA DSS satellite-TV dish and receiver, so

all they needed to round out the video system was a VCR. To complement the high-resolution video delivered by DSS and DVD, Davis chose the Super VHS Mitsubishi HS-U780 recorder.

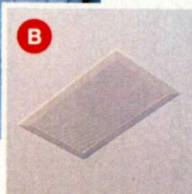
Since the speakers would be concealed in the custom wall unit, size wasn't a major concern, so Davis selected MB Quart's 38-inch-tall D55 "two-and-a-half-way" speakers, each of which has a 1-inch titanium-dome tweeter and a pair of 6½-inch woofers. "Mark likes the way they sound," Davis says. "He's not a rock hound, so he doesn't need a lot of bass. He wanted



Normally hidden behind cabinet doors are (from top) a Pioneer DVD player, a Mitsubishi S-VHS VCR, an RCA DSS receiver, and a Yamaha A/V receiver.



A. Julius uses the template that Sonance provides with its T-3000 speaker to trace a cutting outline on the ceiling.



B. The installed speaker with its grille in place.

speakers that would sound good on a wide range of music." To accompany the MB Quart left/right front speakers he chose the company's CTR Stage center speaker and its D-1000S 100-watt powered subwoofer, which he calls a "great performer for a 10-inch sub." For the surround speakers, which he planned to install in the ceiling in the back of the room, he went with the Sonance T-3000. It's affordable at \$350 a pair, Davis notes, but it still has a pivoting tweeter, which can be used to control dispersion, and it can handle enough power for full-range sound.

Goal to Go

Back at the house, contractor Fred Bunch is giving me the play-by-play on part of the structural work he contributed to the project: a 1½-inch-thick yellow-pine mounting panel he installed between the floor joists above the basement room's ceiling. He says it's more than strong enough to support the 70-pound video projector. "It could hold a couple of hundred pounds," he assures us. During the final phase of the room's construction a week or so earli-

er, Bunch secured the mounting panel between the joists and a crew from The Sound Room snaked power cords, telephone wire, and video and speaker cable approximately to where the final connections would be made. When all the wiring was complete, the sheetrock ceiling and walls went up.

"Everyone wants a home theater, but people don't think about all the other things you need to get sound and a picture," says installer Julius. "You need a TV signal, an audio signal, and a phone line for the DSS receiver, so it makes sense for us to run the wires before the walls are up, which is what we did." You can be only so sure about the exact speaker locations when a room is in the pre-wire stage of construction, however. When Sound Room installers pre-wire a job, they figure in an extra 3 feet of speaker wire in case the speaker's location has to be changed. "As long as the wire is there, it's easy to patch a hole and move the location a couple of feet," he says.

Julius sizes up the location of the right surround speaker and takes out a stud sensor for peace of mind. "Even though I know the ceiling was built with an opening there, I don't want to take any chances," he says. Then he takes out a tape measure and measures from the molding to the spot where he will put the 10½ x 7-inch template Sonance supplies. Sonance provides two installation options: what Julius calls "after the fact" and an in-ceiling bracket that goes in during the pre-wire phase. He chose the former "because it's easier. Once the bracket is in the ceiling you're stuck," he says. "This

way I can move the speaker location if I have to. A lot of people don't know their seating arrangement until they get the furniture in."

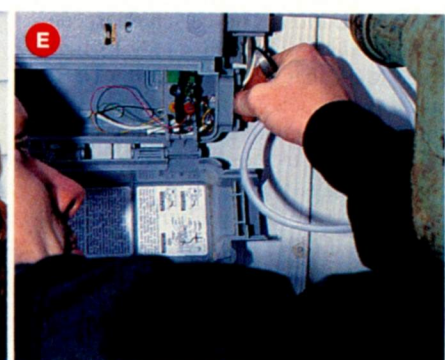
Julius doesn't rely on pure measurement, just as he wouldn't rely on a lab measurement to tell him how good a speaker sounds, because "there's no guarantee that everything's straight." So he calls Cook over to help him eyeball the positioning of the template before he traces the outline and begins to cut. Cook suggests moving the template a little to the left so that it looks straight. Once he gets the thumbs-up, Julius begins sawing.

"What's that you're cutting with?" I ask, scribbling down every detail. "A dry-wall saw," he answers, with a slight roll of the eyes to Cook. I can read his body language: "How are we going to get out of here by 5 o'clock if we have to stop and pose for pictures every two seconds and answer dumb questions?" Cook's shrug of a response says, "Beats me, but look at it as free advertising." Julius connects the generic 14-gauge speaker wire to the speaker terminals and attaches the speaker bracket, or flex bar, to the speaker and places both in the hole. Then he screws the trim plate to the bracket, pulling the speaker flush with the ceiling and sandwiching the dry wall in between. Finally he snaps the framed speaker in place.

Anticipating a future request from Mark and Patti, Julius decides to wire the home theater for a separate DSS feed from the existing dish on the south side of the house. Its signal goes to a receiver that feeds several TVs upstairs, but Julius knows that the couple is likely to want to watch different programs simultaneously, so he sends Nugent out to convert the single-LNB (low-noise block downconverter) RCA dish to a dual-LNB version, a decision Mark subsequently approves.



C. Nugent upgrades the DSS dish so that two different satellite-delivered programs can be watched at the same time. **D.** He secures the new dual LNB to the dish arm. **E.** He ties the phone lines from both of the DSS receivers into the main phone line.



Nugent has just unscrewed the LNB (which essentially picks up and amplifies signals reflected off the dish) from the dish arm when we catch up with him outside. He's holding the retaining screw for the LNB, hoping he won't fumble and drop it in the 25-degree weather. "This is the single most important screw not to lose," Nugent says, "because you won't find it in a hardware store." Stringing through the RG-6 coaxial cable, he puts an Augat compression-fitting F-connector on the end to hold the cable in place without putting pressure on the center conductor. "That preserves a good signal," he says, offering the same rationale for not allowing a hard bend in the cable. "Kinks in the cable can cause an impedance spike. That's not enough to destroy the picture, but it's all the little details that make the real difference in the overall performance of an A/V system."

Nugent goes to the telephone box next and integrates the phone connection for the second DSS receiver with that of the first receiver so that they're on the same line. "Now let's just hope the phone doesn't ring," Nugent says, holding the wires.

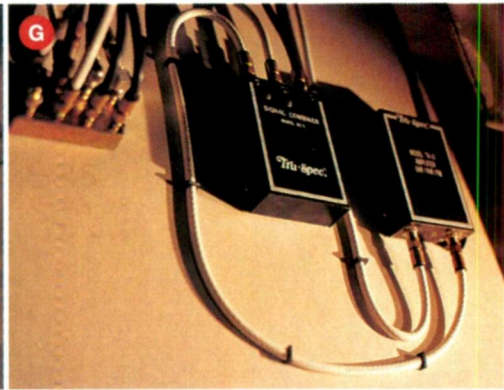
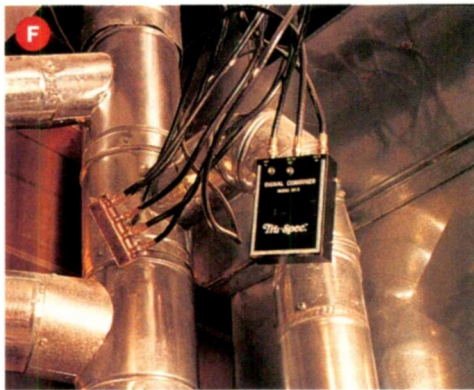
"Why?" I ask.

"Ow!" he says.

"Oh."

Back inside, someone suggests that while Patti is on the phone with DirecTV registering the second DSS receiver, she should look into the Prime Time 24 package that delivers network TV programming via satellite. The Super Bowl will look a lot better on a 100-inch screen via satellite than from the over-the-air antenna hidden in the attic, she's told. But DirecTV informs Patti that FCC regulations prohibit it from selling her network signals because her area is served by over-the-air broadcasts. After phone calls to the local NBC affiliate, Patti and Mark reconcile themselves to the idea of receiving local channels via the attic antenna, but not without protest. "When you're paying all this money for a great system," Patti says, "you want the best picture possible."

As part of his mission to clean up the existing video wiring, Nugent next takes on the video distribution system. He points to the eight-way splitter dangling on the unfinished side of the basement and shakes his head. Not only is it messy, but the three unused jacks are further degrading a signal that's already degraded by a multiple split. He runs the Channel 3 output from the upstairs



F (before). A video-signal splitter and signal combiner dangle precariously from the basement ceiling. **G (after).** Nugent tidies things up and adds a video amplifier.

DSS receiver and sends it to the Tru-Spec Channel 3 combiner along with the off-air channels from the attic antenna. "Basically, we're making a cable-TV head-end inside the home," Cook explains. The single cable output from the combiner goes to a Tru-Spec VHF/UHF amplifier, and then the beefed-up signal feeds into the eight-way splitter, which routes video signals to the other TVs throughout the house. Nugent tops off the remaining port with a terminating resistor to reduce signal degradation. Then he mounts the devices on the basement wall and tacks down the cable in neat rows.

While Nugent is dealing with the signal issues, Cook is preparing the projector mount. He's installing the mounting plate that will hold the Sharp projector and says the lag bolts plus four screws should be plenty. A few minutes later I notice he's on the sixth screw.

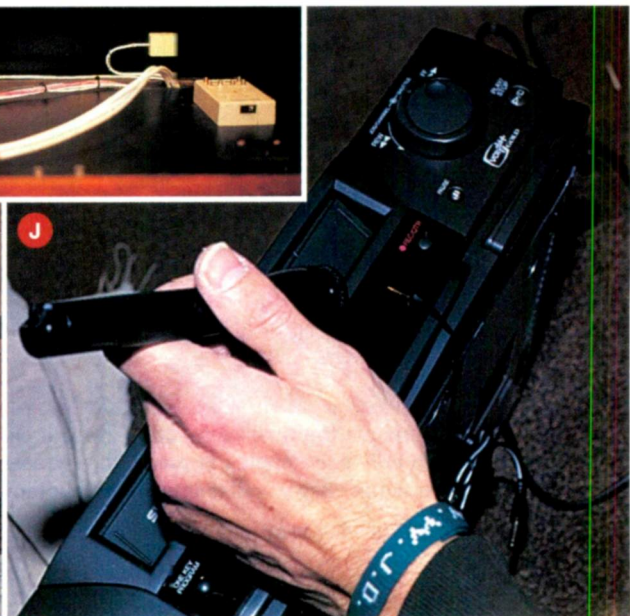
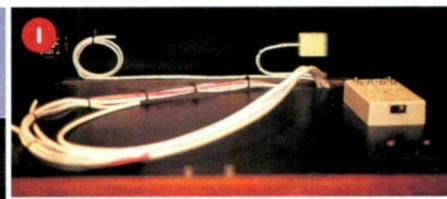
"I'm a scaredy cat," he confesses. It's about 11:20 a.m., and some joker reminds Cook and Julius that the projector has to be in by the end of the day. "It's got to be done for the Super Bowl?" Julius asks in a news-to-me tone. The installation crew cracks up. Mark manages a nervous chuckle.

Two years ago, The Sound Room would have recommended a conventional three-beam video projector over a single-lens LCD variety like the Sharp, but things change fast in the high-tech world. "These LCD projectors are getting more pixels every generation," Cook says. "The price/performance ratio is great at \$5,000."

"Is that how much this costs?" Patti asks, wide-eyed, with a glance toward her husband on the couch. Mark smiles sheepishly.

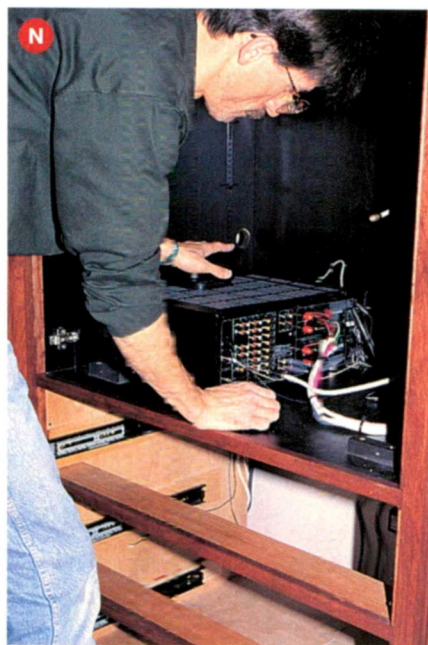
Cook and Julius tie string around two tape rolls and let them dangle from the

H. Julius installs a tiny infrared (IR) receiver into a hole he drilled near the base of the cabinet. **I.** IR emitters for all of the system's components run to a connecting block in the rear of the cabinet (not shown); a Panamax surge protector (right) before the system components are plugged in. **J.** Julius uses a mini flashlight to find the IR sensor on the front panel of the VCR and places an IR emitter in front of it.





K. Cook secures the video-projector mount to the ceiling using a lag bolt and six screws. **L.** Cook and Julius use an improvised plumb line to find the center of the 100-inch screen. **M.** The Sharp XV-S55U LCD projector installed and ready to go.



N. Cook makes the final connections to the Yamaha A/V receiver. **O.** With all of the audio and video cables in place, the receiver is ready to be positioned on its shelf inside the cherry wall unit that was custom-built for the new system.

ceiling, using them as plumb lines to find the center of the screen. Aligning the projector with the screen is a bit tricky with an LCD projector because the lens is off to the side rather than centered on the chassis. "The idea is to center the lens, not the bracket," Julius explains.

Cook fits the cover plate and then screws on a ball-and-swivel bracket before locking the projector in place. "One of the nice things about this projector is that it doesn't have a fixed focal length," Cook says. "You can put it anywhere from 11 to 18 feet away from the screen." For this job, the projector is set about 17 feet back, and although the specs boast that a maximum 250-inch (diagonal) image is possible, Cook would never go above 100 inches. "Above that the pixels become the size of softballs," he says, and the picture is too grainy. Another appealing feature of Sharp's XV-S55U is the built-in shift mechanism, which allows installers to position the projector parallel to the ceiling, which makes the room look better, and then adjust the lens so that it projects an image that's not keystone.

Julius plugs the projector's power cord into the ceiling outlet and connects the video cable to a jack that's wired back to the A/V receiver. They power up the projector and cross their fingers. The word "FOCUS" appears on the screen — upside down and backward. Mark walks back into the room just in time to see it.

"Uh-oh," he says.

"Just tell your guests to sit on their heads," a wiseguy cracks.

"Sharp thinks in commercial mode," Cook explains: the image would read correctly if the projector were sitting on a table rather than hanging upside down from the ceiling. He takes the Sharp remote control and punches a few buttons, which reverses and inverts the image so that it reads correctly.

Julius, meanwhile, is on remote-control duty. The A/V components will sit on shelves inside the cabinet, so the equipment has to be operable when the cabinet door is closed. When I check on him, he has just finished drilling a quarter-inch hole at the base of the cabinet and is inserting an infrared (IR) receiver into it. "The infrared pickup has to be centrally located so that you can hit it with a remote from any chair in the room," he notes.

When the main IR pickup is in place, he locates the IR sensor window on the front panel of each component and puts a tiny IR emitter in front of it; black electrical tape is used to hold the emitter inconspicuously in place. The IR receiver in the cabinet picks up commands from the remote controls and sends them via wire to the connecting block part of the Xantech repeater system inside the cabinet. The Xantech fires off the commands to the emitters for each A/V component, completing the chain of command.

Installing the MB Quart front-channel speakers and subwoofer is a fairly straightforward task. Laufer, the cabinetmaker, had the dimensions for the D55 speakers when he sketched out the wall unit, and he allowed enough room to maneuver each speaker into its own nook. Before Julius shoves the 80-pound speakers in place, he sticks little rubber pads under each corner for protection. I'm afraid to ask what they're called after the dry-wall-saw incident, but I have a job to do. "We call them rubber baby buggy bumpers, but I guess you could call them furniture pads," Julius offers. Glad I asked.

Julius asks Cook whether he's running line-level interconnects or speaker wire to the sub from the Yamaha receiver, and Cook reminds him that in this age of discrete digital surround sound, the low-frequency-effects (subwoofer) signal is present at the dedicated line-level jack. Before installing the sub in the cabinet, Cook wants to make sure it works. He hands the power cord to Julius and has him plug it in. Cook's body does a 3-second dance as he fakes

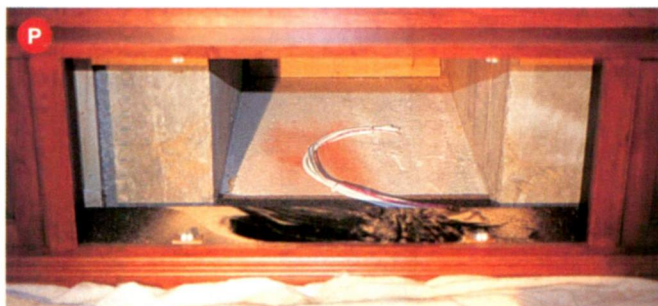
electrocution, inciting a chorus of giggles from the peanut gallery. "We throw in the comedy show for free," he says.

They ease the sub onto the concrete floor of a pre-existing cavity behind the screen and then place the center-channel speaker in the cabinet in front of it. The subwoofer is isolated on the concrete, which prevents it from rattling the cabinet. Cook explains that the center speaker had to be placed in front of the subwoofer because there was no other place to put it. All of the speaker openings are covered by hinged panels with black, acoustically transparent cloth grilles that are built into the cabinet. Laufer also built the video screen into the cabinet and crafted a 3-inch cherry frame to hide its border.

Cook then pulls out the component shelves so that he can make all the rear-panel connections. With all of the wiring chores complete, he repositions each component on its shelf and slides it into the cabinet. As a finishing touch, Cook installs a black bezel on each side of the component stack. Slick.

With the equipment wired and powered up, the final play is to program the learning remote included with the Yamaha receiver. Placing it head to head with the DSS receiver and VCR remotes, Cook programs the play and control functions of the VCR into the Yamaha remote and creates a one-button macro that turns on all of the system's components, selects the appropriate input and surround settings, and adjusts the volume.

T. Julius runs generic 14-gauge cable to one of the two MB Quart D-55 speakers. **U.** Each main front speaker hides in its own cubbyhole, concealed by a hinged panel with a black cloth grille.



P. Placing the subwoofer on the concrete floor behind the screen prevents it from rattling the cabinet. Cables for the sub and the center speaker are tied into a neat bundle. **Q.** Craftsman Tom Hanff prepares an opening for the subwoofer and the center speaker in the front of the custom-built cherry cabinet. **R.** Julius slides the subwoofer into the cavity. **S.** The center-channel speaker sits in front of the subwoofer, both concealed by a black cloth grille.

It's almost 5 p.m., and Julius is rolling up drop cloths and vacuuming dry-wall dust to remove any trace that the installation team was there. Mark and Patti are already absorbed in *Jeopardy* — even the commercials are in surround sound. All they need for the Super Bowl party is chili and beer.

Post one in the win column for The Sound Room.

Post-Game Interview

Like all game wraps, this one is filled with superlatives.

"The game was great!" reports Mark. "A lot of fun," says Patti, adding the comment that on the 100-inch screen the Broncos and Packers football players "were huge! They were bigger than we are. This TV isn't lifesize — it's bigger than life!" □



EQUIPMENT AND PARTS

Sharp XV-S55U LCD projector.....	\$4,995
Clarion 100 screen.....	\$1,029
Pioneer DV-500 DVD player.....	\$599
Mitsubishi HS-U780 S-VHS VCR.....	\$569
RCA DS-5450 DSS receiver.....	\$499
Yamaha RX-V992 A/V receiver.....	\$899
MB Quart D55 speakers (pair).....	\$850
MB Quart CTR Stage speaker.....	\$299
MB Quart D-1000S subwoofer.....	\$549
Sonance T-3000 ceiling speakers (pair)...	\$320
Panamax DBS+3 surge protector.....	\$129
Xantech IR repeater system.....	\$275
Sharp AN/CMH35U ceiling bracket.....	\$350
Monster Cable interconnects.....	\$350
Installation parts and labor.....	\$1,113
TOTAL (some prices discounted).....	\$12,825

CD

Excellence

MY BEST, YOUR BEST: PROS
PICK FAVORITE RECORDINGS

COMPILED BY DANIEL KUMIN

WHAT'S THE MOST IMPORTANT component of your music system? The loudspeakers? The amplifier? The CD player? The cables, maybe?

