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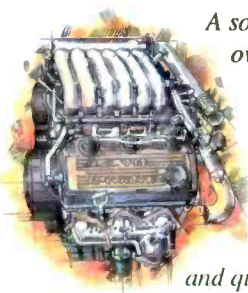


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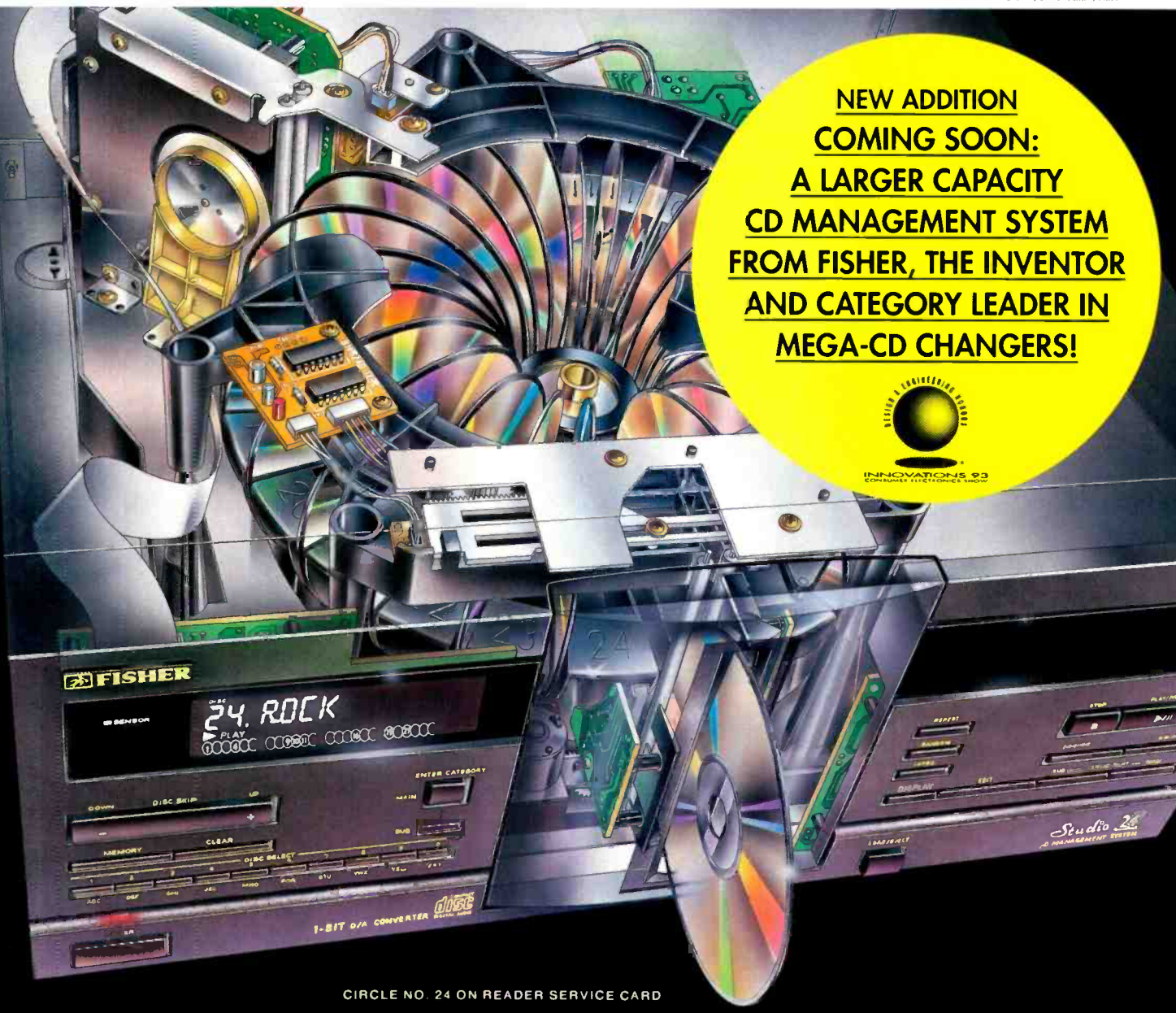
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Cover

Dynamite home theater: Mitsubishi's VS-5051 50-inch projection TV, Panasonic's LX-H670U combi-player, Yamaha's RX-V870 A/V receiver, and Polk's RM7000 speaker system. For tips on getting the most bang for your home theater buck, see page 84.

Photograph by Roberto Brosan

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Stereo Review

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JANUARY 1995

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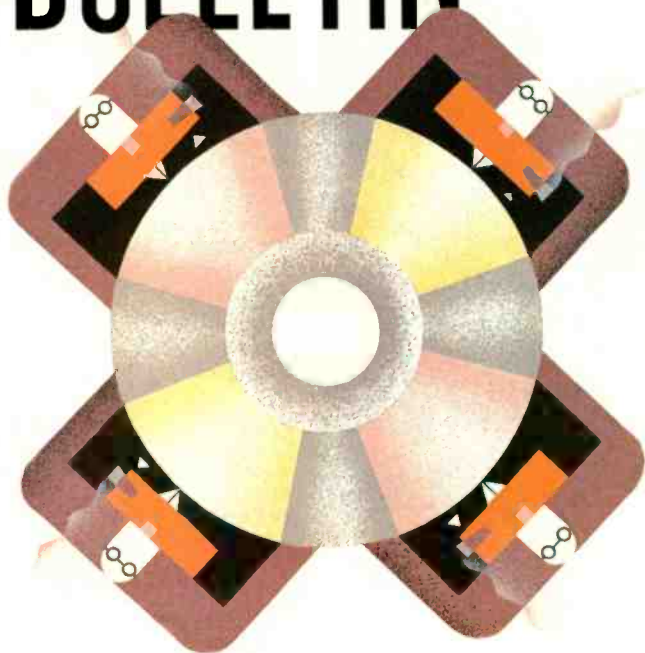
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BULLETIN

BY WILLIAM LIVINGSTONE
AND BOB ANKOSKO



HOLLYWOOD STUDIOS PROBE DIGITAL VIDEO

A group of major Hollywood movie studios have formed an "ad-hoc advisory group" to explore several competing high-density digital video disc (DVD) formats now under development in the hopes that the industry can agree on a unified technical standard and avoid a Beta vs. VHS-like format war down the road. Areas of key interest include the ability to fit a full-length movie on one CD-like disc, picture quality that is "ideally superior" to laserdisc, and compatibility with surround-sound audio and widescreen TV. Some hardware makers have said such a system could be in place in a year or so, but four to five years is more realistic. The small catalog of Video CD's now available for the Philips CD-I system require two discs for a full-length movie.