None of the above. The component that has the greatest impact on how your music system sounds at any given moment is the recording you are playing. In fact, I would venture to say that a well-recorded CD spun on a carefully chosen \$850 system of player, amp, and small speakers will sound better — both more “musical” and more involving — than a merely average CD on the typical \$10,000 tweaked-to-a-fare-thee-well audiophile pile.

Of course, most of the time, even for us suckers-for-sonics — and *all* the time for the other 99.85 percent of the population — this is entirely irrelevant. If Buffalo Tom is what you long to hear, Buffalo Tom is what you're going to buy, even if this turns out to have been recorded on a 1948 mono Webcor (which, by the way, seems to be the fashion in production among many alternative bands). And yet, if you look, you can find astonishing recordings peppering every musical genre, discs that sound immediately and obviously

PHOTO BY DAN WAGNER



better while delivering something musically significant. And you'll find those recordings not only on specialty audiophile labels — though, not too surprisingly, these are well represented — but also under mainstream rubrics and on small indie labels.

To prove the point, we canvassed several of the music industry's best-regarded producers and recordists. Mostly, we called on pros associated primarily with a specific genre, though many do cross over from one world to another with apparent ease. We asked each expert to nominate not one but two exemplary CDs. The first is a disc for which the pro himself was either directly responsible or intimately involved, and it's the one that he feels best represents a balanced vision of his art and craft. The second disc is a title with which he had absolutely no association whatsoever, other than admiring its value and enjoying its playback just the way you or I do.

The results are revealing. For myself, I plan to buy one title per week until all sixteen of these CDs are on my shelves. If you do likewise, you'll spend no more than you would for dinner out and

a movie, but I guarantee that the pleasure the CDs bring will last far, far longer. —D.K.

SHAWN R. BRITTON

BIOGRAPHY Shawn R. Britton began his career with Mobile Fidelity Sound Lab back in 1985, starting out in the cassette-duplication department. After many trips to the former Soviet Union to remaster the Melodiya Records catalog, Britton began mastering full-time, eventually becoming Mobile Fidelity's chief engineer. His remastered Ultradisc II gold CDs include Billie Holiday's *Body and Soul*, John Mayall's *Blues Breakers* with Eric Clapton, and the nineteen-track collection by Ella Fitzgerald and Louis Armstrong, *Ella and Louis Again*.

PERSONAL BEST

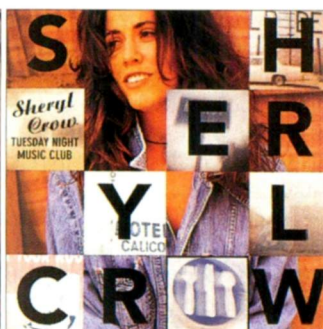
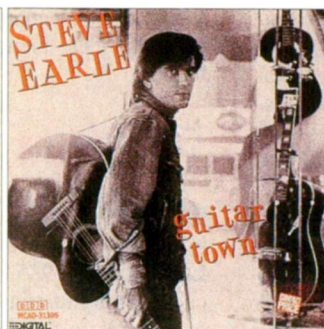
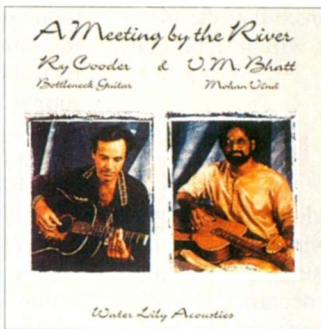
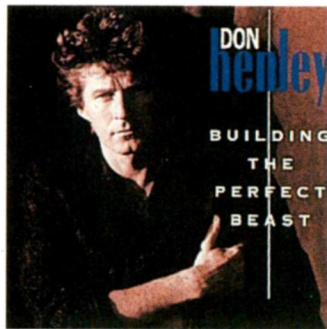
BUILDING THE PERFECT BEAST Don Henley (*Mobile Fidelity Sound Lab 705*; original release, 1984; *Ultradisc II reissue*, 1997) "I chose this particular disc [for which Britton was the remas-

tering engineer] because of its very solid sonics. The source tapes were the half-inch 30-inch-per-second two-track format so well known for low-end response, and the session's improved imaging makes this Ultradisc II a classic Mobile Fidelity rock release. As with all MoFi productions, no limiting or compression was used during the analog-to-digital transfer, resulting in a more three-dimensional soundstage without the diminishment of front-to-back depth that compressor/limiters can induce. This Don Henley disc has it all: superior spectral balance, improved imaging, and great songwriting and production."

ANOTHER'S BEST

MEETING BY THE RIVER Ry Cooder and V. M. Bhatt (*Water Lily Acoustics 29*; 1993) "This Grammy-winner exemplifies the purist approach to recording.





Kavichandran Alexander, who was both the producer and the recording engineer, utilized a chain of custom-built equipment from Tim de Paravicini of Esoteric Audio Research, a firm well known in professional audio and audiophile circles for the ultimate in music recording and reproduction. Electronically speaking, there is a growing trend in the recording and mastering professions to 'bridge the gap' between hypercritical audiophile ideals and the need for day-to-day reliability in equipment performance. Water Lily Acoustics has reached that lofty goal with this fine recording. A soundstage both deep and wide as well as pinpoint imaging help make the CD a true audiophile delight. And, in revisiting the disc, I am convinced that Ry Cooder may well be one of our country's best 'unknown' natural resources."

TONY BROWN

BIOGRAPHY Tony Brown is both a long-time producer for and the president of MCA/Nashville, and his approach to multi-Platinum artists like Reba McEntire, George Strait, Wynonna Judd, Vince Gill, and Trisha Yearwood takes nothing for granted. He sensed the future of country music when he signed and produced such boundary-testing artists as Lyle Lovett, Steve Earle, and Nanci Griffith beginning more than a decade ago. And his instinctive belief in contemporary-minded traditionalists like Mark Chesnutt, the Mavericks, and Marty Stuart intermingles old and new sounds.

PERSONAL BEST

GUITAR TOWN Steve Earle (MCA 31305; 1986) "A total creative experience for me, through the casting of engineer, artist, and my co-producer, Emory Gordy, Jr., as well as assembling the

musicians, among whom were some session players and members of Steve Earle's band. Steve had recorded before for CBS but had not quite connected. I feel that the recording of this album turned the world on to an incredible talent; he's not just a great artist but one of Nashville's great writers of the last decade. The project made me feel as though I had promise as a producer."

ANOTHER'S BEST

TUESDAY NIGHT MUSIC CLUB Sheryl Crow (A&M 540 126; 1993) "This record [produced by Bill Bottrell] went straight to my heart the first time I heard it. The recording let me feel as though I had a secret line feed right into the studio, as if they were actually playing as I was listening. This has to be one of the freshest pop records since James Taylor's *Sweet Baby James*. The CD affected the way I felt about music at the time and, consequently, my style of production. I hope to produce a record this good someday."

JOHN EARGLE

BIOGRAPHY John Eargle has engineered more than 200 classical and contemporary CDs, most of them for the Delos International label. Among his other interests are continuing research and instruction in electroacoustics (he has to his credit several widely used texts on the topic) and trying to get in an hour a day at the piano.

PERSONAL BEST

SHOSTAKOVICH: SYMPHONY NO. 8 Dallas Symphony Orchestra, Andrew Litton conductor (Delos 3204; 1997) "I think this is the best orchestral recording I have engineered. To me, the combination of detail and depth of the stereo stage is just about ideal, and the

playing is fantastic. It is as much a tribute to modern recording technology as it is to the performances of all the many artists involved."

ANOTHER'S BEST

DUTILLEUX: SYMPHONIES NOS. 1 AND 2 BBC Philharmonic, Yan Pascal Tortelier conductor (Chandos 9194; 1993) "These are the definitive performances of two marvelous works, and with flawless engineering by Don Hartridge to match. The disc delivers just the right balance between musical detail and hall acoustics."

MITCHELL FROOM

BIOGRAPHY Based in New York City, Mitchell Froom is a freelance producer whose work has covered many genres. Although probably best known for his projects with Elvis Costello, Crowded House, Los Lobos, and Richard Thompson, he has produced artists as diverse as Suzanne Vega (his spouse), Jimmy Scott, and American Music Club. Also a noted keyboard player and songwriter, Froom — a self-confessed non-singer — will soon release a solo album featuring a Who's Who of guest vocalists. His most recent project, Bonnie Raitt's *Fundamental*, was just released by Capitol.

PERSONAL BEST

LATIN PLAYBOYS Latin Playboys (Slash/Warner Bros. 45543; 1994) "For my choice of a record I was involved with [in this case, as both coproducer and band member], I'd have to say this is the one. Even though it didn't sell anything like as well as some albums I've produced, it seems in many respects to have had the greatest impact. Over the past few years, if I'm ever complimented, nine times out of ten it's in refer-

ence to that record. It's funny: I can't really take much credit, since David Hidalgo recorded a lot of it at home on a four-track cassette, but I will say that we were really excited when we finished it, and the disc seems to be holding up pretty well over time."

ANOTHER'S BEST

DOMINGO Caetano Veloso and Gal Costa (*Verve 838 555; 1967*) "I was a bit pissed I couldn't choose Miles Davis's *Kind of Blue* [already selected by Tom Jung of dmp — Ed.]. To me, a great recording is one that always sounds good no matter what your current mood, or where, or on what audio system you play it. This album, the 1967 debut recording by Brazilian artists Caetano Veloso and Gal Costa, is just such a disc. It is a beautiful-sounding record, one in which the quality of the singing, playing, and music and arrangements all conspire to form an intense mood. The recording quality, though it seems to be quite good, becomes almost a secondary consideration."

JOE HARLEY

BIOGRAPHY Lifelong jazz and blues fan Joe Harley didn't begin active production work until his late thirties. He now has more than forty titles to his credit, most of them for the AudioQuest label. In 1996 he also began an association with JVC, assuming the role of creative consultant for its Extended Resolution CD (XRCD) series of audiophile discs. Harley prides himself on his ability to capture peak performances from noted blues and jazz artists while working primarily in a high-pressure, live-to-two-track analog format. The Harley Music Productions approach to the recording process can be summed up as "maximizing artistic passion and minimizing technical imposition."

PERSONAL BEST

GIVE IT UP TO LOVE Mighty Sam McClain (*JVC 12; original release, 1993; XRCD reissue, 1997*) "The prospect of choosing a 'most exemplary' session is not one I'm particularly comfortable with. However, this recording with Sam McClain [produced by Harley] does hold a special place in my heart. Sam's career had become just about dormant after scoring one big hit single in the 1960s. Finally, in 1992, he was getting control of his life and making incredible music. For *Give It Up to Love*, singer, song, and production team met in one of those happy confluences where everything just clicks. The recordings, almost all of them first-take performances, were completed in just two days, and the resultant record received worldwide acclaim. Sam's career was revived, and he is now recognized as what he indisputably is: a matchless living legend of rhythm-and-blues."

ANOTHER'S BEST

BLUE BIRD Jimmy Rogers (*Analog Productions 2001; 1994*) "Here is a modern blues classic that rightfully won a W.C. Handy Award in 1995. Jimmy Rogers was one of the true giants of Chicago blues. On these dates he received some superb support from a blues Who's Who band, including pianist Johnnie Johnson, harmonica player Carey Bell, and drummer Ted Harvey. John Koenig produced this one — it's one he should be proud of for the ages."

TOM JUNG

BIOGRAPHY As president of dmp, Tom Jung is involved in almost all of the engineering and production at this small, independent audiophile label. He began his recording career as an analog disc-cutter, then moved on to location re-

ording and finally to studio engineering. In 1969 he cofounded Sound-80 in Minneapolis, where during the mid-1970s he was involved with the very first digital studio recordings, using a prototype 3M tape recorder. In 1979 he moved to New York, working as a freelance engineer on albums, movie scores, and commercials while laying the groundwork for dmp.

PERSONAL BEST

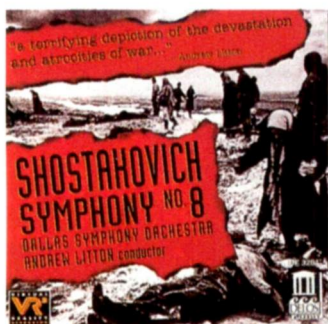
DMP BIG BAND SALUTES DUKE ELLINGTON DMP Big Band (*dmp 520; 1997*) "For this project, some of the greatest musicians in the New York City area were assembled to perform some of the finest music ever written. Recording big-band sound is about as challenging as music production gets, but when the music, the technology, and the performance all come together, magic happens."

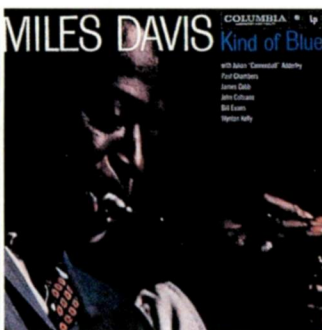
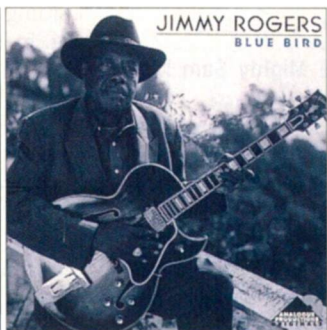
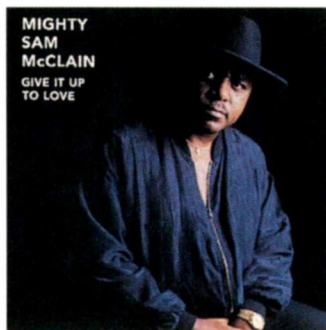
ANOTHER'S BEST

KIND OF BLUE Miles Davis (*Columbia 64935; original release, 1959; Legacy reissue, 1997*) "Ever since high school, this record has been my favorite. From the original mono LP [produced by Irving Townsend] through all the remastered CD versions, *Kind of Blue* holds up as a true classic. It is a perfect example of music and technology combining to make real magic. Just this past summer I received the latest reissue [produced by Michael Cuscuna], a direct transfer from the original half-inch, three-track master — no EQ or compression, just the master tape. It's musical heaven."

BOB LUDWIG

BIOGRAPHY Mastering engineer Bob Ludwig is president of Gateway Mastering, having previously been associ-





ated with Masterdisk for more than a decade. He is a graduate of the Eastman School of Music and former principal trumpet of the Utica Symphony. A recipient of *Mix* magazine's Les Paul Award "in recognition of consistently outstanding achievements in the professional audio industry," Ludwig has also won *Mix*'s Technical Excellence & Creativity (TEC) Award seven times; Gateway has won each of the three years it has been eligible. Ludwig has mastered dozens of Gold and Platinum recordings for artists ranging from Bruce Springsteen to Nirvana to the composer Henry Gorecki.

PERSONAL BEST

BOYS FOR PELE Tori Amos (*Atlantic* 82862; 1996) "This magical disc beautifully combines Tori's unique lyrics with some special pop music. I think some of her songs are really art-songs in disguise. The tremendous dynamic range of the CD captures everything from the quiet intimacy of Tori and her Bösendorfer piano, via direct-to-two-track digital recordings, to Bob Clearmountain's brilliant multitrack pop mixes [of four songs] to the really loud rock songs. Mastering the record took a long time to fine-tune, since Tori is the ultimate perfectionist and continually searches for ways to reveal the musicality inherent in her master tapes."

ANOTHER'S BEST

STRAVINSKY: THE FIREBIRD SUITE, THE SONG OF THE NIGHTINGALE; THE RITE OF SPRING Minnesota Orchestra, Eiji Oue conductor (*Reference* 70; 1996) "I've always been a Stravinsky fan. This HDCD engineered by Keith O. Johnson [and mastered by Paul Stubblebine] has more detail than any live performance I have attended! The orchestra and the hall sound simply glorious. Put it on, sit back, and be amazed!"

TED TEMPLEMAN

BIOGRAPHY Ted Templeman, executive vice-president of A&R at Warner Bros., has been producing hit records for more than a quarter-century, with artists ranging from Van Morrison to Van Halen. (Trivia: Templeman was the lead singer of the 1960s pop outfit Harpers Bazaar.) He holds a producer's Record-of-the-Year Grammy for the Doobie Brothers' "What a Fool Believes" in 1979, and his credit is on several hundred recordings — at least one of which is to be found in virtually every music collection.

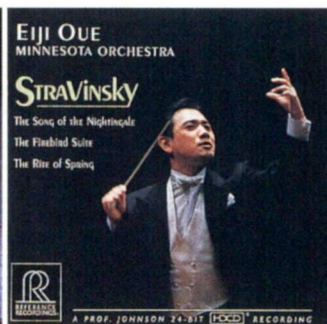
PERSONAL BEST

MUGZY'S MOVE Royal Crown Revue (*Warner Bros.* 46125; 1996) "I signed

this unique group and produced this, their first major-label album — you can also see and hear them in the Jim Carrey film *The Mask*. The Royal Crown Revue call their music 'gangsta bebop': it's a wild and wonderful blend of jump blues, bop, jazz, and contemporary rhythm. This disc is formed of almost exclusively live performances, with only minimal overdubs and not a single synthesizer or sampler — there's just no substitute for real instruments, in the hands of real musicians, recorded in real time, and these guys are all huge players. We cut the tracks in the analog domain, and the CD sounds pure, dynamic, and exciting. Lots of credit is due engineer Lee Herschberg — one of the all-time best in my book."

ANOTHER'S BEST

THE NIGHTFLY Donald Fagen (*Warner Bros.* 23696; 1982) "This is one of the records I play the most in everyday life, and I have done so ever since it came out more than fifteen years ago. I live in Santa Barbara and make the trip to Burbank and back a couple times every week: I must have heard the song 'The Goodbye Look' 300 times in the car alone by now. Although *The Nightfly* was a relatively early digital production [by Gary Katz], the disc still sounds wonderful. Recorded music doesn't get much better than this." □



DVD Audio

**Battle lines are drawn to define
the next-generation music format**

EVER SINCE it was conceived, DVD has been marked by dissension. First there was the threat of a format war between DVD's two precursors: the Multimedia Compact Disc (MMCD) format developed by Sony and Philips and the Super Density (SD) format developed by Toshiba and Time Warner. Fortunately, the two camps came together to create the DVD-Video format we know today.

But peace did not reign for long in the DVD world.

In the computer arena, several incompatible versions of a recordable DVD format have been announced.

In the audio/video field, a pay-per-view version of DVD called Divx is being test-marketed and will be launched nationwide later this year. Divx discs use a copy-protection system very different from the one used on DVDs, so they won't play in regular DVD players. It appears that at least some movies, notably from Paramount and Fox, will be available on Divx but not DVD.

Adding to the confusion, Digital Theater Systems (DTS) is planning to introduce DVDs with DTS surround soundtracks. Most first-generation and some second-generation DVD players were not designed to pass along the DTS signal. DVDs sold in North America are required to carry either a standard CD (PCM) or Dolby Digital audio track. But some DTS discs will carry only a *two-channel* Dolby Digital soundtrack, in which case you'd need a DTS-ready player *and* a DTS processor to enjoy 5.1-channel surround sound.

The Divx and DTS situations are minor skirmishes, however, compared with the format war that threatens to break out over DVD-Audio. Two groups have developed plans for a new music format, which proponents hope will emerge as the successor to CD.

WINDS OF WAR

A single-sided, single-layer DVD can store 4.7 gigabytes, or about seven

times as much information as a CD. That space could be used to provide multiple uncompressed channels for playback through a home-theater-type array of five speakers plus a subwoofer, or even more speakers. It could also be used to accommodate recordings with higher resolution than the linear PCM

coding scheme used for CD. Some CD critics have long maintained that its sampling rate of 44.1 kHz and digital word length of 16 bits can't fully convey the subtleties of a musical event. With a more capacious carrier, higher sampling rates (96 kHz or even higher) and longer word lengths (20 or 24 bits) become practical. There's also room for extras like text and graphics. The music industry, meanwhile, demands that a next-generation music format include provisions for a robust copy-protection system that will likely prevent consumers from making digital copies.

Long before DVD hit the market, the

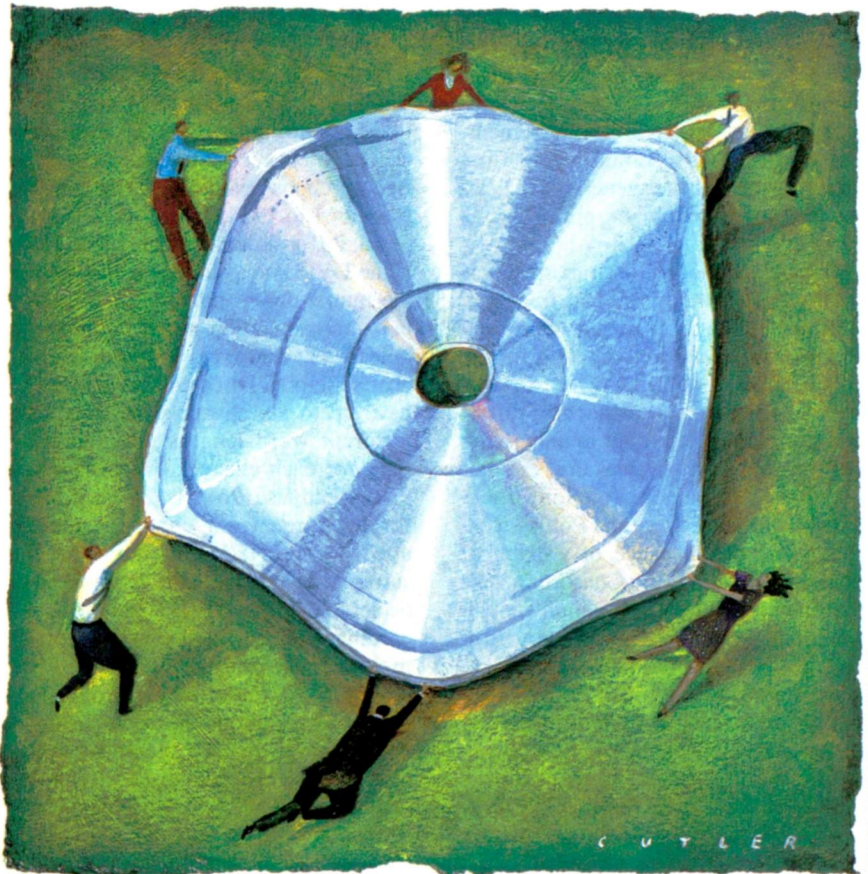


ILLUSTRATION BY DAVE CUTLER

BY GORDON BROCKHOUSE

electronics and music industries began thinking about how DVD might be exploited for audio applications. In 1995, the Standards Committee of the Audio Engineering Society (AES) formed a task force to look into high-capacity digital audio. The task force published its report last December. Back in May 1996, the International Steering Committee (ISC), a music-industry body concerned with DVD matters, con-



The two proposed formats are dramatically different, not only in detail but in their underlying philosophy.

veyed a list of recommendations for a next-generation music format to the hardware industry.

The DVD Consortium, which consists of ten key DVD patent holders (Hitachi, JVC, Matsushita/Panasonic, Mitsubishi, Philips, Pioneer, Sony, Thomson Consumer Electronics/RCA, Time Warner, and Toshiba) formed a working group to actually design the format in December 1995. Working Group 4 released a draft version of what is known as the WG-4 spec last November. According to Jordan Rost, senior vice president of new technology for Warner Music Group and a member of the WG-4 committee, a final specification for first-generation DVD-Audio players could be published as early as May.

But before the WG-4 draft spec was even released, the group had fractured. Last September in New York, Sony and Philips announced a competing format called Super Audio CD. The two proposed formats are dramatically different, not only in detail but in underlying philosophy. David Kawakami, director of corporate business for Sony Electronics, says that Sony and Philips went their own way because of a "lack of confidence in the DVD Consortium. We feel they didn't set the bar high enough in sound quality. They're not firm enough in their commitment to backward compatibility with CD. And they are not addressing copyright protection comprehensively enough."

The WG-4 proposal is an extension of the tried-and-true linear-PCM technology, while Super Audio CD uses a new 1-bit coding scheme called Direct

Stream Digital (DSD). Super Audio CD is a strictly defined system (some might say limiting), while WG-4 is very flexible (some might say confusing). WG-4 discs will not be playable on regular CD players; Super Audio CDs will be playable on all CD players, according to Sony and Philips.

As this article went to press in mid-March, near-final versions of the WG-4 and Super Audio CD specifications

(called Version 0.9 in both cases) were about to be released to electronics hardware and record companies. Highlights of the Super Audio CD spec were to be revealed at a meeting of CD licensees in Tokyo in late March. WG-4 proponents, meanwhile, spent the early part of the year meeting with record producers and executives touting the benefits of their proposal. Here's what we were able to find out about the two competing DVD-Audio proposals.

DVD-AUDIO, WG-4 STYLE

The WG-4 specs call for a mandatory PCM audio track with at least two channels, but record companies will be free to choose sampling rates ranging from 44.1 to 192 kHz and word lengths of 16, 20, or 24 bits for this track. Even if the DVD-Audio format is changed in the future, this mandatory track insures that first-generation audio players will at least be able to play a disc in its two-channel mode. Discs will be allowed to have up to six channels, perhaps with different word lengths and sampling rates for each channel. For instance, a disc could use 96-kHz/24-bit coding for the three front channels and go down to 48-kHz/16-bit coding for the surround channels. Such decisions will be left up to the DVD's producer, recording engineer, and others involved in the creative process.

Any DVD-Audio player, from inexpensive headphone portables on up, will be able to play the PCM audio track. On DVD-Audio discs with multi-channel content, the two-channel information will be provided either as a separate two-channel track or as "fold-

down" instructions that will be used by a processor inside the player to create a two-channel mix. Record companies will be permitted to complement the PCM track with tracks using other coding systems, including Dolby Digital and DTS. Besides audio programming, WG-4 discs can contain music videos, graphics, notes, and other information.

The WG-4 spec allows for different types of disc content and different types of players. Audio-only players will be able to play all the music on a disc. "AV" players — "universal" machines that play both DVD-Audio and DVD-Video discs — will also be able to play music videos and show other graphic content such as still images and liner notes while the music plays. AV players will also support discs encoded to display on-screen navigation aids. Home players will use the TV as a display, but portable players with built-in LCD screens will also be available.

SUPER AUDIO CD

Like today's DVD-Video players, WG-4 players will be able to play standard CDs. But the WG-4 spec contains nothing about making DVD-Audio discs that can be played on standard CD players. Therein lies a fundamental difference between WG-4 and Super Audio CD. The Super Audio CD format proposed by Sony and Philips calls for a hybrid disc consisting of two layers: 1) a fully reflective layer that can be read by any CD player and, above it, 2) a semi-transmissive, high-density (HD) layer that can be read only by a Super Audio DVD player. The CD layer would contain normal Red Book CD audio data, while the HD layer would contain separate two- and six-channel streams of DSD-encoded digital audio plus an area that can be used for video, graphics, text, or other data.

The DSD coding scheme is very different from the PCM coding used on CDs and required by WG-4. PCM recording systems sample sound at discrete intervals, then represent the level of each sample with a binary number. For every second's worth of music, a CD contains 44,100 samples per channel, each recorded as a 16-bit number. During playback, a digital-to-analog (D/A) converter produces an extremely rapid series of voltages whose levels correspond to those numbers. A low-pass filter removes ultrasonic (inaudible) components of the waveform to recreate the original signal.

DSD uses a very high sampling rate, 2.8224 MHz, and represents each sample with a single bit. During recording, the level of the input signal is compared to the value accumulated in a negative-feedback loop. If it's higher, the sample is assigned a value of 1; if it's lower, a value of 0 is assigned. The resulting pulse train, according to Sony and Philips, is remarkably similar to the analog waveform it represents. Theoretically, a bandwidth of 0 to 100 kHz and a dynamic range of 120 dB can be achieved. DSD's very high sampling rate is said to allow the high noise levels inherent to any 1-bit system to be shifted far out of the audio band through the use of fifth-order noise-shaping.

Sony and Philips say that higher sampling rates and greater bit depths in PCM recording systems have delivered audible improvements over early-generation CDs, but they maintain that PCM coding has reached the point of diminishing returns. The main barrier to further improvements in sound quality is the filtering that has to be done during both recording and playback of PCM-encoded audio. These include decimation filters to convert the 1-bit data stream produced by the analog-to-digital converters used in most professional recorders to a PCM data stream; down-conversion filtering to convert the sampling rate of the studio recording to the sampling rate of the released product (44.1 kHz for CD); and interpolation filters on the playback machine to prevent quantization noise from interacting with program content. According to Sony and Philips, DSD improves on PCM by eliminating the need for these various filters.

Current DVD players will be able to read the CD layer of Super Audio CDs, but not the high-definition layer, which will feature a sophisticated copy-protection system.

HOW'S IT SOUND?

The first question most listeners will have about these two proposed formats is, "How will they sound?" The question actually has two parts: What effects will new coding schemes have on sound quality? And how will multi-channel presentation change the listening experience?

On the first question, the jury's out. As this article went to press, the audiophile label Chesky Records was about to release a standard DVD with music recorded using 96-kHz/24-bit PCM en-

coding. "With 96 kHz and 24 bits, you don't hear digital artifacts," says artistic director David Chesky. "At 44.1 kHz, there's hardness of timbres and lack of space. At 96 kHz, there's none of that digital flicker. There's more space, more low-level resolution, and a general ease of presentation you don't get at the 44.1-kHz sampling rate."

Tom Jung, president of the dmp jazz label, moved from 16- to 20-bit recording systems seven years ago and now uses 24-bit technology. Last year Jung made two recordings on a prototype Sony DSD recorder. Now that he's used DSD, Jung says, "It would be a big mistake to settle for something that sounds inferior, that we'd have to live with for the next twenty years. I'd never shun digital in favor of analog — there are far more things wrong with analog — but there are some things I've never liked about digital." He mentions problems like harshness, lack of dimensionality, and poor resolution of acoustic space. Big-band recordings present particular challenges.

"When you have four trumpets and four trombones playing chords," Jung says, "there's tremendous complexity in the high frequencies. That's where I feel normal PCM breaks down. DSD sounds much more like analog, but without the problems of analog. You can hear around the instruments instead of just hearing the instruments. It's closer to a microphone feed than anything else I've ever heard."

John Eargle, director of recording for the classical Delos label, is more skeptical about the improvements ultra-

than 16 bits is enhanced dynamic range, which translates into greater clarity. "But there's not much to be gained beyond that," he adds. "No studio microphone I know of can take advantage of 24 bits."

MAKING THE MUSIC FIT

The controversy extends to data-compression schemes that would allow DVD-Audio discs to store more music. Super Audio CD employs a "lossless" compression scheme — called Direct Stream Transfer (DST) — that is said to reduce storage requirements by 50 percent. As noted earlier, except for the option to complement the mandatory high-definition PCM soundtrack with a compressed multichannel version, the WG-4 draft spec does not endorse a particular compression system. Warner's Rost said, however, that compression might be supported in a future DVD-Audio spec, but he noted that to insure compatibility, such future discs would still have to include an uncompressed two-channel PCM data stream.

While willing to allow lossless compression schemes, like DST, that enable all the information in a compressed data file to be recovered intact, some audiophiles remain strongly opposed to "lossy" compression schemes such as Dolby Digital. The benefit of a "lossy" scheme, however, is massive space savings. With DVD-Video, 384 to 448 kilobits per second (kbps) can be used for 5.1 channels of Dolby Digital audio. (Sony DVD players can accommodate Dolby Digital data streams of up to 640 kbps, the highest bandwidth sup-

Super Audio CDs are designed to play on a conventional CD player, but WG-4-spec DVD-Audio discs are not.



high-resolution coding schemes can deliver. "Once you're over a certain threshold in sampling rates, there's little if anything to be gained by going higher," he says. "I suspect that the threshold is around 50 to 60 kHz. I'm not sure how much better that would be than 44.1 kHz. There have been no double-blind tests on the audibility of different sampling rates, where everything else stays the same." Eargle says the primary advantage to recording with 20 bits rather

ported by the scheme.) For six channels of uncompressed 44.1-kHz/16-bit PCM audio, you would need more than 7 megabits (million bits) per second.

The goal with perceptual coding schemes like Dolby Digital isn't to *recreate* the original waveform; it's to produce a signal that is *aurally indistinguishable* from the original. How well Dolby Digital succeeds in this respect is a matter of debate. For music applications, dmp's Tom Jung finds it "total-

ly unacceptable." But John Eargle has done careful A/B comparisons of PCM and 448-kbps Dolby Digital versions of his own Delos recordings. "I can't tell the difference," he concludes. Music places much lower stress on multichannel perceptual coding schemes than movie soundtracks do, Eargle notes, and Dolby Digital is widely accepted for movie playback.

Efficient use of bandwidth is vital for broadcast applications and for a medium like DVD-Video, where you want to conserve as much space as possible for data-hungry video. For DVD-Audio, space savings are less of an issue, but still very important.

THE RIGHT BALANCE

While DVD is a much bigger data container than CD, it's not hard to use up all that space. If a record company wants to record 192-kHz/24-bit audio on a single-layer disc, it will have space for only two channels, assuming it

wants a playback time comparable to that of current CDs. However, Rost notes, the WG-4 spec allows record companies to use dual-layer construction. They could, for example, put 192-kHz stereo audio on one layer and lower-resolution multichannel audio on the other layer. Storage requirements for 96-kHz/24-bit PCM audio are more than three times what they are for Red Book CD audio. If you want to encode a 5.1-channel program with that high a resolution, playback time will be shorter than a standard CD.

Like Delos's Eargle, the AES task force questions whether ultra-high sampling rates and word lengths are even necessary in a consumer music format. A sampling rate of 60 or 64 kHz is "likely to be transparent for all users," its report concludes, while a 20-bit word length "has adequate dynamic range for transparency on practically all program material."

While 5.1 (six) channels offer signifi-

cantly greater spatial resolution than two channels, the task force recommended that this not be viewed as an upper limit. Better performance would be provided by a multichannel format consisting of (in order of importance) a front center speaker, a left/right front pair, multiple (perhaps four) surround speakers to reproduce a diffuse sound field, speakers at the front but far to the sides to reproduce early reflections, and additional rear-quadrant and overhead imaging speakers to reproduce reflections and occasional direct sounds. The task force recommends that the next jump in the number of channels be as significant as the jump from two to six channels and suggests ten channels as a possibility.

Both WG-4 and Super Audio CD provide for a maximum of six channels. However, the AES report says that with five discrete channels, it should be possible to matrix additional channels in the playback system. And, of course,

Music All Around Us

FOR MOST LISTENERS, multichannel playback will be the most obvious benefit of DVD-Audio. A few record producers are already making multichannel recordings.

John Eargle, director of recording for the classical label Delos, has been making all his recordings in multichannel format since 1996. He records in either six or eight channels and then mixes down to five channels. Eargle says that providing a more convincing sense of ambience will be one of the main benefits of multichannel recording for classical music. But he notes that there is repertoire that really benefits from multichannel presentation. The Berlioz Requiem and Te Deum, for example, call for brass choirs set apart from the orchestra. The same requirement is present in church music by early Baroque composers such as Giovanni Gabrieli. Ecclesiastical music, where performers may be arrayed throughout the church (choir in the rear, organ in the middle, instruments and soloists in front, for example), will also benefit from multichannel presentation, especially if the performance includes congregational singing or involves processional movement by the singers through the church.

Tom Jung, president of the jazz label dmp, says that many of his projects over the next year will be 5.1-channel DTS recordings. "Multichannel allows you to experience more of the acoustic space of a recording," he explains. "We do a lot of work in studios, but we still mike the room — it's akin to a jazz club acoustically. We just finished a 5.1-channel recording where the band is spread out in a U shape in front of the listener. We try to avoid putting instruments in the rear, but that's not to say it's wrong."

Jordan Rost, senior vice president of new technology for Warner Music Group, expects a large-scale transition to multichannel to take years. "Studio equipment and methodologies

will both have to change," he notes. "Right now we make multitrack recordings, but with two channels in mind. We'll need time for studio infrastructure to gear up to multichannel and more robust sampling rates. But in the end, when the professional audio community gets a larger palette, there will be some very exciting musical experiences we can't anticipate right now."

Maybe we can. Many multichannel music recordings are already available, both Dolby Digital recordings on DVD and DTS-encoded CDs. I listened to several music DVDs with 5.1-channel Dolby Digital soundtracks to get an idea how additional channels might be used with DVD-Audio.

For Dolby Digital DVDs, my test system included a Toshiba SD-3107 DVD player, a Marantz DP-870 Dolby Digital processor, a pair of PSB Stratus Gold speakers up front, driven by Marantz MA 500 mono amplifiers, PSB Stratus Mini speakers arrayed to the sides of my L-shaped listening room and driven by an Adcom GFA-545 stereo power amp, and a PSB Subsonic III subwoofer. I don't use a center-channel speaker, but I always sit dead-center when listening so that I don't have to worry about dialogue becoming dissociated from the screen.

In Tchaikovsky's *1812 Overture* on the Delos/Dolby DVD Spectacular disc (Delos DV 7001), sibilants from the choir were clearly audible from the side speakers. But this was partly because my listening-room layout forces me to use direct-radiating speakers for the surround channels. (One surround speaker must occupy a corner in my irregularly shaped room, so it can't be a dipole or bipole.) The multichannel presentation was enveloping, but in the end I found the stereo presentation more natural. Another multichannel recording on the same disc, *Barcarolle: Singing on the Water*, a solo-piano work by Richard Rodney Bennett, was utterly convincing. Not only did the surround channels provide a wonderful sense of space, but there was plenty of apparent depth behind the front speakers.

On Eric Clapton *Unplugged* (Warner/Reprise 38311), the DVD

any audio format with more than six channels should provide for simple mixdown for playback on systems with fewer channels. "We're very lucky to have the installed base of audio systems that are being used for movies," Eargle observes. "We should take it as a de facto standard and not try to screw it up."

In its report, the AES task force calls for scientific listening tests to determine the optimum tradeoff among coding methods, sampling rates, word lengths, and number of channels. In May 1997, the International Steering Committee announced that it planned to publish its recommendations for a DVD-Audio spec by the end of 1997. They were to have been based on studio listening tests (not scientific tests, in the strict sense) conducted by recording engineers and producers in New York, Los Angeles, London, Berlin, and Tokyo using a wide variety of music types in multichannel and stereo. But because the draft WG-4 spec that was released

in November was flexible as to sampling rate and bit count, the ISC abandoned its plans for listening tests and decided not to publish a formal set of recommendations.

FLEXIBILITY VERSUS CONTROL

The WG-4 spec allows producers to escape some of the tradeoffs mentioned above through the use of optional coding schemes such as Dolby Digital and DTS, both of which are far more efficient than PCM. But what happens if you buy a WG-4 disc with the multichannel program recorded using a coding scheme that your music system does not support? With the mandatory PCM track, you'll at least be able to get stereo sound, but you may miss out on one of the main benefits of DVD-Audio: multichannel presentation. WG-4's flexibility carries with it the risk of consumer confusion.

By contrast, Super Audio CD is a tightly specified format, with only one

coding scheme (DSD) allowed for high-definition multichannel audio, and another (Red Book PCM) for the CD layer. Comments Kawakami: "A consumer format has to be exact and unambiguous so that everybody knows what they're selling and consumers know what they're buying."

WG-4's flexibility extends into the future. Warner's Rost says that WG-4 could accommodate Sony/Philips DSD "if they chose to license it." (Philips officials have stated publicly that they will not.) Lossless compression could also be added in a future version of the spec, though discs would have to carry uncompressed PCM audio to accommodate earlier DVD-Audio players.