Speaking of digital video, specs for a new-generation HDTV-compatible digital VCR have been agreed upon by some fifty companies, but the system isn't expected to reach the U.S. market before early 1996—and that may depend on what happens with HDTV. The new digital VCR will be able to record 4½ hours on a cassette slightly larger than an 8mm videotape.

MUSIC NOTES

The singer/songwriter Judy Collins has been named good will ambassador for the United Nations children's organization UNICEF, a position formerly held by Audrey Hepburn. Distressed over the plight of children in bombed cities in Yugoslavia,

Collins has written *Song for Sarajevo*. . . . President Clinton has awarded the National Medal of the Arts to the singer Harry Belafonte, the jazz musician Dave Brubeck, the singer Celia Cruz, and the folk singer Pete Seeger. . . . Sony Classical has signed an agreement to

issue alternative classical recordings from the British label Arc of Light, which specializes in sacred music. . . . Scribner has published *Ella Fitzgerald: A Biography of the First Lady of Jazz* (\$23) by Stuart Nicholson.

COLOR TV TURNS 40

RCA recently commemorated the fortieth anniversary of color TV with a product display that contrasted the original boxy 15-inch color set to a prototype home-entertainment system with an in-wall 52-inch projection TV. "When color TV was introduced in 1954, only 5,000 sets were sold," noted Joseph Clayton, executive vice president of RCA parent company Thomson Consumer Electronics. "This year [1994] color TV sales will exceed 24 million."

A/V DIGEST

Goldstar has become the second company, following Panasonic, to offer a 3DO Interactive Multiplayer here in the U.S. The \$400 GPA 101M has a double-speed CD-ROM drive, which plays not only the hundred-plus 3DO titles (mostly games) but also standard CD's, Photo CD's, and, when an optional video card is installed, Video CD's. . . . Cambridge SoundWorks, the New England-based speaker manufacturer and direct marketer, has in recent months opened a dozen retail showrooms, including an 80,000-square-foot Factory SuperStore in Newton, Massachusetts, which also houses its manufacturing and warehousing facilities, and five stores in the San Francisco Bay area.

SALES RECORDS

According to the Recording Industry Association of America, Billy Joel now has eleven multi-Platinum albums, which puts him in a tie with the Beatles for the most multi-Platinum albums ever. Joel's eleven have sold

more than 51 million units in the United States, and he is the only artist to have four albums sell more than 7 million copies each. . . . The rock group Kiss has received certification of their twentieth Gold album, "Kiss Alive III" (Mercury), which places them third in the rank of groups with the most Gold albums. The Rolling Stones have 34, and the Beatles have 26.

DOROTHY'S DREAM

Folks who live in Kansas and other tornado-belt states may be pleased to learn that the Final Alert tornado detection system is now available from KBA Inc. USA. Mounted on the southwest side of a house, the \$139 palm-size device senses the "sound signature" of an approaching tornado and triggers an alarm. According to inventor Dr. Henry E. Bass, the alarm sounds when the twister is within a half-mile, providing about 90 seconds' warning. That should be enough time to get everybody, including Dorothy and Toto, into the cellar. (For more information, write to KBA Inc. USA, 256 Commerce Dr., Suite 471, Peachtree City, GA 30269; or telephone 404-487-5887.)

MUSIC ON PBS

Noteworthy musical programs on PBS in January: "From Vienna: the New Year's Celebration 1995" (January 1); Austin City Limits (January 14), featuring Vince Gill and Junior Brown; Live from Lincoln Center (January 25), with the New York Philharmonic conducted by its music director, Kurt Masur, performing Schumann's Symphony No. 3 and Dvorak's Cello Concerto with Yo-Yo Ma as soloist; and "Music of Kurt Weill: September Songs" (also January 25) with Teresa Stratas, Elvis Costello, Lou Reed, Betty Carter, Nick Cave, David Johansen, the Persuasions, P.J. Harvey, and William S. Burroughs. □



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LETTERS

Carver Lightstar Amplifier

I am disturbed by the gushing review of the Carver Research Lightstar power amplifier in your November 1994 issue and feel a more balanced view is in order.

First, this design is not revolutionary. Amplifiers with variable power-supply voltages have existed for years, most notably Soundcraftsmen's Class H amps. The Carver amplifier differs in that it uses a switching power supply, but these are not new and are found in virtually all high-power car stereo amplifiers. The new Soundstream DA-2 is a similar design for home use.

Second, the statement that the Lightstar "is a virtually ideal voltage source . . ." is extremely misleading. The Lightstar is no more ideal than any other amplifier until the load levels are high, as a plot of its damping factor versus frequency will show.

Third, Michael Riggs's statement (in "The Lightstar Advantage") that the amplifier "actually recycles [speaker return current] into the power supply" is also misleading. That is true of any voltage amplifier. Carver's white paper claims only that the Lightstar allows "reactive currents to circulate freely . . ." meaning that the output stage does not exhibit limiting characteristics. Any design is a result of compromise, and you should point out these compromises, however small they may appear, especially for a product that costs \$3,500.