Other future developments could include "smart" multichannel, in which acoustic characteristics of the recording venue, such as reverb and echo, are stored as control data that could be used by a processor in the playback system to reproduce the environment.

recording's multiple channels are used subtly and persuasively. The 5.1-channel Dolby Digital presentation generated a sense of space that made me feel part of a live event. Besides ambience and audience noise, the surround channels also include sound from the backup vocalists at the side of the band, which extended the soundstage well beyond the front speakers.

Dave Grusin's DVD of *West Side Story* (N2K 10021) has some instruments in the surround channels. In "Tonight," sung by Gloria Estefan, guitar and cymbals were clearly audible from the surround channels. I would have liked slightly less aggressive use of the surround channels, but even so I preferred the immersive experience provided by the 5.1-channel mix to the very good stereo mix.

In the original *The Three Tenors* recording on DVD (PolyGram 440 071 223), the surround channels carry applause and some ambience, adding to the sense of occasion.

Swan Lake (PolyGram 440 070 201), a DVD featuring Rudolf Nureyev and Margot Fonteyn with the Vienna State Opera Ballet and the Vienna Symphony conducted by John Lanchberry, is a wonderful presentation of classical dance (despite a very soft video transfer) that offers both a stereo and a 5.1-channel mix. I can't say which I liked better. The surround mix was more enveloping, the stereo mix more focused.

On Stevie Ray Vaughan and Double Trouble *Live from Austin, Texas* (Epic 50130), the 5.1-channel presentation gives a nice "you-are-there" feel to the blues-rocker's concert recording.

I also listened to several 5.1-channel DTS-encoded CDs on a Denon DCD-1520 CD player and a Millennium Model 2.4.6 DTS processor, plus the same speakers and power amps I used to audition the Dolby Digital-encoded DVDs.

In *Days of Future Passed* by the Moody Blues (HDS 4418), the rock ensemble and vocalist were presented in front and the orchestra all around. Suitable for a 1970s concept album perhaps, but not completely convincing.

On *Forever Yours* by Marvin Gaye (DTS CD-1002), I found the adventurous multichannel presentation altogether enjoyable. In "I Heard It Through the Grapevine," backup vocalists were in the surround channels and tambourines and bongos were panned across the rear. Strings were in the rear in "Ain't Nothing Like the Real Thing." Some people might think it's gimmicky, but I loved it.

Similarly, *Boyz II Men II* (DTS CD-1001) is completely successful in multichannel. In "Vibin'," the talk and backup vocalists panned through all the channels. In "U Know," "All Around the World," and "50 Candles," instruments and backup vocals appear in the surround channels. The room-filling immersive effect was perfect for this music.

In the blues classic "That's All Right" by Junior Wells on *Come On in This House* (DTS CD-1003), the multichannel mix generated a very effective U-shaped soundstage that wrapped right around me. Ditto for the beautifully produced *Remembering Bud Powell* by Chick Corea and Friends (DTS CD-1004). The only blip was the strange piano presentation, with the left-hand line seemingly anchored in place while the right-hand line wandered all over the soundstage.

In "Hotel California" on *Hell Freezes Over* by the Eagles (DTS CD-1006), the audience and percussion sounds were placed solidly in the rear. I would have preferred a less directional treatment of these sounds, but that may have been partially a function of my own setup.

The Big Picture, Erich Kunzel's recording of film music with the Cincinnati Pops Orchestra (DTS CD-1005), features subtle but effective use of the surround channels and thunderous use of the LFE (low-frequency effects) channel.

Right now, multichannel music recording is in very much of an experimental phase. But if these early experiments are indicative of what we can expect from DVD-Audio, we've got a lot to look forward to.

— G.B.

With "artist initialization," a producer could include instructions for initial setup of the playback system to match the artist's intentions (which the user could override).

These features would not be accessible on first-generation DVD-Audio players, which raises this question: if the spec isn't frozen, will consumers always have good reason to stay on the sidelines? "We're moving to an era where people expect constant innova-



The Audio Engineering Society recommends against making six channels the upper limit for any new format.

tion," Rost replies. "That's why we want to make sure it does play two-channel PCM. We're moving to a situation where the player is more like a transport and spits out bits, and the receiver is what you'd upgrade."

COMPATIBILITY WITH CD

Backward compatibility with CD is prominent on the ISC's wish list for a next-generation music format. A hybrid format is important for the music industry because it frees retailers and distributors from dual inventories. And it's important for consumers who want to play discs on existing CD hardware as well as new DVD-Audio hardware. Sony and Philips say that hybrid discs should be "strongly recommended" for software, and the ability to read hybrid discs should be mandatory for players.

Rost says it's "a no-brainer" to make WG-4 DVD-Audio players that will read hybrid discs, but adds, "The question is how feasible will it be for software companies to make that kind of disc." Dual-layer DVDs are more complex and expensive to make than single-layer discs, he notes, and yield rates are lower. "If we have to throw away every other disc, or make them on separate machines, that will affect costs. Will consumers want to pay extra for hybrid discs? If they cost twice as much to make, does it make sense for companies to double their manufacturing costs to please a small number of consumers with DVD-Audio players?"

Replication costs for hybrid discs should be similar to those for dual-layer DVDs, Kawakami counters, because

the processes are similar. "The prevailing rule of thumb," he acknowledges, "is that dual-layer discs cost twice as much to make as single-layer discs." But he adds that "we're in the steep part of the learning curve." While yield rates may initially be an issue with hybrid audio DVDs, they are "entirely producible products."

The cost issue has to be kept in perspective. Cary Sherman, the executive vice-president and general counsel for

the Recording Industry Association of America (RIAA), observes: "The cost of manufacturing the physical product is minor compared with the cost of talent, marketing, and distribution. But with new plants and new technology, you could lose a lot on the yield, and a minor cost could become significant."

There's another cost issue lurking in the background, royalties on CD patents. Super Audio CD will be handled as an addendum to existing CD license agreements, Kawakami confirms. On the other hand, if record companies want to create hybrid discs based on the WG-4 spec, they'll have to enter license agreements with DVD and CD patent holders.

Patent royalties are a very small cost component in CDs, but they represent a significant revenue stream for Philips and Sony. Is that why the two companies are so adamant about backward compatibility? "We want to build on CD because it's a \$50 billion-a-year business that goes way beyond Sony and Philips," Kawakami responds. "The DVD Consortium has never shown a disc like the one we've shown where there's a Red Book layer that can be read by any CD player."

Counters Rost: "Sony and Philips have not mass-produced a hybrid disc to show the feasibility. They're all guessing and predicting." Moreover, hybrid production rules out the use of dual-layer music DVDs.

PEACE IN OUR TIME?

Both the WG-4 camp and Sony/Philips predict that the new generation of play-

ers will be available around mid-1999. At this point, that looks like an ambitious launch date.

The current WG-4 spec does not include copy protection. Rost says that the format when released will likely include digital encryption to limit digital copying, plus embedded signals (said to be inaudible) to limit copying from the player's analog output (but only on future recording decks). Rost says that additional feedback on copy protection will be required from music and technology companies before the WG-4 spec is finalized.

Sony and Philips have developed a sophisticated scheme consisting of digital encryption plus physical watermarking of discs. It will be possible to copy data from the disc, Kawakami explains, but without the original music DVD being physically present, it will be impossible to unscramble the data. There will also be embedded signals to control copying onto analog recorders. Rost says Sony's and Philips approach is too dictatorial.

Recall that an agreement on copy protection for DVD-Video took over nine months to reach, and you'll see that this isn't a minor issue. However, an agreement could come faster this time, since the cross-industry bodies and decision-making processes are already in place.

A more fundamental issue is the existence of two competing formats. The RIAA's Sherman is blunt on this matter: "If we have incompatible players and discs, the format will not be successful." There will be strong arm-twisting behind the scenes to bring the two camps together, and loud public posturing by the two camps aimed at having as many aspects as possible of their divergent proposals made part of a unified format.

The negotiations that created a common DVD-Video format took several months. The Sony/Philips MMCD format and the Toshiba/Time Warner SD format were different in detail, not in overall vision. The differences between the WG-4 DVD-Audio spec and the Sony/Philips Super Audio CD are much more fundamental. That could increase the time required to hammer out an agreement. It's possible, of course, that negotiations won't be successful. If that happens, both the music companies and consumers will be presented with two very different choices for a next-generation music format. □

NEW FOR THE ROAD

This year's autosound products promise to make driving a multichannel multimedia experience

Some of the latest autosound systems hitting the market could make you start thinking that you're James Bond or James T. Kirk as you cruise down the highway this summer. The latest crop of aftermarket car audio products, which even include audio/video system receivers, unquestionably hints that the new millennium is just around the corner.

There's a lot to choose from, including plenty of items that were once relegated strictly to your home or office. Now you can put a computer, a television set, and a VCR in your car. Want to watch a movie or send e-mail? Just pull in to the next rest stop!

This spring, you'll also have plenty of opportunities to check out MiniDisc as more offerings than ever before reach autosound dealers. Record your own compilation discs at home and let your favorite mix drown out some of that road noise.

You'll also discover a growing number of receivers that feature Radio Data System (RDS) technology, which displays the call letters or slogan of a suitably equipped station. RDS tuners can help you find stations with your favorite type of music or program format as you travel through unfamiliar areas. Want to tune in the local classic-rock station? Just punch in the format code.

For the convenience-minded there are six-disc in-dash CD receivers, and for the security-conscious there are radios that work only when a digitally encoded smart card is inserted. And for ambience enthusiasts there is multichannel surround sound, which lets you

create a three-dimensional sound environment in your car just like what you get in your home theater.

Whatever you might be considering for your vehicle, you'll find a dizzying array of new products on dealer shelves, some of them previewed in January at

puting, navigation, and telecommunications. Some manufacturers are even adding security and vehicle tracking to the package. Essentially, these systems give you the flexibility and freedom to do on the road what you might ordinarily do at home or in the office. In some cases they may even make you more productive in your mobile office than you can be at your desk.

Although there have been several false starts for auto multimedia in the past, all indications this time are that it's no flash in the pan. Systems on the market now or in development from a number of familiar names in autosound



Clarion's AutoPC (\$1,299) was designed in partnership with Microsoft. The single-DIN-size head unit is not just a CD receiver but a multifunction in-car computer.

the International Consumer Electronics Show in Las Vegas. All the prices quoted here are manufacturers' suggested retail prices. Street prices — what they'll actually sell for — will likely be less.

PCs and TVs A common theme among autosound makers for 1998 is multimedia — products that offer not just traditional audio but also video, com-

— including Alpine, Clarion, Eclipse, JVC, Kenwood, Pioneer, and Samsung — suggest that auto multimedia is going to be a booming new product category. Add in the efforts of such computing giants as Microsoft, IBM, and Intel, and you know that your car entertainment system is never going to be the same again.

One notable multimedia product is

By Jamie Sorcher



JVC's KD-SX1000 CD receiver (\$430) can control both a CD changer and a VCR like the KZ-V10 (\$430) shown below.



Kenwood's KDC-C661 six-disc CD changer (\$280) has a removable magazine and offers CD Text capabilities when it's hooked up to a compatible head unit. A disc-naming function allows users to store album titles and artist names for nonencoded discs.



Pioneer claims that its DEX-P1R CD tuner (under \$1,000) is the first head unit with a built-in digital crossover. It also features a graphic equalizer, digital signal processing, a 4-volt preamp output, and RDS capabilities.

Clarion's AutoPC (\$1,299), which was designed in partnership with Microsoft. It is basically an in-car computer that fits in a single-DIN opening — a common size for modern car components that mount using just one rectangular hole in the dash. The AutoPC will tune your radio, dial your cellular phone, give you turn-by-turn directions to the closest shopping mall or bank machine, provide real-time traffic and weather updates, and even read e-mail aloud so that you can keep your eyes on the road. The AutoPC is said to recognize more than 200 simple voice commands.

The AutoPC includes an eight-color LCD screen and a CD receiver with digital signal processing (DSP) equalization and an amplifier rated to deliver 35 watts each to four channels. It can also control an optional six-disc CD/CD-ROM changer.

Alpine's CVA-1000 system controller/receiver (\$1,300) features a motorized color LCD screen that retracts into the single-DIN unit. It is designed to interface with Alpine's NVA-N751A navigation and information system, and it can also control other Ai-NET products including a CD changer, a digital processor, and a security system.

From Eclipse, the Model 7301 double-DIN head unit (\$2,199) includes a CD player, a cassette deck, an AM/FM receiver, and a 5½-inch video monitor in one housing. The built-in amplifier is rated for 35 watts each to four channels. Eclipse's NOB (No Ordinary Button) feature is a rotary knob that controls multiple preamplifier functions.

JVC's mobile entertainment system includes the KD-SX1000R A/V control CD receiver (\$430), the KZ-V10 VCR (\$430), and a color LCD monitor. The KD-SX1000, available in August, is CD Text-compatible. It's equipped with RDS, and it can control both the ruggedized VCR and a CD changer. Pricing and availability for the monitor were not determined by press time.

Pioneer's Visual Audio system centers around the AVM-P505R main unit. It combines an RDS tuner and a four-channel amplifier (40 watts each) with either of two monitors: the DIN-size, motorized, flip-up AVX-505, or the stalk-mounted AVD-505. For flexible expansion, the main unit has inputs for a CD player or changer, a video-game system, and future Pioneer navigation systems, and there's also an extra video output for a second monitor. Scheduled to reach stores this summer, the system is targeted to sell for less than \$1,500.

Smart Heads Other noteworthy head units offer increased convenience. Sanyo offers three new in-dash CD receivers, including the MCX-400 (\$600), a single-DIN receiver with a built-in four-disc CD changer. It features a detachable front control panel that folds down to reveal the built-in changer mechanism. Other features include a 20-second antiskip memory and an antivibration suspension for the disc transport.

Nakamichi managed to make efficient use of available space and fit a six-disc changer in a single-DIN slot by using its magazine-free MusicBank system. The MB-75 (\$700) also has an AM/FM tuner, an amplifier rated to deliver 35 watts each to four channels, and a detachable front panel. In case six-disc capacity isn't enough for you, the MB-75 can also control an external CD changer such as Nakamichi's MF-51 (\$399), for a total of eleven discs at your disposal. Like the MB-75, the MF-51 has no removable cartridge. Eclipse also managed to cram a magazine-free six-disc changer into a single-DIN space with its Model 5961. It will be in stores this October for \$599.

If you don't go for an in-dash CD changer, there's a variety of outboard storage options for six to twelve discs. Kenwood has two new models. The KDC-C661 six-disc changer (\$280) supports CD Text, automatically showing the artist and title of a CD Text-encoded CD on the display of a compatible in-dash head unit. And in its high-end Excelon line, Kenwood offers its first ten-disc CD changer, the KDC-CPS81 (\$350). It has a single ten-CD magazine. Pioneer's CDX-P5000 (\$500), introduced last year, still holds the title as the largest-capacity car CD changer on the market with fifty-one discs.

Pioneer also claims to have the first CD head unit with a built-in three-way digital crossover, the DEX-PIR (expected to be priced below \$1,000 when it becomes available in June). It features 1-bit digital-to-analog (D/A) conversion with 20-bit accuracy, a 4-volt preamp output, and a signal-to-noise ratio of 120 dB. A thirteen-band graphic equalizer, digital signal processing, RDS capability, and digital compression complete the package. The DEX-PIR's CD slot is accessed through a motorized faceplate. If the face of the unit isn't removed within 20 seconds it retracts to its original position. In an innovative move, it can also be tilted at different angles so that you can see the display clearly.

Blaupunkt's KeyCard, shown here with the Toronto CD receiver (\$570), provides convenience as well as theft deterrence — it stores user preferences in its memory. Two cards are supplied so that different users can personalize the system.



Panasonic's CQ-DPG590 CD receiver (\$430) features a rugged chassis and a 10-second antishock buffer that's said to be effective enough to allow for installation in a boat.



The Sony MDX-62 six-disc trunk-mounted MiniDisc changer (\$550) can be used with an existing in-dash head unit.



JVC's KD-MX3000, the first combination MD/CD player, is due out this summer (price to be announced). The single-DIN unit accepts either type of disc through a single slot.

Blaupunkt's answer to theft-detering detachable or flip-down faceplates is a head unit that works only when you insert a digitally encoded smart card. Featured on its flagship 7 Series units, the Toronto CD receiver (\$570) and the Sydney cassette receiver (\$400), Key-Card is said to be a more effective deterrent than a detachable faceplate because it isn't interchangeable from unit to unit. (The odds of finding another KeyCard to match a stolen unit is one in 10,000, Blaupunkt says.) Also, the KeyCard is easy to carry — it fits in a wallet — so there's less temptation to leave it behind. Besides theft deterrence, the KeyCard saves your presets and system preferences. Since two cards are supplied with each head unit, two drivers can set up the same unit for their different listening habits.

Panasonic introduced a line of CD receivers certain to appeal to the sport/utility-vehicle crowd whether driving off-road or on pothole-filled streets. Four new G-tech models, including the CQ-DPG590 (\$430), feature a ruggedized chassis and a 10-second antishock memory that is said to be effective enough for installation on boats. The CQ-DPG590 has front, rear, and subwoofer preamp outputs and comes with a wireless remote control. It delivers 40 watts each to four channels.

MiniDisc Takes Off If you're not interested in a full-blown multimedia system in your car but do want to take part in another emerging trend, why not explore an up-and-coming format? New MiniDisc (MD) components are coming out this spring from several manufacturers, and many of them can be added to a system to provide dual MD/CD playback capabilities so that you don't have to leave your CDs at home.

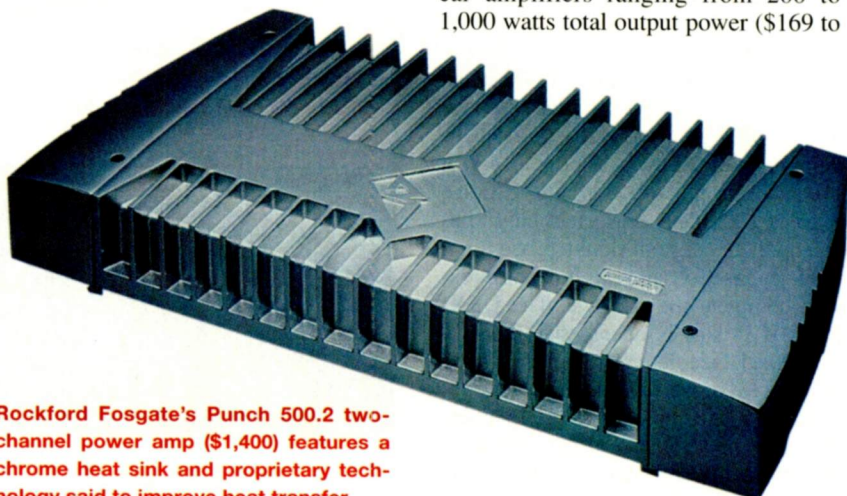
Sony, which invented the MD format and is spearheading the effort to popularize it in the U.S., has two new car MD receivers and an MD changer. The in-dash MDX-C7900 (\$450) combines an MD player and an AM/FM receiver with CD changer control. Key performance features include a 10-second antishock memory buffer for interruption-free listening if your car hits a bump in the road. Front and rear preamp outputs make for effortless addition of external amplifiers. For \$150 more, the MDX-C8900, available in July, has voice confirmation of control functions, which considerably reduces the need to glance at the receiver's front panel, allowing you to concentrate on the road ahead.



The VFX 4200 amplifier/processor (\$300) from NuReality features Focus technology from SRS Labs to get the stereo image up off the floor of a car.

After you choose a radio station or select a CD or MD track, the unit audibly verifies your choice. Audio enhancements include a preamp output level of 4 volts, to send a clean signal to add-on power amps, and a third preamp output with an adjustable low-pass filter for a subwoofer. Also, Sony's Adaptive Reception tuner senses how many radio stations are in an area and adjusts for the best reception and sound quality. The MDX-62 six-disc MD changer (\$550) is a great way for multifort fans to add MD without replacing the existing in-dash system. The compact unit fits in the glove compartment or arm rest and features a clear acrylic door with illumination so that you can see the MD labels at night.