The Lightstar does have several virtues. Its variable power supply is extremely powerful, which results in a robust output stage with fewer transistors and higher efficiency than in a conventional design. The overall quality of the amplifier appears to be excellent. Carver is to be congratulated on bringing this competent design to market.

JEFFREY ROSE

Principal Engineer, Coulter Corporation
Hialeah, FL

Although neither switching power supplies nor multiple-voltage power supplies are new, a power supply that continuously tracks the signal voltage is new, at least to the best of our knowledge—we've never seen nor heard of one before. As for the Lightstar being an ideal voltage source only at high load levels, it depends on what you mean by a high load level. In our tests, the Lightstar delivered a straight-line increase in output, doubling the power with each halving of the load impedance, all the way down to 2 ohms. So at least to that point—and perhaps below, since we stopped testing at 2 ohms—it behaved as an essentially perfect voltage source. Such performance is both remarkable and unprecedented in our experience. We agree that we might

have done a better job of explaining the amplifier's handling of return currents.

Beau Hunks Fill the Gaps

Partly on Steve Simels's recommendation ("Buckwheat Sings!" in November), I bought "The Beau Hunks Play the Original Little Rascals Music," new recordings of the Roy Shields tunes from the famous comedy shorts. The CD is absolutely terrific and transcends nostalgia. But it also has a singular practical merit for those of us who enjoy making cassette recordings and hate having to leave the last minute or so of a tape blank because of the scarcity of appropriately brief pieces of music to plug up the hole. The Beau Hunks CD contains fifty tracks, all but five of which are shorter than 2 minutes long—sometimes a lot shorter (*Slouching* clocks in at 34 seconds, *Your Piktur* at 28 seconds, and *Laugh* at 4 seconds). And this music's puckishness is a bracing aural palate-cleaver after 45 minutes or so of Shostakovich, Elvis Costello, or the Benedictine Monks. DAVID ENGLISH
Somerville, MA

Nanci Griffith

As a faithful reader of STEREO REVIEW, I was surprised by the lambasting Alanna Nash gave to Nanci Griffith's new album, "Flyer," in November. Having listened to it several times, I would rate it, along with Lyle Lovett's "I Love Everybody," among the year's best releases. I was thinking that perhaps the review was a misprint until I read Ms. Nash's glowing praise (in her review of "Red Hot + Country") of Brooks and Dunn's treacly, insipid remake of Johnny Cash's classic *Folsom Prison Blues*. I hope this doesn't mean you guys are following the path of mediocrity taken by much of "new" country music.

CHARLES BESKO

Vancouver, British Columbia

Cataloging by Computer

I appreciated Chris Albertson's "Peripherals" column (November) on cataloging recordings by computer. I'm a slave to my databases, cataloging everything from the cigars in my humidors (too many) to the miles I run everyday (not enough). Anal-retentive person that I am, I was especially interested in Tom Hyde's "A Box of Rain" template for FileMaker Pro.

Unfortunately, the only contact for Mr. Hyde was on AOL. Long-distance connect time, cross-border surcharges, and a moribund Canadian dollar put online services

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beyond my budget. Could you possibly print Mr. Hyde's address for those of us not surfing the net? MATTHEW MACKAY
Summerside, Prince Edward Island

You can write to Tom Hyde at 1813 7th Ave. SE, Olympia, WA 98501.

In November "Peripherals," Chris Albertson discussed several programs for cataloging music recordings by computer, including my own DiscTrak System. I am honored that he mentioned my software, but the information given for obtaining it is out of date. The correct address is Blam Entertainment Group, 2606 Soapstone Dr., Reston, VA 22091; my BBS telephone number is 703-716-0915. I am not associated with the *LaserDisc Gazette*—I just run a classified ad in it. BLAINE R. YOUNG
Reston, VA

More Iain Matthews

Thanks for Alanna Nash's excellent review of Iain Matthews's latest CD, "The Dark Side," in October "Best Recordings of the Month." One correction: "Skeleton Keys" (1993) was not his first solo release in more than a decade. In 1988 he released "Walking a Changing Line," a wonderful compilation of Jules Shear songs on Windham Hill, and in 1990 another fine effort,

"Pure and Crooked," came out on the Gold Castle label.

STEVE RAPPAPORT
Washington, DC

Home Theater Construction

I enjoyed Daniel Kumin's "Home Theater: Going for Separates" in November. Within the next year I hope to build a new home. Where can I find information about incorporating a home theater into the construction? I am interested mainly in suggestions about the ideal location in relation to other rooms, the best ceiling, floor, and wall materials, the size, the best acoustical plan, and so on.

DAN WOODARD
Jackson, TN

A good source of information on such subjects is F. Alton Everest's Master Handbook of Acoustics.

Parasound Power Amp

Julian Hirsch's enthusiastic review of our Parasound HCA-1206 power amplifier in November overlooked some of its extraordinary abilities. For example, although the Home THX standard for six-channel amplifiers permits compliance-verification testing for its stringent power-output vs. load vs. distortion requirements with only three of the amp's channels driven, we de-

signed the HCA-1206 to far exceed its rated power with *all six channels* driven at once.

Prolonged high-level listening to the HCA-1206 is unlikely to create excessive temperatures. Its temperature-controlled bias circuits and massive extruded heat sinks insure continuous operation under virtually any condition you could imagine (as long as the amplifier is not deprived of ventilation). Owing to the high bias current applied to its twenty-four output transistors, the HCA-1206 actually tends to run about as warm at idle as at typically high listening levels, with the proven benefit of reducing higher-order harmonic distortion.

We did not make Channels 1 and 2 bridgeable only so that we could provide the convenience of switched internal looping. Bridged or not, Channels 3 and 4 and Channels 5 and 6 are equally suitable for reproducing the left and right front channels of a fine home theater or audiophile music system.

RICHARD SCHRAM
President, Parasound Products
San Francisco, CA

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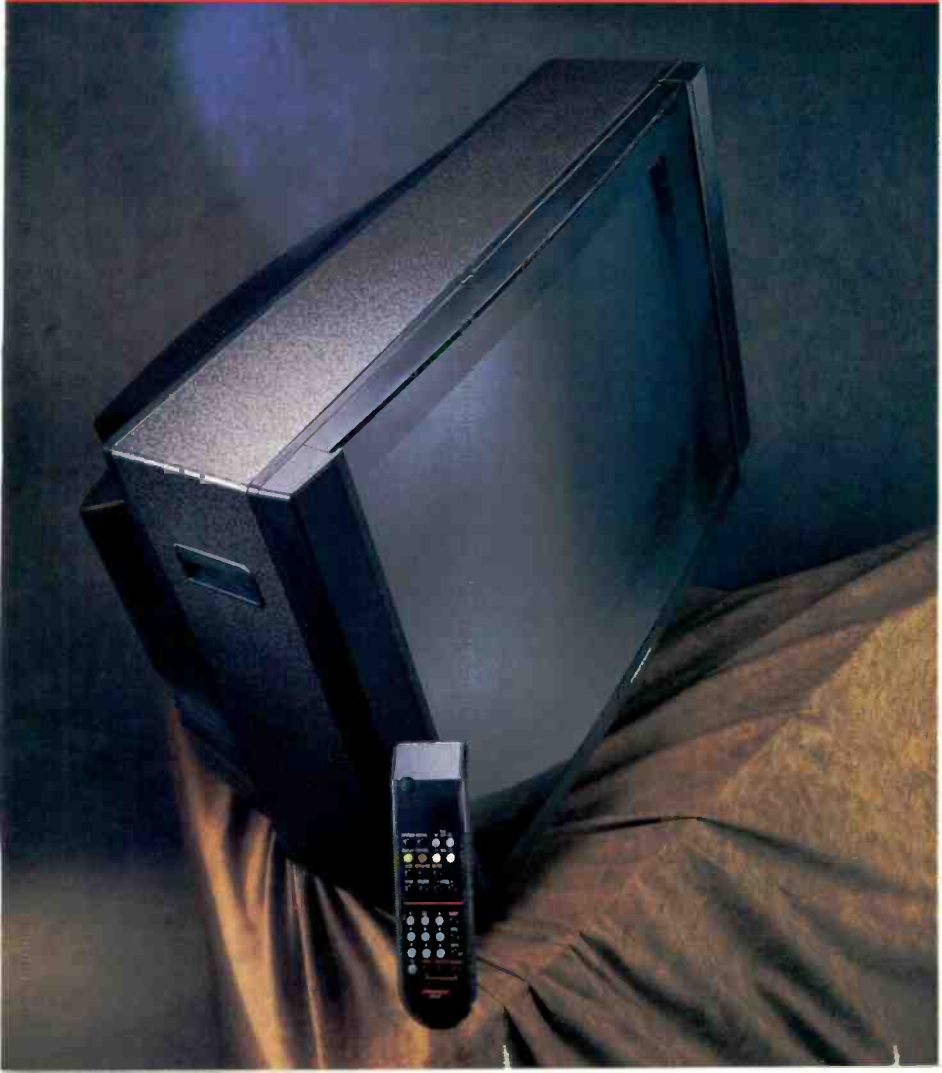
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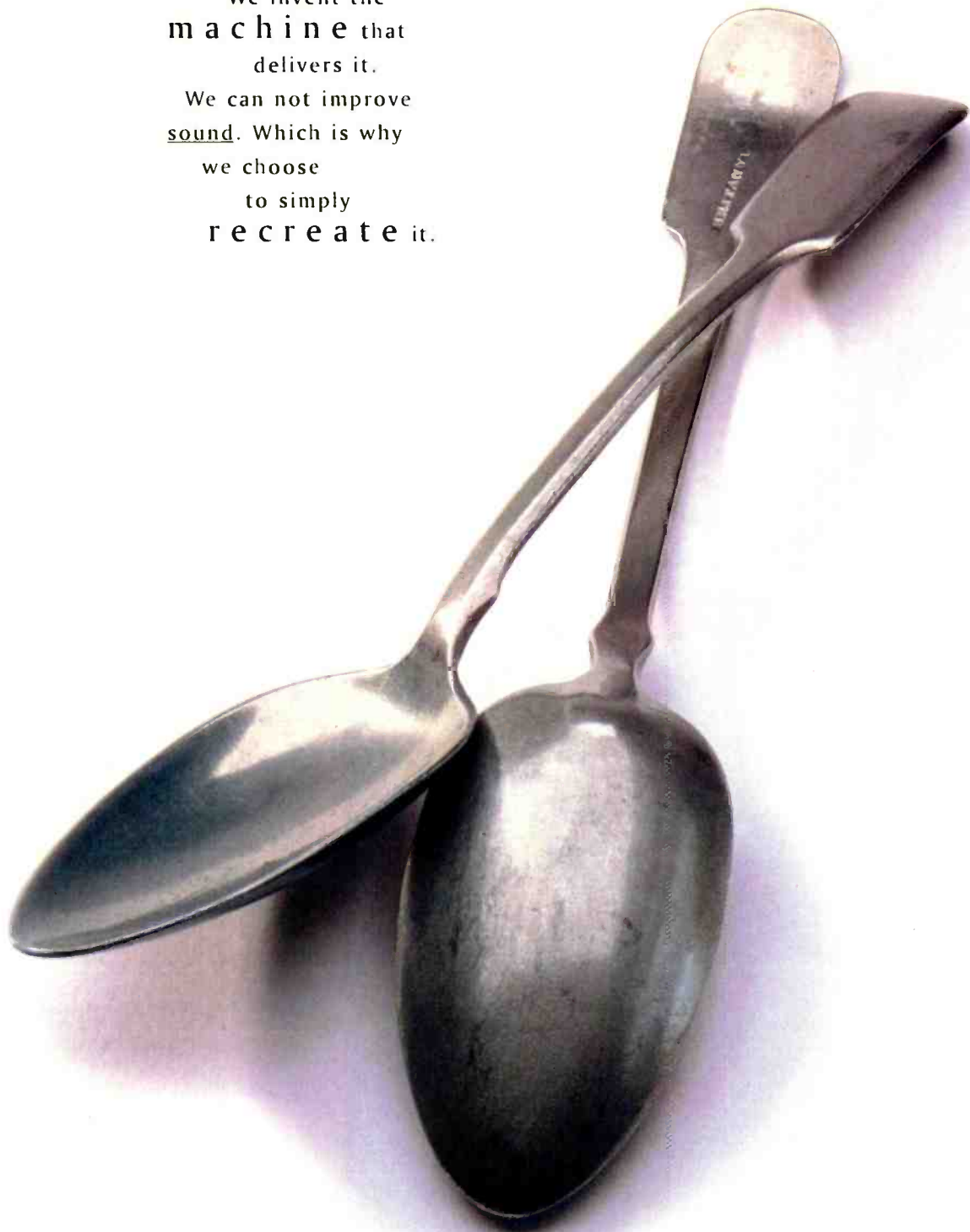
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NEW PRODUCTS