Sony's MDR-500 (\$500) is a single-DIN MD receiver with CD changer controls. It delivers 30 watts each to four channels, and the AM/FM tuner has eighteen station presets. For instant recognition of the disc and track being played, a dot-matrix display shows track titles, artist names, and any other text data included on an MD. Sony also offers a three-disc single-DIN MD changer, the MD-P3 (\$800).



Rockford Fosgate's Punch 500.2 two-channel power amp (\$1,400) features a chrome heat sink and proprietary technology said to improve heat transfer.

The industry's only combo MD/CD player is from JVC. The in-dash KDMX3000 (price not available at press time), due out in July, is a single-DIN unit that accepts either type of disc through a single slot. For even more versatility, the player has controls for a stand-alone twelve-CD changer.

Processors and Transducers Speaker location can make the difference between hearing your music and living it. If you've got front speakers that aren't positioned in the best place — for instance, if they're in the doors down by your knees — then you're an ideal candidate for the NuReality VFX 4200 amplifier/processor (\$300). NuReality, which makes home audio processors featuring SRS technology, teamed up again with SRS Labs to create the VFX 4200, which combines a 40-watt-per-channel amplifier and both Focus and SRS 3D Sound processing in a compact 9 x 2½ x 9¼-inch chassis. The new Focus technology was designed specifically for use in automobiles, where generating a vivid stereo image is difficult because of poor speaker locations. Focus raises the stereo image vertically, putting the perceived soundstage in front of the listener regardless of the actual speaker locations. Focus enables the SRS 3D Sound processing, which is designed to create an immersive sound field from only two speakers, to work in a car environment.

The VFX 4200, said to be compatible with any two-channel car audio system, accepts either preamp or speaker-level inputs for both front-door and kick-panel speakers. Its slim design allows it to be concealed easily under a seat or in the trunk.

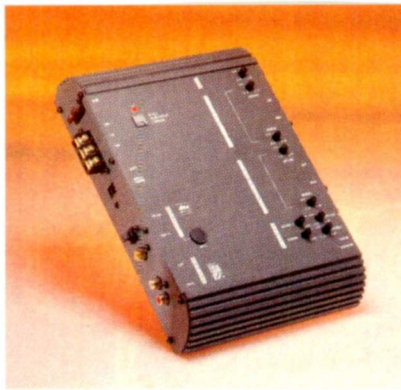
Sherwood has introduced seven new car amplifiers ranging from 200 to 1,000 watts total output power (\$169 to

\$449). Of particular note is the AX-6275 (\$449), a six-channel amp for multichannel music playback. The amp is complemented by the XDTS-80 DTS and Circle Surround decoder (\$599), which is designed to decode both discrete multichannel DTS-encoded CDs and matrix-surround-encoded CDs. With CDs that are not encoded, Circle Surround simulates four- or five-channel surround sound. The XDTS-80 is housed in a half-DIN chassis with controls located on the left side for easy operation by the driver.

KEF KAR Audio's second-generation KP-5.1 DTS multichannel audio decoder (\$1,500) can also give you three-dimensional sound in your car. It features an adjustable phantom center-channel level control, an LFE (low-frequency-effects) output, and high-pass and low-pass filters for all channels. The unit's plug-in DTS decoder module can be upgraded as future multichannel applications are developed.

Other notable new products include Rockford Fosgate's Punch 500.2 amplifier (\$1,400), which boasts a total output of 500 watts each to two channels into 2 ohms or 250 watts each into 4 ohms, making it the most powerful amp the company has ever introduced. The Punch 500.2 features Rockford's Maximum Efficiency Heat Sink Application technology, which is claimed to yield better heat transfer and translate into more watts per cubic inch and better thermal stability.

The Power Series from JBL, initially consisting of subwoofers only, expands this year with a line of five amplifiers starting at \$230 and topping out with the mono P2510 Class D subwoofer amp at \$550, which delivers 375 watts of continuous power into 2 ohms or 250 watts into 4 ohms. The P2510 incorporates a voltage doubler, which



KEF KAR Audio's second-generation KP-5.1 multichannel decoder (\$1,500) features a DTS module that can be upgraded easily as the technology advances.

JBL says allows an amp half the size of conventional amps — the amp measures 7½ x 2½ x 8¾ inches — to produce booming bass while using only half as much current as a traditional Class AB amp. All of the new amps come with JBL's Universal Interface input for effortless integration with factory-installed head units.

If you lease your car or just don't want to deal with the hassle of modifying the inside of your vehicle, you'll appreciate instant-fit drop-in enclosures such as the new lineup of custom-designed, vehicle-specific ThunderForms from MTX (\$250 to \$400). MTX identified the twelve top-selling cars among core autosound customers — the 1998 Ford Ranger and 1998 Chevrolet Suburban among them — and designed enclosures for its Thunder5000 subwoofers (also available separately) that fit the inside contours of each vehicle. These enclosures not only eliminate the need for hacking away at your car's interior but are designed so they won't infringe on your leg room or storage space.

Cerwin-Vega offers its first preloaded subwoofer enclosures in two versions. The BX-10 (\$239) has a 10-inch driver in an enclosure that measures 13½ inches high, 19¼ inches wide, and 14¼ inches deep. The BX-12 (\$259),

with a 12-inch driver, is in an enclosure that's 15¼ inches high and 19¼ inches wide with a mounting depth of 15½ inches. Both include built-in passive crossovers with 6-dB-per-octave slopes for easy installation without need of an external crossover.

Rockford Fosgate's new line of component speakers, the stylish Fanatic midrange/woofers, tweeters, and crossovers, are on dealer shelves now. There are three series, the FanaticP, FanaticX, and FanaticQ (\$130 to \$340). The top-of-the-line FanaticQ speaker systems are available in 4-, 5¼-, 6-, and 6½-inch variations, with mounting depths ranging from 2⅞ to 2⅞ inches.

JL Audio offers its new Evolution speaker systems in three series: the Evolution TR, VR, and XR (\$100 to



MB Quart's Q line of component speakers are built around an outboard crossover network that allows them to be bi-amplified if desired.

\$400 a pair). The budget TR series comprises four coaxial speakers ranging in size from 4 inches to 5 x 7 inches. The midprice VR series has three coaxials with 1-inch dome tweeters, ranging from 5¼ inches up to 6 x 9 inches, and a couple of two-way component systems with 5¼- and 6-inch woofers. The top-of-the-line XR series coaxials feature a 1-inch dome tweeter on a pivoting bezel that lets you adjust the tweeter's dispersion.

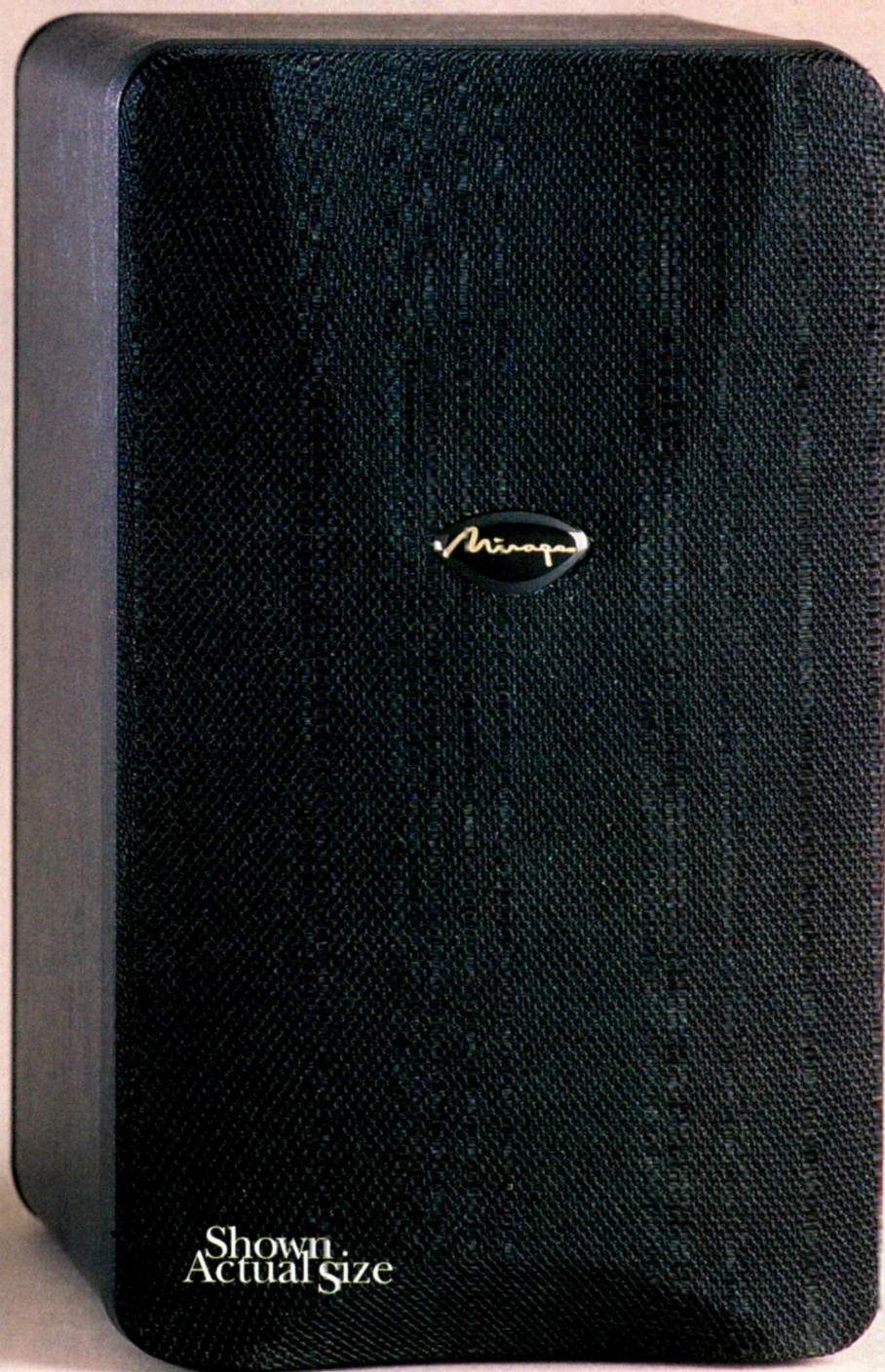
MB Quart's Q line of component speakers includes two models. The QM215.61Q (\$749) features a 1-inch titanium-dome tweeter and a 5¼-inch woofer. The QM218.61Q (\$799) puts the same tweeter with a 6½-inch woofer. The outboard crossover network allows a bi-amplified hookup if desired.

So there you have it, the new stuff for 1998. Today's car stereo isn't about just audio anymore, but information and multimedia as well. All the signs seem to be pointing to a whole new world of car entertainment just down the road. □



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BEST OF THE MONTH

REVIEWS

OUR CRITICS CHOOSE THE OUTSTANDING CURRENT RELEASES



CHRIS FLOYD/ATLANTIC

Page & Plant: Led, It Be

Heavy metal has been ridiculed, dismissed, and loved like the dickens for nigh on thirty years now. But today, this once singular genre means many things to many people. A recent feature in *The New York Times* identified no fewer than fourteen subgenres from “math metal” to “turncoat metal.” And among the bands acknowledged as forerunners was Led Zeppelin, classified under the heading “folk metal.” How quaint.

As guitarist, singer, and primary writers for Led Zeppelin, Jimmy Page and Robert Plant were metal’s Lennon and

McCartney (or, if you prefer, its Jagger and Richards). After varying success in their own careers, they restaked Zeppelin’s claim with the “unledded” *No Quarter* in 1994. Then came word that they were asking alternative-rock producer Steve Albini to help them make their first all-new studio album together since the nearly twenty-years-gone *In Through the Out Door*. What would this sound like? Well, surprise: *Walking into Clarksdale* sounds exactly like . . . folk metal. And it is very, very good.

Yes, the billing is “Page & Plant,” and, yes, all twelve songs are credited to Page,

Plant, bassist Charlie Jones, and drummer Michael Lee. But in its sound and fury and intelligence, *Clarksdale* comes across like prime Zep, a work that could have fit comfortably between that band’s third and fourth albums. Page and Plant produced, but I’ll bet that Albini, who recorded and mixed, helped give the album its punch-rock *Physical Graffiti* feel, right down to Lee’s echoes of John Bonham.

Clarksdale is not, however, an album that bashes you over the head. It begins subtly with “Shining in the Light,” an acoustic rumbler with some tasteful power chords — a “Ramble On” for the Nineties. “When the World Was Young” and “Blue Train” are two long-drizzling rain songs, and “Please Read the Letter” is one of those great, angled Page-Plant creations, making the most of sly harmonies and lurking guitars. From there it’s on to the saga “Most High,” a masterpiece of song construction with flavorsome, exotic instrumentation. Notice how the track slides in and out of its rock beat. Notice, too, that Page has worked textural wonders to this point in the album without a single guitar solo. That’s saved for the title track, a blues riff kicked up a notch by a teasing solo, and “Burning Up,” where Page really cranks in a “Sick Again” groove. The reflections of “When I Was a Child” calm things down until, eventually, the album closes with the raucous “Sons of Freedom.”

Friends, this is no retreat Led. Sparked by Page’s exploratory guitar and Plant’s steady, clear vocals, *Walking into Clarksdale* summons the fire and finesse of old in a work that is utterly fresh. It recalls the days when heavy metal was, simply, hard rock with attitude — or, in the case of Jimmy Page and Robert Plant, with attitude and grace.

Ken Richardson

PAGE & PLANT *Walking into Clarksdale*

Shining in the Light; When the World Was Young; Upon a Golden Horse; Blue Train; Please Read the Letter; Most High; Heart in Your Hand; Walking into Clarksdale; Burning Up; When I Was a Child; House of Love; Sons of Freedom (Atlantic, 61 min)

José Cura’s Panorama of Puccini Arias

Argentine-born (1962) José Cura came to singing after earlier studies in conducting and composition. Now, with considerable operatic experience (Chicago, Berlin, Milan) behind him, he is well launched

on an international career. His debut recital recording, an Erato CD of Puccini arias with the great Spanish tenor Plácido Domingo conducting the Philharmonia Orchestra, justifies the brightest expectations. We have an exciting tenor voice here, with a dark timbre that's reminiscent of the famed Mario del Monaco, but the transition from the baritone mid-range to the top register is smooth, and at the top his tones acquire a bright and brazen ring.

For a dramatic tenor, Cura displays a fine command of *mezza-voce* and a knowing sense of dynamic gradations. What is even more impressive is that he places these arias into their dramatic contexts. The five brief scenes he offers from *Manon Lescaut* clearly mirror the emotions of Des Grieux at various junctures of the action.

Likewise, the carefree Cavaradossi in the first act of *Tosca* is a long way from the death-haunted captive in Cura's sensitively shaded "E lucevan le stelle" from Act III. He etches the youthful bravado of



PHILUPPA LIDHOLM/ERATO

Tenor José Cura

Rinuccio (*Gianni Schicchi*) just as surely as the bitterness of Luigi (*Il Tabarro*). Powerful outbursts are heard in the two scenes from *La Fanciulla del West*, but the lyricism in the arias of Rodolfo (*La Bohème*) and Pinkerton (*Madama Butterfly*) is just as noteworthy.

The program, a panorama of Puccini's tenor roles, for some reason works backward chronologically, beginning with *Turandot* (1926) and ending with *Le Villi* (1884). It includes several arioso extracts from *La Rondine* and *Edgar* in addition to the standard choices. They are all performed with musicianship and sensitivity, well supported by conductor Domingo. It is hard not to detect the latter's good will toward a gifted young tenor whose burgeoning career shows signs of recalling his own and who may become the next great Otello in the first years of the twenty-first century.

George Jellinek

PUCCINI Opera Arias

José Cura, tenor; Philharmonia Orchestra, Plácido Domingo cond. (Erato 18838, 71 min)

Robertson's Native American Trip-Hop

Robbie Robertson's first solo album since 1991's *Storyville* is a courageous, passionate document that celebrates a culture driven underground. Hence the title *Contact from the Underworld of Redboy*, with "redboy" being a disparaging term for a Native American — a term that was hurled at Robertson, who is himself half Mohawk, when he was a young boy. He began reconnecting to the music of his ancestors via his gripping 1994 sound-

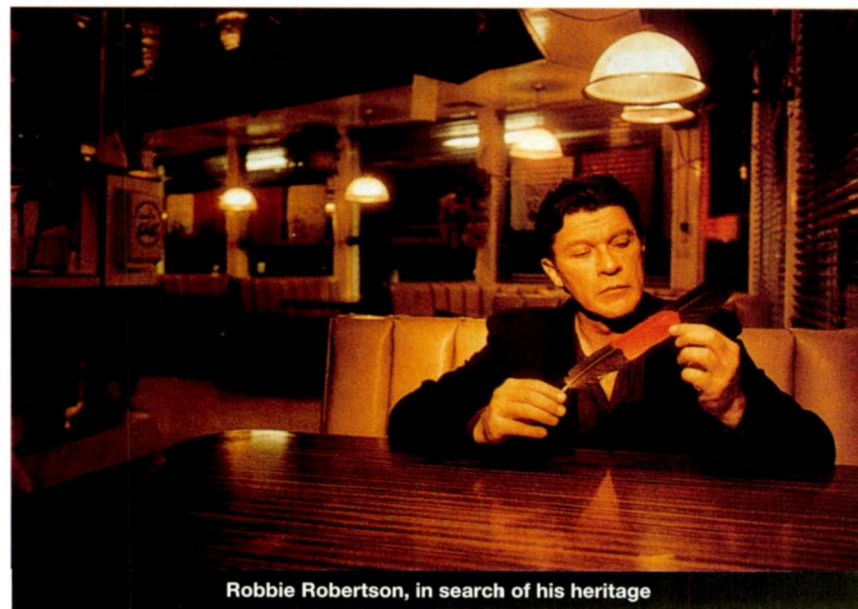
track to *The Native Americans*, a TV documentary. *Redboy* takes his pilgrimage one step further, viscerally making musical and philosophical connections between the worlds of the Native American reservation and the black urban ghetto.

Uncommercial yet up-to-date, *Redboy* welds ancient chants to contemporary samples and loops, forging an audacious hybrid that is fresh, hypnotic, and unmistakably tribal. Robertson kicks up a prideful, defiant cloud of dust in "Making a

Noise," where sampled Indian chants, drum loops, and other bits of sound (one voice repeats "wow") swirl in a song of resistance. "In the Blood" finds Robertson singing lyrically of the mystical pull of "old ways" and "the homeland," while healing and transcendence are the subjects of "The Code of Handsome Lake." Excerpts from a phone interview that he conducted with Leonard Peltier, a jailed Native American whom many regard as a martyred victim of injustice, provide the dramatic content of "Sacrifice" (and should serve as a call to arms to reopen his case).

Although Robertson's gravelly rasp has been a liability in the past — not for nothing was he largely absent from the Band's vocal bouquet — it seems appropriately freighted with the unvarnished honesty required by *Redboy*'s material. And his guitar playing is magnificently spiky, especially in "Rattlebone," a deep, insistent funk groove. "One sky above us / One earth below," Robertson chants in that song's common-sense call to unity, and it stands as a message for the ages from a thoughtful album that deserves a serious hearing.

Parke Puterbaugh



ANDREW MACPHERSON/CAPITOL

Robbie Robertson, in search of his heritage

ROBBIE ROBERTSON

Contact from the Underworld of Redboy

The Sound Is Fading; The Code of Handsome Lake; Making a Noise; Unbound; Sacrifice; Rattlebone; Peyote Healing; In the Blood; Stomp Dance (Unity); The Lights (Capitol, 61 min)

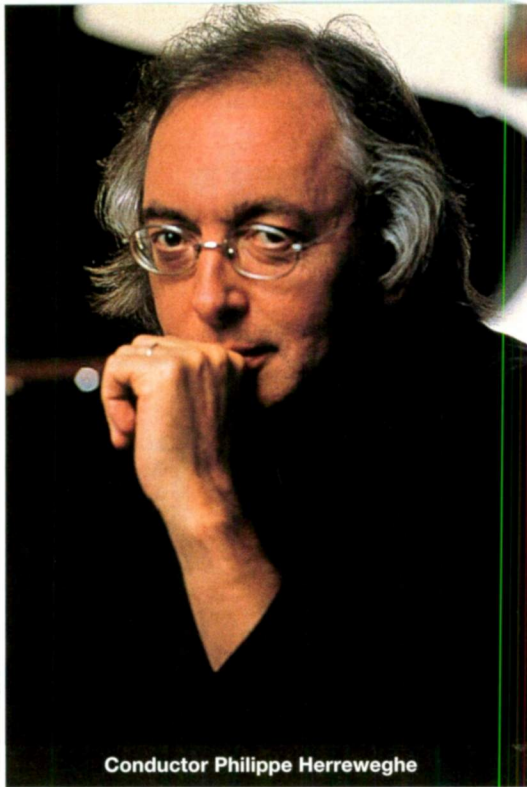
Berlioz's Intimate Oratorio

The intimately scaled oratorio Berlioz called *L'Enfance du Christ*, so unlike most of his other concert works, brought him one of his few unqualified successes at its première in December 1854, on the eve of his 51st birthday. It does not give the conductor or the orchestra the kind of opportunities for grand effects found in his Requiem, *The Damnation of Faust*, or the big symphonic works. Its longest instrumental number, in fact, is the "Trio of the Young Ishmaelites," an exquisite bit of genuine chamber music for two flutes and harp. But *L'Enfance* is not without real drama, and it is far indeed from the bland meditation suggested in all too many presentations.

Charles Munch, who held the work in high regard, recorded an elegant performance in 1956 with the Boston Symphony and the soloists Florence Kopleff, Cesare Valletti, Gérard Souzay, and Giorgio Tozzi that is still in circulation. Among the more recent recordings available now, top honors have generally gone to John Eliot Gardiner's on Erato with Anne-Sofie von Otter, Anthony Rolfe-Johnson, Gilles Cachemaille, José van Dam, and Jules Bastin. None of the singers in Philippe Herreweghe's new Harmonia Mundi version has a name as recognizable as some of those above, but, as it happens, they are without exception splendid in their re-

spective roles, and Herreweghe himself shapes the work more persuasively than anyone since Munch, Colin Davis (whose 1960 recording was reissued recently on London), and Jean Martinon (whose Tono recording circulated here all too briefly in a beautifully documented Nonesuch package).

Conviction in this case is assured in the very opening: Paul Agnew doesn't declaim the Prologue in an inflated manner but establishes a mood of intimacy and tenderness. Herreweghe follows up with rhythmically alert handling of the first scene, the "Nocturnal March," which effortlessly and assuredly combines a sense of mystery and expectation with an underlying base of good humor and confidence. That good humor, while present only in the most subtle sense, is actually quite a propulsive force in both the dramatic and musical unfolding of the work here, even in the scene with the soothsayers, which does evoke comparisons with *The Damnation of Faust*. Herreweghe responds tellingly to the shifting rhythms, keeps the momentum going, and in the end leaves the listener not so much impressed by his skill as marveling over the way the composer's inspiration and imaginativeness make the hour and a half go by so quickly. The recording itself, made in concert, is as well balanced as any studio version, and the audience never in-



HARMONIA MUNDI

Conductor Philippe Herreweghe

trudes. An out-and-out joy, this set is warmly recommended. *Richard Freed*

BERLIOZ *L'Enfance du Christ*

Véronique Gens (Mary), Paul Agnew (narrator), Olivier Lallouette (Joseph/Polydorus), Laurent Naouri (Herod), Frédéric Caton (father of a family); La Chapelle Royale; Collegium Vocale; Orchestre des Champs Élysées, Philippe Herreweghe cond. (Harmonia Mundi France 901632.33, two CDs, 95 min)



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STEVE EARLE *Early Tracks*

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GIL SCOTT-HERON

Winter in America; The First Minute of a New Day; From South Africa to South Carolina

(Rumal-Gia/TVT) These three titles (from 1974 and 1975) launch a reissue campaign of Scott-Heron's albums, each augmented with live, rare, and unreleased tracks and new liner notes by the artist.

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boxed set is divided into three themed discs: "The Stringband Era" (DeFord Bailey, Mississippi Sheiks), "The Soul Country Years" (Ray Charles, Etta James), and "Forward with Pride" (Charley, that is, plus Professor Longhair, Aaron Neville, Ted Hawkins).

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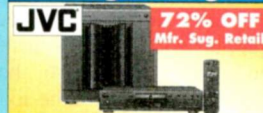


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NEW RECORDINGS REVIEWED BY CHRIS ALBERTSON, FRANCIS DAVIS, WILL FRIEDWALD, PHYL GARLAND, RON GIVENS, BRETT MILANO, ALANNA NASH, PARKE PUTERBAUGH, KEN RICHARDSON, AND STEVE SIMELS

ALISON BROWN QUARTET

Out of the Blue

(Compass, 41 min)

★★★★

Alison Brown, who like Bela Fleck has raised the art of banjo playing to a higher calling, debuts on a new label with a first-rate clutch of originals that flirt with jazz, Latin, samba, and pop. Accompanied

point to a certain New Agey sound here and there, but only a curmudgeon could nix an approach — or a virtuosity — this smashingly original. *A.N.*

ERIC CLAPTON Pilgrim

(Reprise, 76 min)

★★

Eric Clapton's first set of originals in nine years recaps a lot of his recent work: on the surface, *Pilgrim* is one of his blandest efforts, but somewhere in here is a solid, bluesy record trying to get out.

To some extent this is really the second album by T.D.F. — the “band” responsible for last year's ill-advised techno project *Retail Therapy* — as it again pairs Clapton with keyboardist/programmer Simon Climie, who coproduces and shares six of the writing credits. He's easily the most heavy-handed producer Clapton has ever used, including Phil Collins. In fact, Collins was positively subtle compared with Climie and his synth-and-loop overkill. More's the pity, because it sounds as if Clapton himself was aiming for a deep-soul album. He's in top vocal form, and the material — inspired by romantic breakups and by the death of his son Conor — includes a fine country number (“Fall Like Rain”), an uncharacteristically creepy acoustic song (“Circus”), and a handful of potentially great ballads.

However, as Clapton delivers a beautifully expressive, falsetto vocal in the title track, Climie adds an incessantly repeated, three-note guitar loop that renders the song unlistenable. The water-torture effect returns in “Sick and Tired,” where a loud and tinny fake-drum sound and a misplaced string section sink what could have been a scorching blues. Worse, Climie is apparently unaware that Clapton happens to be a guitarist: save for the brief closing statement in “You Were There” and an even briefer one in “One Chance,” *Pilgrim* may

be the first Eric Clapton album with almost no substantial guitar work. *B.M.*

COME Gently Down the Stream

(Matador, 67 min)

★★★★

Fronted by intense singer/guitarist Thalia Zedek and dour guitar hero Chris Brokaw, the Boston quartet Come works on a blues-rock base, favoring ominous minor chords, snarling vocals, and a less-than-sunny world view. *Gently Down the Stream*, the band's fourth album, is its epic, with longer songs and an even heavier sound. For all the twisted emotions on display, it's got no lack of big-guitar thrills.

The new rhythm section has juiced up the band, giving it an ebb-and-flow approach that works better than its earlier swamp drone. Brokaw has gotten less shy about playing flashy solos and big crunchy riffs; he also sings two of the twelve songs. Zedek's voice has always been a grabber, suggesting the young Patti Smith after major doses of heartbreak and cigarettes. But this time she tempers her approach so that her whispers are as mesmerizing as her screams. The lyrics deal with failed relationships and other disasters; you can tell there won't be a lot of holding back when the first track makes the request, “Leave me in one piece — please!”

The nine-minute “Saints Around My Neck” is the album's centerpiece and highlight. It begins with near-silence, gathers volume and momentum, kicks into shouts and chord crashes, and builds to a fearsome peak — three different times. Overall, *Gently Down the Stream* proves how exciting things can get when the best aspects of indie and classic rock meet head on. *B.M.*

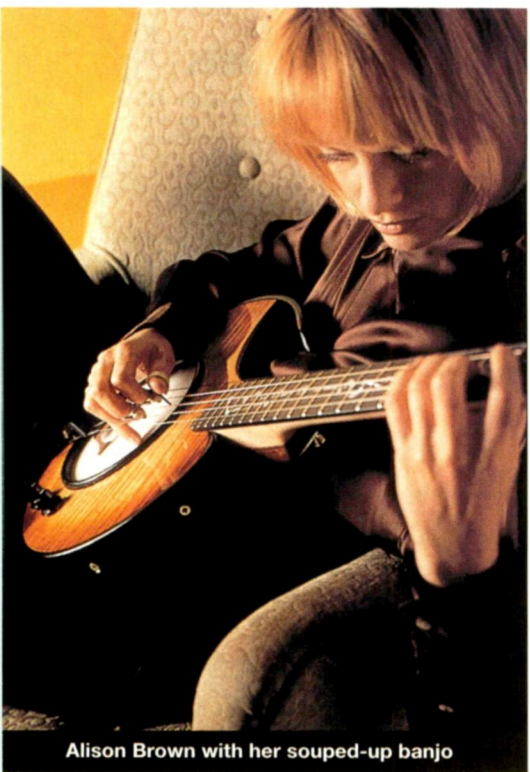
FAIRPORT CONVENTION

Who Knows Where the Time Goes?

(Green Linnet, 56 min)

★★★

The latest from Fairport Convention, England's longest-running folk-rock outfit, is a mixed bag of live and studio tracks, with a title song that Sandy Denny originally wrote for the band in 1969 (the new version is nice but unnecessary). The disc suffers a bit from recent pitfalls — too many ballads, too much of Simon Nicol's roman-



TONY BAKER/COMPASS

Alison Brown with her souped-up banjo

by the other members of her esteemed quartet — pianist John R. Burr, bassist Garry West, and drummer Rick Reed — she demonstrates even more fluid phrasing than on her four previous outings. This is partly because of the electric, nylon-string banjo she plays here, an invention that allows her to create an Earl Klugh-like mellow guitar sound. In technically demanding instrumentals like “Four for Launch” and “Mood Ring,” Brown may blur the lines between folk/acoustic music and modern jazz, but she does so without forsaking a melodic center or an emotional core. Detractors will

STAR SYSTEM	
Excellent	★★★★★
Very good	★★★★
Good	★★★
Fair	★★
Poor	★

ticism, too little instrumental firepower — but it also has more signs of life than the band has shown in some time.

“John Gaudie” is vintage Fairport, making celebratory pop/rock out of a traditional song and seguing into a daredevil reel. It features new fiddler/mandolinist Chris Leslie, who gives the band a necessary shot of energy. He also contributes “Spanish Main,” which has an unusually hard-edged, guitar-driven arrangement. This lineup still lacks a full-time songwriter, but it’s getting more creative with outside material, pulling a gem (“Life’s a Long Song”) from the Jethro Tull catalogue and pulling off a tale of obsessive love (“Dangerous”) by California songwriter Kristina Olsen. The live “I Heard It Through the Grapevine,” with guitar by Roy Wood and a vocal by ex-Fairporter Richard Thompson, doesn’t really fit but deserved to be released somewhere. *B.M.*

THE MOVE Movements:
30th Anniversary Anthology
(Westside, three CDs, 205 min)

★★★★★

Although the Move is often remembered as the band that begat the Electric Light Orchestra and Jeff Lynne, the truth is that it was by far the best British group of the 1960s that never made the charts in the States. *Movements*, an import retrospective, is long overdue, even if it’s not quite the complete works (for the rest, check out the excellent *Great Move* on EMI). What’s here, however, is choice: the band’s first three albums (*The Move*, *Shazam*, *Looking On*), all the singles, the ultra-rare live EP *Something Else* (with its killer cover of the Eddie Cochran song), and assorted oddities. Stylistically, the set is all over the map, with everything from a gorgeous psych-era pop ballad like “Blackberry Way” to a hilarious heavy metal pastiche like “Bron-tosaurus.” There’s a plethora of first-rate, occasionally even inspired rock-and-roll here, and leader Roy Wood turns out to have been a brilliant guitarist as well as a terrific songwriter — just check out the wah-wah-drenched solo that slices “The Last Thing on My Mind” right down the middle. Besides, if you’ve never heard “Fire Brigade,” you’ve missed out on one of the classic singles of all time. *S.S.*

NEUTRAL MILK HOTEL
In the Aeroplane over the Sea
(Merge, 40 min)

★★★★★

THE APPLES IN STEREO
Tone Soul Evolution
(spinART/Sire, 40 min)

★★★★★

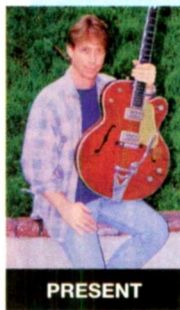
Does the world really need another wave of retro-pop bands? In this case, sure. Neutral Milk Hotel and the Apples in Stereo are two-thirds of a clique of bands —

FOUND ON CD

“My name is William Robinson / I’m 42 years old,” sings Bill Mummy in “The Ballad of William Robinson,” allowing himself a bit of nostalgia on his neat electric-folk album *Dying to Be Heard*. As the film version of *Lost in Space* hits theaters, Mummy continues to follow a different orbit in his long-lasting if little-heralded music career. He wrote, performed, recorded, and mixed *Dying* nearly single-handedly, issuing it on Infinite Visions/Renaissance (P.O. Box 681786, Franklin, TN 37068). Mummy has also seen some of his early work reissued on CD. Available from Oglio (P.O. Box 404, Redondo Beach, CA 90277) are *Voobaha* (with nine bonus tracks) and *Spazchow* (eight extras), albums he did with Robert



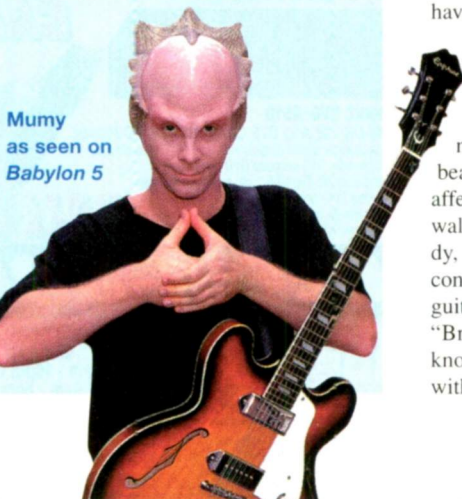
PAST



PRESENT

Haimer when they masqueraded as Barnes & Barnes. As any kid knows, they created “Fish Heads,” and as any Dr. Demento fan knows, they also created “Party in My Pants.” Next up for Mummy: a children’s album, *Kiss My Boo Boo*

(available direct from Infinite Visions, 508-896-7749), with a fresh take on “Fish Heads.” Mummy didn’t do a cameo for the new movie, but he does have this to say in his “Ballad”: “Dr. Smith will get us killed / And that may be just as well.” *K.R.*



Mummy as seen on *Babylon 5*

PHOTOS: BRYCE LILLEY/EILEEN MUMMY

the third being the more overtly psychedelic Olivia Tremor Control — linked by their friendship (they previously ran the small Elephant 6 label together), their personnel (Apples leader Robert Schneider also produces and plays with Neutral), and their Sixties obsessions (Schneider owns a studio called Pet Sounds). But they’re too creative and too weird to play that music straight-up, and these two albums are less a recreation than a reimagining of Sixties pop.

Delightfully hooky from start to finish, the Apples in Stereo’s *Tone Soul Evolution* is the more straightforward of the two, and it shows how gorgeous a low-budget recording can sound. From the Byrds guitar lick that kicks off “Seems So” and the Badfinger boogie of “What’s the #?,” the tunes revel in references, and not just trendy ones: the sunny harmony vocals hark back to the Association, and Melanie’s “Nickel Song” is referenced in “Tin Pan Alley.” But listen closely enough to Schneider’s wistful vocals and to haunting numbers like “Try to Remember,” and you’ll catch the album’s bittersweet undertone.

If Schneider is this clique’s sensitive Brian Wilson figure, Neutral Milk Hotel’s Jeff Mangum is its eccentric Van Dyke Parks, and *In the Aeroplane over the Sea* is a concept album every bit as confounding, and as fascinating, as Parks’s cult-classic *Song Cycle*. The abstract storyline appears to probe the subconscious of a retired World War I flying ace, and the lyrics flow like half-remembered dreams; in the same way, the music veers from an acoustic-guitar/vocal base to big shots of fuzz guitar, traditional Celtic sounds when you least expect them, and the sudden intrusion of a Salvation Army band. Mangum has the perfect voice to put across these tales — imagine Donovan with a few hints of menace — and the acoustic bits hook you into the continuously segued album’s surreal swirl. *B.M.*

SIXTEEN HORSEPOWER Low Estate
(A&M, 50 min)

★★★★★

A self-described “New Testament kind of guy,” David Eugene Edwards points Sixteen Horsepower where few rock bands have dared to go: to a place where a storm-tossed believer mulls over the wages of sin, the fear of God’s vengeance, and the weary hope for redemption. *Low Estate* is jarring in its forceful dissonance, minor-keyed angst, and disfigured beauty. The instrumental blend is odd but affecting, as in the title track’s slow, somber waltz of creaky fiddle, wheezing hurdy-gurdy, and carnivalesque marimba. The stark contrast of acoustic banjo and electric slide guitar limn the tale of lust and revulsion in “Brimstone Rock.” Fortunately, Edwards knows to lighten the load now and again with the sprightly, piquant bluegrass pick-

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ing and hymnlike celebration of "Ditch Digger" and the galloping, oldfangled hoe-down of "Black Lung." But mostly *Low Estate* is about serious reckoning, with a foot in the grave and an eye on the cross. P.P.



Spacehog: Royston, Antony Langdon

SPACEHOG The Chinese Album

(Sire/Warner Bros., 44 min)

★★★

Like a Nineties version of David Bowie/Ziggy Stardust's Spiders from Mars, Spacehog makes glam rock with a sense of fun and a flair for the dramatic. The mingling of these dissimilar qualities, most evident in the pop-operatic vocals of Royston Langdon, make the band seem a bit tongue-in-cheek, which is a decided relief from so much of alternative rock's severe, humorless rancor. Best of all, the guys really rock, notably in the propulsive "Goodbye Violet Race" and the futuristic bump-and-grind of "Mungo City." Intricate background vocals bounce around the tunes, as in the breathlessly paced shout-along "Captain Freeman." To top it all off, there's a sweetly hypnotic love song, "Almond Kisses," featuring lead vocals from guest Michael Stipe. (P.S. Don't believe your CD player when it says the album is 74 minutes long. The last selection, "Beautiful Girl," is 4 minutes of music and a half hour of silence. Pranksters!) P.P.

COLLECTIONS

GOLD AND PLATINUM

The Ultimate Rock Collection

(Time-Life Music, six CDs, 7 hours, 17 min; mail-order only; telephone, 800-488-4669)

★★★

His packages sold via TV infomercials are usually to be ignored, but Time-Life's *Gold and Platinum* can't help but attract the rock fan's attention. Indeed, this

six-CD set purports to be "The Ultimate Rock Collection," with 111 tracks spanning 32 years. And because a portion of the proceeds goes to the Recording Industry Association of America's Anti-Piracy Unit, the box includes many artists who otherwise wouldn't be caught dead on a set like this: the Beatles, Bob Dylan, the Who, Led Zepelin, Bruce Springsteen, U2, and R.E.M.

Roll the stats!

Playing times: 75:45, 78:37, 74:45, 75:47, 75:41, and 76:18. No complaints there.

Tracks per decade: 17 from the Sixties (but starting in 1964), 41 from the Seventies, 41 from the Eighties, and 12 from the Nineties (but ending in 1995). So, basically, the subject is classic rock.

Tracks per gender: 86 male, 9 female, 14 male and female, 2 other (by Michael Jackson — that's a *joke*, pal). Remember, the producers narrowed their sights to the ultimate *rock* collection, and classic rock means dirty white boys.