▼ ACURUS BY MONDIAL

The Dolby Pro Logic decoder in the ACT I surround processor from Acurus features a theater mode with "advanced steering" that is said to improve separation by 10 dB compared with "most other processors." It has three audio inputs, three video inputs,

a tape loop, stereo mode for music, a subwoofer output, a menu-driven on-screen display, and a remote control. Price: \$899.

Acurus by Mondial Designs, Dept. SR, 20 Livingstone Ave., Dobbs Ferry, NY 10522.

• Circle 120 on reader service card



▼ N.E.A.R.

The N.E.A.R. (New England Audio Resource) home theater speaker lineup includes the two-way, 4-foot-tall Mast, with piano-black top and base (\$1,199 a pair); the two-way, magnetically shielded JIB center speaker, in black woodgrain (\$499); and the Boom-

4 subwoofer, with four 8-inch drivers in a 26 x 38 x 23-inch cabinet finished in cherry (shown, \$2,799) or black (\$1,599). The subwoofer is rated down to 17 Hz. N.E.A.R., Dept. SR, 12 Foss Rd., Lewiston, ME 04240.

• Circle 122 on reader service card



▲ BOSTON ACOUSTICS

Boston Acoustics' VRS surround speaker, part of the Lynnfield VR home theater line, is a dipole speaker with a 4½-inch woofer and two tweeters that fire in opposite directions to create a diffuse soundfield. Available in black or white, the 4½ x 10¾ x

6-inch speaker can be mounted on a wall or ceiling using supplied hardware. Bandwidth is given as 125 Hz to 20 kHz. Price: \$350 a pair. Boston Acoustics, Dept. SR, 70 Broadway, Lynnfield, MA 01940.

• Circle 121 on reader service card



▲ CARVER

Designed for home theater and multiroom applications, Carver's THX-certified AV-806x power amplifier is rated to deliver 133 watts into 8 ohms in each of six channels. Any two channels can be bridged to deliver 360 watts. Features include a dual-transformer power supply, heavy-duty binding posts, and circuitry that protects the amp against

short circuits, DC offset, and overheating. Distortion is given as no more than 0.03 percent at rated power, signal-to-noise ratio as 115 dB (A-weighted at rated power), and dynamic headroom as 1.2 dB. The rack handles are removable. Price: \$1,750. Carver, Dept. SR, P.O. Box 1237, Lynnwood, WA 98046.

• Circle 123 on reader service card

NEW PRODUCTS

▼ NAD

NAD's Model 513 CD changer sports a three-disc carousel in a pull-out drawer that enables two discs to be changed while the third is playing. Features include all-disc random play, thirty-two-track programming, a tape-edit mode that sequences

the tracks on a disc to fit as many as possible on a tape side, and a remote control with a numeric keypad. Price: \$399. NAD, Dept. SR, 633 Granite Ct., Pickering, Ontario, Canada L1W 3K1.

• Circle 124 on reader service card



▲ CERWIN-VEGA

Cerwin-Vega's Sensurround System 6 home theater lineup comprises four 9 1/4-inch-tall HT-S5 two-way speakers (\$330 a pair), the magnetically shielded HT-SMC center speaker (\$165), and the HT-10D subwoofer

(\$330), featuring a 10-inch dual-voice-coil driver and a low-frequency limit of 38 Hz. All are finished in black vinyl. Cerwin-Vega, Dept. SR, 555 E. Easy St., Simi Valley, CA 93065.

• Circle 125 on reader service card

◀ ADVENT

Each of the two pivoting, molded-plastic enclosures in Advent's 11 1/2-inch-tall HT204 surround speaker houses a 2 1/4-inch driver. Power handling is rated as 100 watts. Price: \$149 a pair. Advent, Dept. SR, 25 Tri-State Int'l Office Center, Suite 400, Lincolnshire, IL 60069.

• Circle 126 on reader service card



▲ SONY

Sony's DTC-2000ES four-head DAT recorder incorporates the company's Super Bit Mapping encoding system, which is said to produce recordings with "lower noise and distortion." The deck features four motors, a subcode-management system for creating tape ID's, a remote control with a keypad for track selection, and six inputs, including one coaxial and two optical. Price: \$2,500. Sony, Dept. SR, 1 Sony Dr., Park Ridge, NJ 07656.



▲ SHERWOOD

Sherwood's XC-6725D car CD receiver features a detachable faceplate with infrared contact points, which are said to be more reliable than metal contacts. It offers sixteen-track programming,

twenty-four AM/FM presets, and an amp that delivers 14 watts per channel. Price: \$385. Sherwood, Dept. SR, 14830 Alondra Blvd., La Mirada, CA 90638.

• Circle 127 on reader service card

N E W

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NEW PRODUCTS

▼ BAG END

The ELF-M extended-low-frequency “integrator” from Bag End, shown with the company’s D10E-S subwoofer (\$568), is a low-cost version of the ELF-1 used in pro systems. The ELF-M, said to extend the response of any

subwoofer down to 18 Hz, also serves as a 130-Hz crossover. Price: \$816 (with power supply). Bag End Loudspeaker Systems, Dept. SR, P.O. Box 488, Barrington, IL 60011.

• Circle 128 on reader service card



▼ ACOUSTIC RESEARCH

Part of the newly redesigned Acoustic Research line, the AR 338 bookshelf speaker combines an 8-inch woofer, a midrange driver, and a tweeter in a 19-inch-tall cabinet finished in black

(shown) or cherry woodgrain vinyl. Low-frequency limit is 55 Hz. Price: \$650 a pair. Acoustic Research, Dept. SR, 535 Getty Court, Blvd. A, Benecia, CA 94510.

• Circle 130 on reader service card

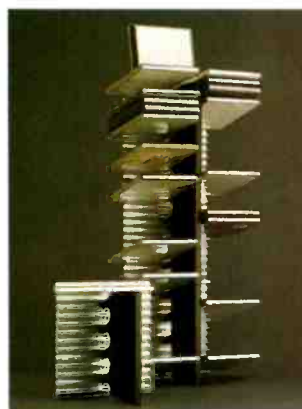


▲ SOUNDSTREAM

Soundstream’s Monoblock Series of THX-certified amplifiers is based around the single-channel M1 module (top, \$399), rated to deliver 120 watts into 8 ohms or 200 watts into 4 ohms with less than 0.1 percent distortion. The

M2 (middle, \$799) teams two M1’s behind a 17-inch-wide faceplate, and the M3 (bottom, \$1,199) combines three modules. Soundstream, Dept. SR, 120 Blue Ravine Rd., Folsom, CA 95630.

• Circle 129 on reader service card



◀ MFORM

The Rooster CD storage system from MFORM is made up of interlocking modules (three are stacked in photo), each of which holds twenty-four single CD’s or twelve doubles. The aluminum modules can be wall-mounted and have a “current play” slot on top. Price: \$38 per module.

MFORM, Dept. SR, P.O. Box 31334, Seattle, WA 98103-1334.

• Circle 131 on reader service card

▼ ARCAM

Arcam’s British-made Alpha One CD player uses a Burr Brown 16-bit digital-to-analog conversion system with fourth-order noise shaping, which is said to produce low noise and excellent linearity. Features include

twenty-one-track programming, a coaxial digital output, and a remote control. Price: \$599. Arcam, distributed by Audio Influx Corp., Dept. SR, P.O. Box 381, Highland Lakes, NJ 07422-0381.

• Circle 132 on reader service card



N E W

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Before attempting the operation of the Lifestyle® 12 home theater system, the following instructions should be carefully reviewed and memorized.

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(Not shown, because you won't see it in your home, either.) However, there is

one last instruction you should follow. Hold onto your seat – after all, the sound is from Bose.

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▶ DIMENSION STORAGE

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• Circle 133 on reader service card



▲ MIRAGE

Mirage's 10½-inch-tall MBS bipolar speaker uses front- and rear-firing driver pairs (4½-inch woofer, ½-inch tweeter) to achieve "a spacious yet focused soundfield" in a home theater or music system. The magnetically shielded speaker is finished in high-gloss black (shown) or satin white. The low-frequency limit is given as 120 Hz. Price: \$350 a pair. Mirage, Dept. SR, 3641 McNicoll Ave., Scarborough, Ontario M1X 1G5.

• Circle 134 on reader service card



▲ SKIPFIX

Clearfix's SkipFix CD repair kit contains two foam applicators, four cloths, and enough cleaning solution and patented Skip & Scratch Remover to treat forty

CD's. Price: \$19.99 (plus \$3.50 shipping) from Clearfix, Dept. SR, P.O. Box 806, Salt Lake City, UT 84110; 1-800-922-3472.

• Circle 135 on reader service card

▼ CELESTION

The Prostyle KR1 speaker from Celestion combines a 5¼-inch woofer and a coaxially mounted 1-inch polymer-dome tweeter in a vented enclosure that measures only 6¾ x 8½ x 7 inches. The textured gray molded-plastic cabinet, which



has a metal-mesh grille, is said to be extremely durable; it is compatible with OmniMount Series 25 wall-mounting brackets and hardware. Bandwidth is given as 90 Hz to 20 kHz, sensitivity as 90 dB, and power-handling capability as 75 watts. Price: \$279 a pair. Celestion Industries, Dept. SR, 89 Doug Brown Way, Holliston, MA 01746.

• Circle 137 on reader service card



◀ NILES

For multiroom systems: The Niles SI-1200 power amplifier boasts twelve channels, each rated to deliver 25 watts continuous into 8 ohms. Each of its six adjacent-channel pairs can be bridged to deliver 50 watts. A BusMatrix selector makes it possible to assign each channel to a common left, right, or mono signal bus or to its own dedicated signal input. Price: \$800. Niles, Dept. SR, 12331 SW 130th St., Miami, FL 33186.