Tracks per race: 96 white, 7 black, 6 by bands with various racial/ethnic affiliations, 2 other (yup, Michael Jackson!). Again, the producers are talking rock (not R&B, soul, rap, or even pop), and that means dirty white boys. But if you're talking Jimi Hendrix and Stevie Wonder (and even Boyz II Men), how can you not talk Prince?

Edited tracks: Santana's "Black Magic Woman" (no "Gypsy Queen"), Stevie Wonder's "Living for the City," Yes's "Roundabout," Peter Frampton's "Baby, I Love Your Way," Boston's "More Than a Feeling." Inexcusable.

Misrepresentative tracks: the Doors' "Hello, I Love You," Blondie's "Rapture," David Bowie's "Fame," Van Halen's "Why Can't This Be Love," Elton John's "The One," Meat Loaf's "I'd Do Anything for Love (But I Won't Do That)," and Michael Jackson's "Human Nature" and "Dirty Diana."

Chronological hairpin curves: from the Cars' "Just What I Needed" (1978) to Aerosmith's original "Walk This Way" (1976), from Hootie and the Blowfish's "Hold My Hand" (1994) to Tears for Fears' "Sowing the Seeds of Love" (1989).

I know it's only "rock," but where are: Alice Cooper, Black Sabbath, Deep Purple, the Clash, Nirvana, Soundgarden — not to mention the Rolling Stones.

Printed matter: an 80-page booklet with liner notes and generally excellent photos — plus, "if you order now," a 128-page bonus book called *The Ultimate Rock Album Guide*, showing the cover and the discographical information of all the albums from which the tracks are drawn.

About those liner notes: three prominent writer/critics — Ben Fong-Torres, Barney Hoskyns, and Dave Marsh — were hired to do the track-by-track annotation, but instead of giving us worthwhile analysis, they rehash basic facts. Much of their talk cen-

ters on how many Gold and Platinum albums each artist has earned . . .

. . . hence the title: hence the Anti-Piracy Unit benefit, hence "The Gold and Platinum Story" and the "RIAA Awards Criteria" in the booklet, hence the selection of certain tracks. In the end, *Gold and Platinum* is an attractive, convenient commodity, but as "The Ultimate Rock Collection" it is woefully penultimate. K.R.

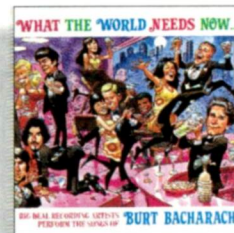
WHAT THE WORLD NEEDS NOW . . .

Big Deal Recording Artists
Perform the Songs of Burt Bacharach

(Big Deal, 46 min)

★★★★

If nothing else, this snappy tribute shows what an impressive roster of shiny, happy people the pop-happy crew at Big Deal have put together. A label with a mission — to keep the Sixties pop spirit alive and well in the Nineties — Big Deal treats the suave but soulful adult pop of Burt Bacharach (and lyricist Hal David) not with sneering Gen X irony but with a proper balance of reverence and wit. Those Japanese sprites Shonen Knife open things up with a phonetically enunciated rendition of "Rain-



drops Keep Falling on My Head" that's all crisp, simple chords and doe-eyed innocence. Bacharach's tunes readily lend themselves to a full-on power-pop treatment, allowing the Absolute Zeros to go to town in "(There's) Always Something There to Remind Me" and the Gladhands to attack "Promise Her Anything" with bravado. There are some weak patches, but they're more than compensated for by such moments as Cockeyed Ghost's heartbreaking, bone-crushing take on "Walk On By." P.P.

JAZZ

HANK CRAWFORD/JIMMY McGRUFF

Road Tested

(Milestone, 61 min)

★★★★

In the 1960s, the Hammond B-3 organ and the saxophone became the bacon and eggs of the club circuit, and the combination still works. *Road Tested* teams altoist Hank Crawford and organist Jimmy McGriff with guitarist Wayne Boyd and drummer Bernard Purdie, and in numbers like "Caravan" and "Mr. P.C." (John Coltrane's

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tribute to Paul Chambers) everybody cooks beautifully. This is one time when I wish that Rudy Van Gelder's cavernous sound had been dampened a bit, but that's a minor beef. I would not put it past me to slip this disc into my CD tray during off-duty hours. Funk, yes, but solid funk that forms an excellent example of the sort of thing that stimulated senses in smoke-filled hangouts when Motown and the Beatles sent many ears in a new direction. C.A.

MILES DAVIS QUINTET *The Complete Columbia Studio Recordings, 1965-1968*

(Columbia/Legacy, six CDs, 7 hours, 22 min; also available on audiophile vinyl from Mosaic by mail-order only; telephone, 203-327-7111)

★★★★★

For jazz, the 1960s was a tumultuous decade in which even those musicians who exerted the most influence were in turn influenced by their younger sidemen. Miles Davis was no exception. By 1963 the challenge facing the paradigmatic trumpeter was to put together a new band as reflective of his own character as the quintet he had led in the 1950s (with John Coltrane, Red Garland, Paul Chambers, and Philly Joe Jones), but one whose sound would reflect the innovations that had taken place in jazz since then, particularly those of Coltrane and Ornette Coleman. Davis took a step in the right direction by hiring pianist Herbie Hancock, bassist Ron Carter, and the incredible teenage drummer Tony Williams. Then, a year later, after finding both George Coleman and Sam Rivers wanting, Davis recruited tenor saxophonist Wayne Shorter from Art Blakey's Jazz Messengers.

At first, the new Miles Davis Quintet played a repertoire of standards and Davis originals closely associated with the earlier edition — bringing a 1960s edginess to these older numbers and displaying dazzling musicianship, but not yet establishing a distinct musical signature. It wasn't until the group first entered a studio in January 1965 — the point at which this electrifying six-CD set picks up the story — that the pieces fell into place.

Davis's earlier band had been essentially a forum for its soloists. This new outfit derived its identity from the compositions of its members, in particular those of Shorter. It implies no criticism of Davis to say that Shorter's inky, enveloping tenor sound and tonally ambiguous but curiously accessible harmonies set the tone for this band; to the contrary, the trumpeter gave Shorter license to experiment that he had never enjoyed with Blakey. Prodded by Hancock's spare comp, Carter's running bass, and Williams's mobile beat, Davis himself took gambles: his improvised lines became almost as splintered as those of Don Cherry, and it was during this period that he discovered his horn's upper register.

On the strength of the performances gathered here, Davis again emerged as the most influential in jazz, just as he had been in the late 1950s. Inspired by the example of his sidemen, he also made unexpected strides as a composer; in their exchanges in Davis's lapping "Tou de Suite," he and Williams reach a level of rough perfection virtually unmatched in jazz. And the inclusion of a rather tentative-sounding earlier take — one of a handful of fascinating, if flawed, never-before-released performances here — goes a long way toward illustrating the point made by annotator and coproducer Bob Belden that Davis used the studio as "a 'sound lab' or workshop."

The addition here and there of a guitar or two, Hancock's use of electric keyboards, and a number of pieces in which the "rhythm" instruments take the lead while the horns remain relatively static are further evidence of Davis's receptivity to new ideas at a time when the jazz rank-and-file was resisting the onslaught of funk and progressive rock. Of course, such elements became grossly exaggerated in Davis's work starting with *Bitches Brew* in 1969, and his sidemen also fell victim to the 1970s when they formed their own bands. Yet it would be a mistake to claim that the sidemen never reached their potential, because to do so would entail imagining music more innovative and exciting than on these six discs. And no one has that much imagination — not even Wayne Shorter, Herbie Hancock, Ron Carter, and Tony Williams, as it turned out. They influenced their boss, sure, but hearing this epochal music again, in light of what has followed, suggests they got back at least as much as they gave. F.D.

HOWARD JOHNSON & GRAVITY *Right Now!*

(Verve, 61 min)

★★★★★

The second release by Howard Johnson and his tuba choir, Gravity, is marred by the presence of guest artist Taj Mahal, whose vocals aren't in the group's league. But the rest of *Right Now!* is superb. The title tune, a Charles Tolliver composition, has Johnson and Dave Barger on taking flight from a seething cauldron of tubas. In Herbie Hancock's "Tell Me a Bedtime Story," Johnson offers an effective contrast by switching to the diminutive penny whistle. Also notable is "Svengali's Summer/Waltz," a tribute to Gil Evans. Here, the group evokes the smooth texture of Evans's intro to "Summertime," as Bob Stewart solos with dexterity and wit. The track then modulates into the Evans composition "Waltz," with Johnson, Barger, and Joe Daley handling the solos. Johnson plays baritone sax on a couple of selections, and the rhythm section, headed by pianist Ray Chew, contributes mightily throughout. C.A.

QUICK FIXES

TOMMY KEENE *Isolation Party*

(Mataador, 53 min) ★★ ★

On his fifth album, Keene is still flying the flag for unfettered pop music. Right off the bat, the finger-picked sparkle and shine of "Take Me Back" and the sunny strumming and loping, infectious beat of "Tuesday Morning" stand out. While the album misses a certain something (a splash of color, an outside opinion), it is an engaging, heart-on-sleeve effort from one of pop's most capable lights. *P.P.*

DAVID MURRAY *Fo Deuk Revue*

(Justin Time, 56 min) ★★ ★

This is a sometimes chaotic, sometimes monotonous, but often ambrosial mix of American jazz and pop with West African sounds. Murray's pinched tenor sax notes are effective in "Blue Muse," and the prepossessing, hypnotic "Chant Africain" modulates into a passage that has him riding expressively over a rich texture of rhythm and voices. *C.A.*

SEMI-SONIC *Feeling Strangely Fine*

(MCA, 51 min) ★★ ★

LIZARD MUSIC *Dear Champ*

(World Domination, 62 min) ★★ ★ ★

Coming after the stellar *Great Divide* (Best of the Month, August 1996), Semi-sonic's *Feeling Strangely Fine* is a sophomore slump — good, indeed, but no more. Rhythms, melodic phrasings, and production lack the earlier zing. If this is "a bedroom record," as leader Dan Wilson admits, it's a little too sleepy for me.

Dear Champ, on the other hand, is a marked improvement over Lizard Music's previous *Fashionably Lame*. The band is often cited as New Jersey's answer to XTC, and whether you hear these songs as homages, parodies, or smashing originals (or all three), you'll enjoy the loopy takes on Beach/Beatles pop, singer/songwriter folk, and jangly rock. *K.R.*

JULES SHEAR *Between Us*

(High Street, 62 min) ★★ ★

And so the question before the court is: Why does a first-rate pop-rock tunesmith like Shear suddenly want to get, like, uh, serious? *Between Us* is a song cycle about failed or failing relationships, in which Shear pits his reedy tenor against various singer/songwriter types ranging from Carole King to Ron Sexsmith. It's all very tasteful and musically understated — but I can't help remembering the fun that Shear had on the first season of MTV's *Unplugged*, which he created. Back then, he seemed to enjoy singing with other artists just for the hell of it. On "Between Us" it's more like he needs to unburden himself. Guess which is more entertaining. *S.S.*

TY TABOR *Moonflower Lane*

(Metal Blade, 44 min) ★★ ★ ★

KING'S X *Best of King's X*

(Atlantic, 74 min) ★★ ★

For all the talk of its pop leanings, *Moonflower Lane* still sounds like a good crunchy record by guitarist Ty Tabor's parent band, King's X. "Hollow Eyes," for example, is classic stuff, a tough rocker with a long melodic coda. Tabor handles all guitars and basses, Galactic Cowboy Alan Doss is on drums, and the record is teeming with great hooks and tugging choruses.

Rated just for its music, *Best of King's X* would deserve five stars, but as a quickie collection released by the band's former label, it can't begin to encompass the trio's thrilling scope. Still, there are nice out-of-the-way selections ("Pleiades," "Life Going By"), three fine unreleased tracks, and "Over My Head" from Woodstock II. On the horizon: a solo album from bassist Doug Pinnick as well as the first release by the band in its new deal with Metal Blade. *K.R.*

Lizard Music dishes out a pop smorgasbord



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

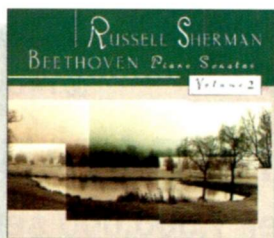
BEETHOVEN Piano Sonatas Nos. 4, 7, 17 ("Tempest"), 22, 28, and 31

Russell Sherman, piano (GM Recordings 2053, two CDs, 71 min)

★★★★★

Following the pattern established in Volume 1, this second installment of Russell Sherman's Beethoven piano-sonata cycle offers an early, a middle, and a late sonata on each of the two CDs. Disc 1 leads off with the Sonata No. 4, in E-flat Major, with its wonderful slow movement so full of potent silences. Then come the two short movements of the Sonata No. 22, in E Major. The late sonata is No. 31, in A-flat Major, whose great finale combines a transcendent slow movement with gripping fugal texture.

The early sonata on Disc 2 is No. 7, in D Major. The opening movement is swift and tautly woven, the slow movement in a tragic vein well beyond the conventions of its time; the mood is dispelled by the offhand cheerfulness of the last two movements. Midway comes the so-called "Tempest" Sonata, No. 17, in D Minor, full of ques-



tionings, broodings, and uncertain answers. The final sonata is No. 28, in A Major. The first movement, though marked "rather lively," is more like a calming adagio. It's followed by the enigmatic *alla marcia*, with lots of counterpoint midway, and the finale is an elaborate combination of a ruminative slow movement and a knotty fugue harking back to the opening pages of the work.

STAR SYSTEM

Excellent ★★★★★

Very good ★★★★

Good ★★★

Fair ★★

Poor ★

The two discs add up to more than two hours of superbly varied listening at the hands of a master who penetrates to the very core of Beethoven's thought, feeling, and harmonic-linear ingenuity. I especially like the volatility that Sherman brings to the "Tempest," the transparent texture of the opening movement of No. 22, and the terrific dash of the "hunting" music in No. 4, but the whole set is a real treat. The annotation by Sherman and by the producer, Gunther Schuller, is a bonus. Sound is true to life all the way, if just a mite distant. *D.H.*

BRUCH Violin Concerto No. 1; Scottish Fantasy

Akiko Suwanai, violin; Academy of St. Martin in the Fields, Neville Marriner cond. (Philips 454 180, 53 min)

★★★★★

A funny thing happened to the young Japanese violinist Akiko Suwanai on her way to becoming a major international soloist: she stopped performing and went back to school. After winning first prize in the prestigious Tchaikovsky Competition in Moscow in 1990, the teen prodigy toured Japan with the Academy of St. Martin in the Fields under the direction of Neville Marriner — then abruptly canceled all her concert bookings and came to New York to study at Juilliard. It was a move of uncanny wisdom and maturity, and it has paid off handsomely. This debut recording, with Marriner and the Academy, offers distinguished, brilliantly polished performances that ought to establish her in the first rank of her generation of violinists.

Bruch's Concerto No. 1 and Scottish Fantasy were once standard showcase numbers for violinists' debuts. Most musicians and critics today consider them old-fashioned, so for Suwanai to choose them for her first recording is perversely gutsy — not least because their technical demands are as formidable as those of any concert-hall works for violin in the repertoire. In the event, her playing is inspired throughout. She is equally endowed with the technical razzle-dazzle required to ignite the hectic rondo of the concerto's finale and with the elegiac tenderness to make the exquisite adagio sing. Her nimble, spirited performance makes a strong case for the long-neglected Scottish Fantasy, capturing

the folkish swing of the scherzo and the finale, which Bruch marked *allegro guerriero* (quick and warlike). You can almost see the Highland warriors clobbering their foes with claymores to the skirl of the pipes. *J.J.*



CRAWFORD SEEGER "Portrait"

Lucy Shelton, soprano; Reinbert De Leeuw, piano; Schönberg Ensemble, Oliver Knussen cond. (Deutsche Grammophon 449 925, 72 min)

★★★★★

Ruth Crawford Seeger, wife and partner of the ethnomusicologist Charles Seeger, was both a remarkable composer and a remarkable human being. Her own music was powerful, terse, and innovative, but during the middle 1930s she and her husband became prime movers in the first great American folk-song revival. She turned back to her own creative work in the late 1940s but died in 1953 at age 52.

This CD presents an overview of her music. All of the selections are brief and tautly organized. The musical language ranges from post-Scriabin or proto-Ivesian in the Music for Small Orchestra (1926) and the Three Chants for women's chorus (1930) to anticipations of Elliott Carter in the String Quartet (1931), an austere and magnificently bleak affair.

The three Carl Sandburg songs (1930-32) — "Rat Riddles," "Prayers of Steel," "In Tall Grass" — are simply stunning. Soprano Lucy Shelton does her part valiantly, but she is rather overwhelmed by the aggressive instrumental textures called for by the scoring, including oboe, percussion, piano, and sometimes orchestra. *Two Ricer-care* are settings with relentless piano accompaniment of fiercely left-wing agitprop texts by the Chinese-American poet H. T. Tsiang. Shelton is at her eloquent best here, her singing loud, clear, and powerful, with no balance problems.

The recorded sound is well nigh flawless,

and the performances by the Schönberg Ensemble under Oliver Knussen and the various others involved were clearly labors of love. This CD is not only a major contribution to the discography of American music but also fine listening. *D.H.*

FAURÉ String Quartet

SAINT-SAËNS String Quartets

Miami String Quartet (*Conifer/BMG 51291*, 75 min)

★★★★

Fauré's lone string quartet, his last completed work, and the two that Saint-Saëns also wrote late in his life have received little attention in terms of either recordings or performances in American venues. The corrective for their underexposure may be at hand: a new Conifer CD on which all three of these beautiful works are performed by the young Miami String Quartet with both the polish and the commitment that could take them out of the "novelty" category at last.

Beautiful these quartets surely are, and in ways thoroughly characteristic of their composers, neither of whom, writing at an advanced age in a genre he had not embraced before, showed any weakening of his power to craft a good tune or deliver it in the most appealing harmonic wrapping. The Miamians are superb advocates, their total identification with the music demonstrated in ways wholly consistent with the composers' own unflinching tastefulness, in playing that is at all times smooth yet never without depth, precise but never unfeeling, balancing unforced elegance and unfeigned warmth as instinctively as Fauré and Saint-Saëns themselves did in their scores. The recorded sound does full justice to the music and the performances, and Conifer has provided authoritative annotation. *R.F.*



KRENEK Symphony No. 2

Leipzig Gewandhaus Orchestra, Lothar Zagrosek cond. (*London 452 479*, 65 min)

★★★★

Ernst Krenek's output covered every area of twentieth-century performance practice, from Neoclassicism and dodecaphony to the realm of the aleatory and magnetic tape. Of the three symphonies he composed in his early twenties, No. 2 is the most substantial. Indeed, it is a real brute of a score, running well over an hour and calling for a Mahler-sized orchestra.

In a sense taking up where Mahler left off, this symphony could be described as a pantonal web woven of polyphony, ranging from the extremely dense to a 53-measure unison episode for first violins occurring in the finale. The middle movement is a fugally textured scherzo of sorts, with much dotted figuration suggestive of later Hindemith and Shostakovich. The beginning of the final movement brings us to a post-*Tristan*

milieu, but elements from earlier in the symphony progressively work their way into the sonic web and coalesce at the close into a kind of primal roar of dissonant protest. Krenek was not speaking idly when he described this as his "tragic symphony."

Conductor Lothar Zagrosek and his Leipzig players make the most of the music's drama while keeping its complex interweavings and rhythmic patterns remark-

Devil's Advocate

Andrew Manze has been called the Stéphane Grappelli of Baroque violin playing, although the Paganini of the Baroque might be more to the point. The first of his two new Harmonia Mundi CDs shows off his solo playing in works by Tartini, and the second, featuring works by Vivaldi, shows his outstanding capabilities as both solo violinist and musical leader.