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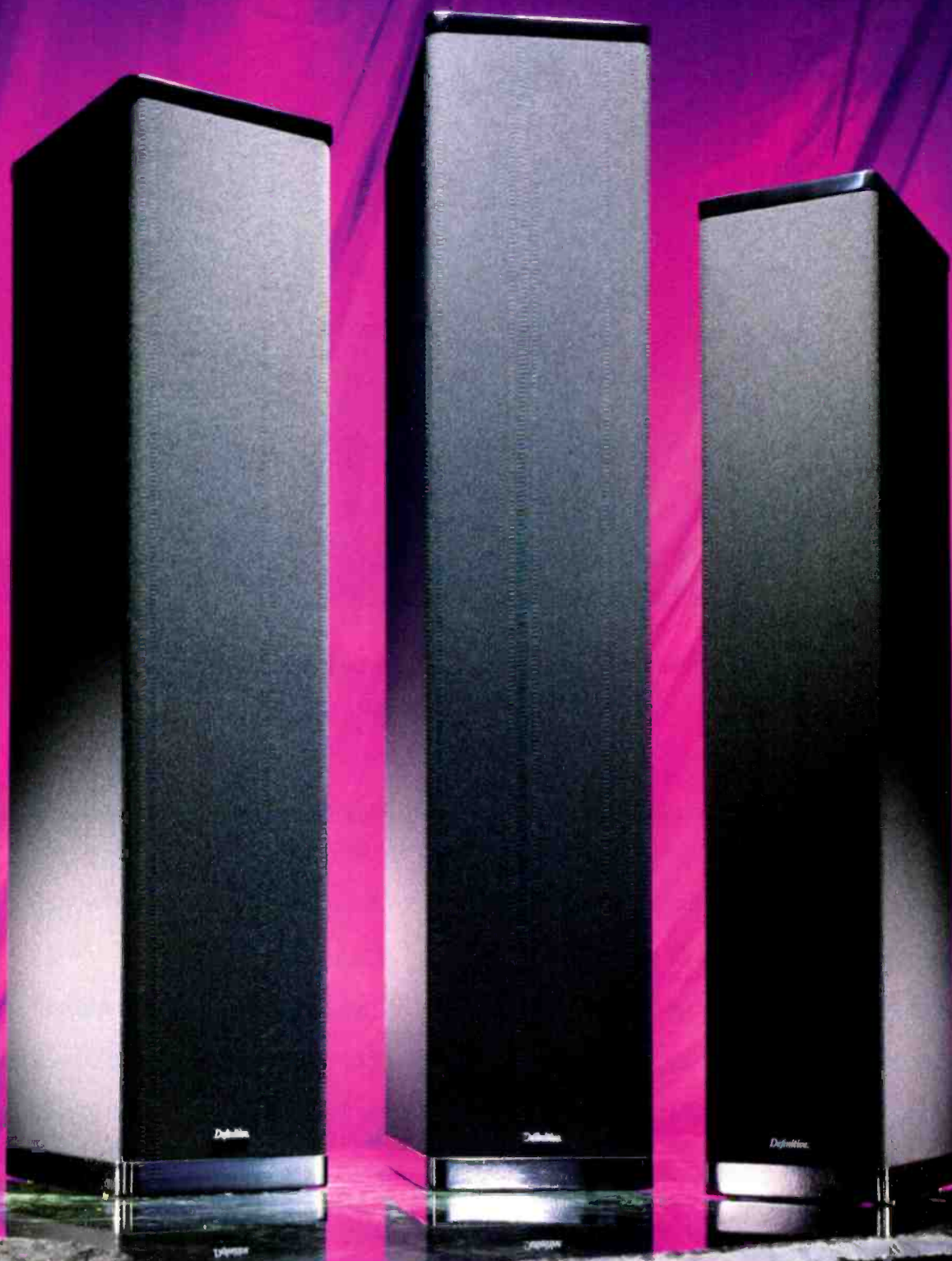
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AUDIO Q & A

BY IAN G. MASTERS

Mismatched Sensitivities

Q I am interested in adding surround sound to my stereo system. My main speakers are very large and have a high sensitivity rating. I know that ideally the center speaker should be the same as the other front speakers, but in my case adding another large speaker would be impractical. How do I go about choosing a center speaker, since the sensitivity of the main units is so high? My system includes a graphic equalizer; would I be able to use that to match the mains to the center?

ANDREW J. ONDREJKA
Reno, NV

A Sensitivity is more or less irrelevant in this case. As long as you can get sufficient output from the center-channel speaker—a matter mostly of amplifier power—you should have no problem matching its level to that of the main speakers. If necessary, just turn down the mains. What does matter is that the three front speakers match in tonal quality, and that can be difficult to achieve. The first thing to do is to check with the manufacturer of your main speakers to see if a center speaker with similar tonal qualities is available. These days most major companies sell center speakers designed to complement the conventional speakers they sell.

If you must go with a different brand of center speaker, equalization can be used to adjust its tonal character so that it more closely resembles that of the main speakers, and some surround processors even have built-in center-channel equalizers. But there has to be a reasonable match to begin with; an equalizer can do only so much.

As for using your equalizer to match the main speakers to the center speaker, that would certainly be possible. But the fact that you now equalize your main speakers suggests that you prefer the altered response to their "straight" response, which means you'd have to sacrifice that preference in order to match the center.

Ungrounded Concerns

Q The electrical outlets in my forty-year-old house are not grounded. What, if any, concerns should I have? Would the installation of a surge protector remove such concerns?

MICHAEL WATCHERN
Lakewood, CA

A Trust me, a house built forty years ago does have grounded outlets unless the electrician who wired it was a criminal. But it probably doesn't have the modern sort of three-prong plug that is obviously

grounded; instead, one side of the electrical circuit is grounded, and the boxes holding every plug and switch are independently wired to ground as well. To ground a piece of equipment, it's usually only necessary to run a wire from somewhere on its chassis to the small bolt that holds the outlet cover in place. Even better, but often impractical, is to run a wire from your gear to a cold-water pipe (but never a gas pipe). Surge protectors can be useful, but they have nothing to do with grounding.

Receiver Shutdown

Q My receiver puts out 60 watts a channel in stereo mode. Sometimes when the volume is turned way up, the sound will cut out for a few seconds. When it comes back on, the right channel reappears first, then the left channel joins in. Turning the volume down cures the problem. Is the receiver overheating?