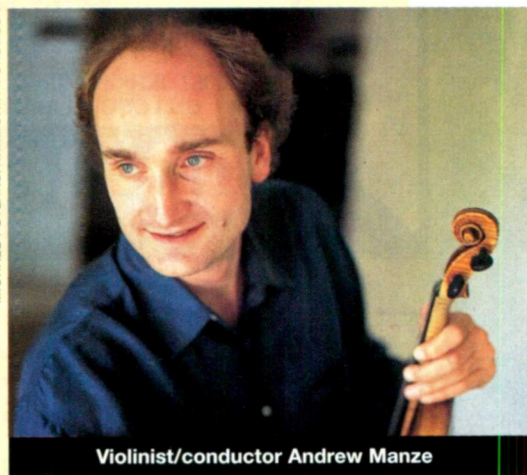
The real Paganini of the Baroque was Giuseppe Tartini, and it is logical that Manze should take on the infamous "Devil's Trill" Sonata and play it seamlessly, fiendishly, and without benefit of accompaniment. Did the devil carry a continuo ensemble around with him? The *Sonata del Diavolo*, as the composer called it, will always be the big favorite, but there are other items of interest here, notably a *Pastorale* for *scordatura* violin (that is, one that's unconventionally tuned, or "mistuned"), another substantial sonata, and a series of variations on a theme taken from Corelli's treatise on how to play the violin. All of these items are played without accompaniment but with a great deal of improvisatory freedom and flair, which is exactly how they should be played.

Tartini's most famous contemporary was, of course, the "Red Priest" of Venice, Antonio Vivaldi. The concert for the Prince of Poland after which Manze's second CD is titled was a gala evening in 1740 marking the visit of Prince Frederick Christian, Elector of Saxony, heir to the throne of Poland, and a great music lover. Vivaldi created four works for that evening, and the scores were apparently taken home by the prince and survive in the Dresden state library. One of them is a string sinfonia, but the other three are concertos for a diverse collection of instruments, including lute and viola d'amore in the Concerto in D Minor, solo and "echo" violins in the Concerto in A Major, and recorders, chalumeaux (proto-clarinets), mandolins, theorbos (big lutes), and

two violins imitating a tromba marina (a peculiar one-string instrument) in the extraordinary Concerto in C Major.

Those remarkable and rather delicate works are supplemented on the disc by two more familiar and robust concertos

MICHAEL PUTLAND/HARMONIA MUNDI USA



Violinist/conductor Andrew Manze

for solo violin from an earlier and very different collection. These are also well-performed, dynamic works, but it is the music for the Polish prince that provides most of the revelations and a lot of the charm. —Eric Salzman

TARTINI Sonata in G Minor ("Devil's Trill"); Variations on a Theme of Corelli; Sonata in A Minor; Pastorale
Andrew Manze, violin (*Harmonia Mundi USA 907213*, 69 min)

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VIVALDI Concert for the Prince of Poland (Sinfonia in C Major, RV 149; Concertos in D Minor, RV 540; A Major, RV 552; and C Major, RV 558); Violin Concertos in E-flat Major and C Major (RV 253 and 180)

The Academy of Ancient Music, Andrew Manze, cond. (*Harmonia Mundi USA 907230*, 65 min)

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ably clear. The rich and full-bodied sonics are up to London's best standard. *D.H.*

SCHUBERT Symphonies No. 5 and No. 8 ("Unfinished"); Rosamunde (excerpts)
Das Neue Orchester, Christoph Spering cond.
(Opus 111/Harmonia Mundi 30-192, 61 min)

★★★★★

While period-instrument Schubert is nothing new by now, these readings of thrice-familiar works by the Cologne-based Das Neue Orchester under its founder, Christoph Spering, are, if not "revelatory," surely provocative in the most positive sense. For all his departures from our comfortable twentieth-century norm, Spering manages to reaffirm the essential warm-hearted character that has made this music so vastly beloved over the years.

His orchestra's size is based on the one Schubert would have heard performing his *Rosamunde* music in a Viennese theater or introducing his Fifth Symphony at Otto Hatwig's house. Nothing new in that, either, but this time it really is an instance of "less is more." There is nothing small-scaled about the *interpretation*, and no pulling of punches. In addition to the melancholy caress of the famous lyric theme in the symphony's first movement, there is a power in the exhortations of the brasses and drums that is as stunning as it is unexpected. Moreover, the splendid recording takes advantage of the reduced forces to give us an exceptional orchestral transparency without undercutting the orchestral solidity.

Schubert marked the slow movement of the "Unfinished" Symphony not only *andante* but also *con moto*. Spering takes him at his word, moving the music along briskly enough to lop off about a third of its normal timing, but he does so without self-consciousness or a hint of breathlessness.

A somewhat brighter balance of charm and sinew enlivens the adorable Fifth Symphony, which can seldom have been so thoroughly and happily engaging, and the Second Ballet Music from *Rosamunde*. The famous entr'acte from that score, which Schubert used also in an impromptu for piano solo and a string-quartet movement, is taken at a surprisingly expansive pace — and that works, too. *R.F.*

SCHUMANN Liederkreis; Dichterliebe; other songs

Thomas Hampson, baritone; Wolfgang Sawallisch, piano (EMI 55598, 60 min)

★★★★★

Aside from containing a generous portion of Robert Schumann's settings of Heine poems, as inspired a mating of poetry and music as ever existed, this Thomas Hampson recital CD offers a near discovery: the original sequence of twenty Heine songs, titled *Lyric Intermezzo*, from which Schumann chose the sixteen components of

his famed *Dichterliebe* cycle. While known to scholars, the original sequence has never been recorded before.

Hampson's tenor-like baritone suggests the illusion of youth, and his lyrical delivery serves as an ideal instrument for these Romantic songs. The quiet anguish of "*Wenn ich deine Augen seh'*" and the subtle heartbreak of "*Hor ich das Liedchen*" are eloquently captured, and the songs in which Heine's bitter irony comes to the fore are interpreted with unexaggerated emphasis. Only in the closing "*Die alten bösen Lieder*" do we miss a more solidly supported bottom range.

Equally outstanding is his way with the earlier *Liederkreis*, in which the poems range from dreamy lyricism to painful reminiscence and from yearning nostalgia to anticipations of death. The three brief songs in *Der Arme Peter*, of which only the last is offered here, contrast a seemingly cheerful wedding music with the heartbreak of a spurned lover, rather in the manner of one of the *Dichterliebe* songs ("*Das ist ein Flöten und Geigen*"). Hampson's fervent yet unmannered singing is a delight throughout, and it is perfectly balanced with the rich tones and firm rhythms of Wolfgang Sawallisch's pianism. *G.J.*

SIBELIUS *Karelia* (complete); *Kuolema*, incidental music; *Valse Triste* (concert version)

Vocalists; Lahti Symphony, Osmo Vanska cond. (Bis 915, 75 min)

★★★

Sweden's Bis label, as part of its complete survey of the works of Sibelius, has reconstructed, with the help of the contemporary composer Kalevi Aho, the master's music for a 1893 pageant about Finland's Karelia district. The suite from *Karelia* has long been a pops-concert staple, and now we get to hear the rest of the score. The CD also offers the complete incidental music for *Kuolema* (*Death*, a gloomy 1903 play), from which the famous *Valse Triste* was extracted.

For the devout Sibelian, this will all be of considerable interest, and the masterly historical notes are almost worth the price of the disc by themselves. But other listeners will no doubt feel that the composer preserved the best of this music in the *Karelia* suite and in the expanded concert version of *Valse Triste*. The rest of the *Karelia* score strikes me as mostly workaday, and *Kuolema* is even slighter. Osmo Vanska elicits vital and sensitive performances from his instrumental and vocal forces. The recording is flawless in its texture and ambience. *D.H.*

WEBER *Oberon*

Inga Nielsen (Rezia), Vesselina Kasarova (Fatime), Peter Seiffert (Hüon), Bo Skovhus (Sherasmin); Rundfunkchor Berlin; Deutsches

Symphonie-Orchester Berlin, Marek Janowski cond. (RCA Victor 68505, two CDs, 121 min)

★★★

Weber's *Oberon*, his last stage work, was based on Shakespeare's *A Midsummer Night's Dream*. Operatic producers have been struggling with it ever since its 1826 premiere for the sake of its musical riches, including its brilliant overture. Rezia's splendid pre-Wagnerian aria "*Ozean, du Ungeheuer*," and some inspired "fairy mu-

sic" worthy of Mendelssohn's own *A Midsummer Night's Dream*.

In this new RCA set, the spoken dialogue is severely cut and various acting parts are eliminated, which is all to the good for listeners not conversant with German. Sad to say, knowing German only makes the libretto's amalgam of disparate elements seem all the more absurd.

The performance, however, is exemplary. The soprano Inga Nielsen has a lovely voice

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BRAHMS Choral Works

Kansas City Chorale, Charles Bruffy cond. (*Nimbus 5524, 65 min*) ★★
 The Kansas City Chorale's Brahms anthology varies in tone from the severe (the two Op. 29 motets) to the romantic (the Op. 17 women's choruses and the five part songs of Op. 104). The long decay time of the recording locale tends to blur the clarity of the choral singing. The horn obbligatos provide lovely atmosphere for the Op. 17 pieces, and Cynthia Siebert's piano accompaniments are unfailingly sensitive. *D.H.*

CHESKY Three Psalms

Deutsches Filmorchester Babelsberg, Stephen Somary cond. (*Chesky 0163, 52 min*) ★★ ★★
Three Psalms for string orchestra by David Chesky — who co-founded and runs the audiophile Chesky record label with his brother — are meditations on eternal things, like death and resurrection, in a slow, Neoromantic manner. If you're seriously out of sorts, this gloomy, obsessive music might suit your mood. Excellent sound and performance. *E.S.*

HANDEL Orchestral Works

Virtuosi Saxoniae, Ludwig Güttler cond. (*Berlin 11392, 61 min*) ★★ ★★
 This mix of familiar and less familiar Handel, handsomely performed and recorded, makes a very attractive hour of music. Included are the overture to *Atalanta* (with the conductor, Ludwig Güttler, as the brilliant trumpet soloist), two concerti grossi from Op. 3 and one from Op. 6, the last of the three *Concerti a Due Cori*, and a short suite from the *Water Music*. The whole presentation is first-rate. *R.F.*

ANDREA BOCELLI

Viaggio Italiano
 Andrea Bocelli, tenor; Moscow Radio Symphony, Vladimir Fedoseyev cond. (*Philips 314 533 123, 62 min*) ★★ ★★ ★★
 A cross between Julio Iglesias and Luciano Pavarotti, Andrea Bocelli presents his operatic side here in a recital of arias and songs that demonstrate the thrilling beauty of the classic Italian tenor voice. He's better in the arias than in the Neapolitan songs, and purists will find things to criticize, but this guy will bring new audiences to classical music, and I applaud that.
William Livingstone

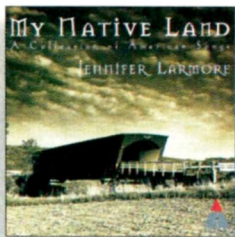
and more flexibility than Birgit Nilsson in a previous recording (1971). Peter Seiffert's tenor rises to the ornate and virtuosic demands of Hüon's heroic aria, and the baritone Bo Skovhus is a warm-toned and sympathetic Sherasmin. Vesselina Kasarova's music would benefit from a lush mezzo tone, but musically she is fine, and there isn't much that can be done with the character anyway. Melinda Paulsen and Deon van der Walt are good in the minor roles of Puck and Oberon. Yes, Oberon, the title character, is a minor part — one of this opera's many oddities. Marek Janowski and his chorus and orchestra treat Weber's brilliant music with the crispness and transparency it deserves. *G.J.*

COLLECTIONS

JENNIFER LARMORE

My Native Land
 Jennifer Larmore, mezzo-soprano; Antoine Palloc, piano (*Teldec 16069, 75 min*)
 ★★ ★★ ★★

In "My Native Land," Jennifer Larmore gives us songs by major American masters (Ives, Barber, and Copland) as well as minor ones (Lee Hoiby, John Duke, Richard Hundley, and John Jacob Niles), but there are also some interesting newcomers and half-forgotten voices from the recent past, such as the Midwestern composer Lora Aborn and the tragically short-lived Charles Naginski (1909-1940). Among the newcomers is Jake Heggie, represented by exceptionally sensitive folk-song settings



and by imaginative treatments of Rilke ("To say before going to sleep") and A. E. Housman ("White in the Moon").

At least a dozen other items struck responsive chords — the four Barber songs, of course, Hoiby's "A Letter" on a poem by Emily Dickinson, Ives's hilarious "Memories (Very pleasant)," Naginski's chilling setting of Edward Arlington Robinson's "Richard Cory," and Richard Hundley's ineffably haunting "The Astronomers."

Larmore has a big voice that she uses with enormous flexibility and command of color and nuance. Her diction is splendid for the most part but tends to be overridden by sheer vocal magnitude. I am therefore thoroughly incensed by the inclusion of texts for only ten of the thirty songs on the

CD, a particular annoyance in view of their relative obscurity. It's a regrettable blemish on an otherwise distinguished production. Antoine Palloc provides expert collaboration at the keyboard. *D.H.*

YO-YO MA

The Soul of the Tango
 Yo-Yo Ma, cello; tango ensemble, Jorge Calandrelli cond. (*Sony 63122 64 min*)
 ★★ ★★

Yo-Yo Ma has chosen mostly unfamiliar works by Astor Piazzolla for this CD, arranged for various combinations of cello, piano, and guitars in a somewhat classical style. There is also straight-ahead tango material recorded in Buenos Aires with the likes of violinist Antonio Agri, guitarist Horacio Malvicino, bassist Hector Console, and pianist Gerardo Gandini, all of whom played with the master. Three of these tracks appear to be Piazzolla's old arrangements, and Ma, an admirable team player, simply takes the original cello parts; these are, perhaps not surprisingly, the most satisfactory selections. Elsewhere, he actually duets rather effectively with some bandoneón tracks by Piazzolla himself. Ma obviously has deep feelings about this music, but the results here are often soft and romantically diffuse. *E.S.*

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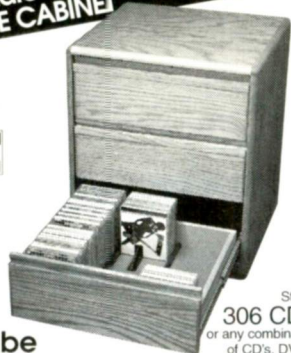
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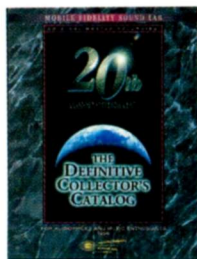
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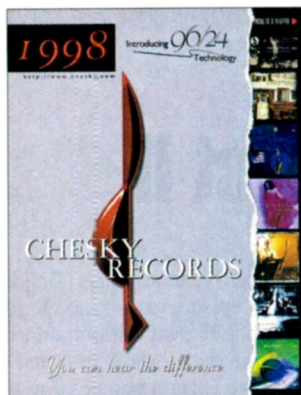
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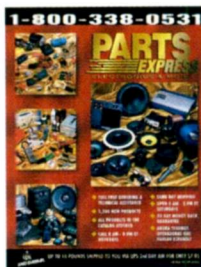
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Mobile Fidelity, Act II

I WAS FLIPPING through the B's at Tower Records the other day when I actually heard one pierced young'un ask another, "Who's Jeff Beck?" To which the second one replied, "I think he's Beck's dad or something." I hate to break this to Oprah, but Mad Cow Disease is already here, and I'm pretty sure that it's affecting everyone who's younger than me.

Readers old enough to know better will surely recall the first time they played one of Mobile Fidelity's "Original Master Recording" LPs or gold-plated CDs on their hi-fi rigs and marveled at how much better it sounded than the regular version. This year marks Mobile Fidelity's 21st anniversary, a milestone that amazes no one more than MoFi's president, Herb Belkin, whose own plan for 1998 was to retire from the business he founded in 1977 and become a half-speed master himself. But changes in the retail market and the new challenges facing audiophile reissue labels as DVD-Audio lurks on the horizon apparently changed his mind.

"I had hoped to be in full retirement," Belkin explained to me recently, "but trying to figure out a course and a direction for a company as specialized as Mobile Fidelity takes a great deal of collective thought and effort. It would have been unfair for me to walk away."

Helping MoFi keep up with the latest developments in digital and surround-sound technology is part of Belkin's reason for staying on at the company's helm. "The changes in the technology of getting from a performance to a recording of the performance have accelerated at a pace that no one could have anticipated in the early 1960s. From the introduction of the vinyl LP to the CD, there was a span of almost fifty years. But since the advent of the CD, there have been waves of technology — from MiniDisc to DAT — that have changed the direction of the recorded-music industry. Now we're looking at a plethora of forms of surround sound, from DTS to AC-3, and we've got the DVD and the audio-only version that's on the way."

Belkin's desire to refocus Mobile Fidelity on the new digital formats may stem from the company's recent and disastrous re-entry into the vinyl LP market

after a seven-year absence. Belkin described the episode as a massive failure. "To put it bluntly, we lost our shirt on the new LPs," he said. "About four and a half years ago, we spent a bundle of money to build a state-of-the-art vinyl LP pressing plant from the ground up. Unfortunately, the market didn't prove to be sufficient to support LPs again. Let me put it this way — it was a mile wide and a micron deep."

Mobile Fidelity has also had to readjust to a new retail music market that's a far cry from its salad days of selling its records mainly through independent hi-fi dealers. "Ten years ago Mobile Fidelity had four thousand retail accounts," Belkin said. "Of that, more than half were hi-fi shops that sold records on the side. But the nature of retail in the U.S. has changed, and from my point of view, and the point of view of audiophiles, it hasn't been for the better."

The retail music industry in the U.S. has changed, and for audiophiles it hasn't been for the better.

"What's happened is that the neighborhood high-end audio shop has become an endangered species. These giant merchandisers and discounters came in and blew all of the small, independent, very knowledgeable, and dedicated audio-enthusiast retailers out of the business. So we wound up, as a manufacturer and distributor, having to go to places we really never intended to sell our product — Best Buy, Circuit City, Tower Records, the same places that the major labels sell their CDs. Ten years ago, we might have sold only 25 percent of our product in places like that and 75 percent through the hi-fi shops. Today, we're probably lucky if 15 percent is sold through hi-fi dealers."

The shift to major retailers has forced Mobile Fidelity to look at new ways of getting its message of better sound to consumers. On this subject, Belkin remains pragmatic. "With the employee turnover that occurs in most of the big stores," he said, "we wind up having a dif-

ferent kind of selling environment. We don't have the really knowledgeable salesmen we used to, guys who would not only use our products for reference purposes in selling hardware but would also explain what makes an audiophile pressing different from the mainstream version. In the past, Mobile Fidelity spent millions of dollars educating retailers and salespeople about these differences through advertising, mailings, even seminars. But these days we have to go directly to consumers and educate them ourselves. For instance, we established a Web site (www.mofi.com) five years ago. We've had to be in the vanguard technologically in areas that were unknown to us seven years ago."

Hearing Belkin's excitement as he discusses Mobile Fidelity's plans to do the same number on DVD that it did on LPs and CDs, it was easy to understand the pull he feels to stay on a while longer. "We've already produced a demonstration audio-only DVD of Eddie 'Lockjaw' Davis and Harry 'Sweets' Edison that we played in our room at the Consumer Electronics Show. We're pleased with the for-

mat's progress, but we think there are some improvements that need to be made in certain areas, so we're working on this with our colleagues on the high-end audio engineering side, people like Nelson Pass, Tim de Paravicini, and Neil Sinclair and his guys at Theta. I'm hoping we'll have our first Mobile Fidelity DVDs available in May or June."

I asked Belkin how he saw Mobile Fidelity fitting into the digital future. "When we started the company, we looked on the majors as making large amounts of product available to lots of people quickly and cheaply. Mobile Fidelity has always been the antithesis of that — we make small amounts of product available to small numbers of very critical people, without regard to cost or time. People believe in us and what we do, and to the extent that we're capable of it, we're going to continue to try and find the way to make things a little better. And that's really our story." □



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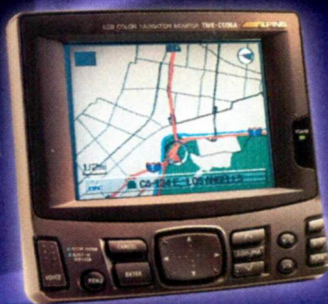
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