STEVEN J. STRIEFFLER
Willingboro, NJ

A Probably not . . . yet. But the protection circuits are operating, and they're trying to tell you to turn down the level or buy a more powerful amplifier. Your speakers may be at risk of damage if this happens more than occasionally.

Video CD or CDV?

Q When I was stationed in Japan several years ago I bought a few CDV discs that each contained one music video and four to six audio selections. They could be played back on a laserdisc machine. For the past few months, I've been reading about something called "Video CD." Is it the same thing?

SAM HOUSTON
Victorville, CA

A No. The CDV (CD Video) format, introduced in the mid-Eighties primarily as a vehicle for music videos, was simply a miniature laserdisc capable of storing digital audio and a limited amount of analog video (promoters of the format pushed to have the CDV designation apply to all optical audio/video media, including laserdiscs, but it never caught on). No one was interested in the format, and it quickly disappeared.

Video CD, a new format that's generating considerable fanfare in Japan (primarily for karaoke) and a smidgen of interest here (as a movie format), is something quite different. Digital compression techniques are used to cram 74 minutes of roughly VHS-quality video onto a CD along with a digital audio soundtrack. So far in this country, only a few dozen Video CD movies have been

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- GA- Merit TV; Columbus; Music Audio; Atlanta; Stereo Connections; Valdosta; Stereo Shop; Martinez; Stereo Video Systems; Marietta; Honolulu.
- IA- Audio Video Logic; Des Moines; Camera Corner; Davenport; Hawkeye; Iowa City, Cedar Falls.
- ID- Good Ear; Boise.
- IL- United Audio Centers; Chicago & Suburbs; Camera Corner; Bloomington; Cars & Stereos; Rockford; Jon's Home Center; Quincy; Sound Forum; Crystal Lake; Select Sound; Naperville; Sundown AV; Springfield.
- IN- Ovation Audio; Clarksville, Indianapolis.
- KS- Accent Sound; Overland Park; Advance Audio; Wichita; Audio Junction; Junction City.
- KY- Ovation Audio; Lexington, Louisville.
- LA- Alterman Audio; New Orleans, Metairie, Covington; Music Plus; Baton Rouge; Wright's Sound Gallery; Shreveport.
- MA- Goodwins Audio; Boston, Shrewsbury; Nantucket Sound; Hyannis; Sound Playground; Springfield.
- MD- Audio Buys; Annapolis; Gaithersburg; Laurel, Rockville, Walkers; Cumber and Elec.; Cumberland; Gramophone; Baltimore; Elkott City; Soundscape; Baltimore.
- ME- Cokin; Portland.
- MI- Pecar's; Detroit; Troy; Classical Jazz; Holland; Classic Stereo; Kalamazoo, Grand Rapids; Front Row AV; Flint; Future Sound; Ypsilanti; Court St. Listening Room; Midland, Saginaw.
- MN- Audio Designs; Winona; Audio Perfection; Minneapolis.
- MO- Independence AV; Independence; Sd. Central; St. Louis.
- MS- McLelland TV; Hattiesburg; Playars AV; Ridgeland.
- MT- Rocky Mountain Hi Fi; Great Falls.
- NC- Audio Video Systems; Charlotte; Stereo Sound; Durham, Greensboro, Raleigh, Winston Salem; Audio Lab; Wilmington; Tri City Elect.; Covover.
- NE- Custom Electronics; Omaha, Lincoln.
- NB- Cookin'; Nashua, Manchester, Newington, Salem, S. Nashua.
- NJ- Hi-Fi Stereo; Trenton; Monmouth Stereo; Monmouth, Wall; Sound Waves; Northfield; SoundWorks; Cherry Hill; Woodbridge Stereo; W. Caldwell, Woodbridge.
- NM- Sound Ideas; Albuquerque.
- NV- Upper Ear; Las Vegas.
- NY- Audio Breakthroughs; Manhasset; Audio Den; Lake Grove; Audio Expressions; Newburgh; Audio Junction; Watertown; Clark Music; Albany, Syracuse; Stereo Exchange; Manhattan, Nanuet; Hart Elect.; Vestal; Innovative Audio; Brooklyn; Listening Room; Scarsdale; Rowe Camera; Rochester; Sound Mill; Mt. Kisco, Yorktown Hts.; Speaker Shop; Amherst, Buffalo; Stellar Stereo; Ithaca.
- OK- Contemporary Sounds; Oklahoma City; K Labs Premium Audio; Tulsa.
- OH- Audio Craft; Akron, Cleveland, Mayfield Hts., Westlake; Audio Etc.; Dayton; Paragon Sound; Toledo.
- OR- Bradford's Hi-Fi; Eugene; Chelsea AV; Portland, Beaverton; Kelly's Home Ctr.; Salem; Larson's; Medford, Roseburg; Stereo Planet; Bend.
- PA- Gerry's Elect.; State College; GNT Stereo; Lancaster; Hart Elect.; Blakely; Kingstown; Hi Fi House; Abington; Broomall; Palmer Audio; Allentown; Stereoland; Natrona Heights; (Pittsburgh); Studio One; Erie.
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- TX- Home Entertainment; Dallas, Houston; Audio Tech; Temple, Waco; Audio Video; College Station; Brock AV; Beaumont; Bunkley's Sd. Systems; Abilene; Bjorn's; San Antonio; High Fidelity; Austin; Krystal Klear; Dallas; Marvin Electronics; Ft. Worth; Sd. Box; San Angelo; Sd. Quest; El Paso; Sd. Systems; Amarillo; Sd. Towne; Texarkana.
- UT- Alpine Elect.; Provo; AudioWorks; Salt Lake City; Stokes Bros.; Ogden.
- VA- Audio Buys; Arlington, Fairfax, Falls Church, Manassas; Audio Connection; Virginia Beach; Audiotechnics; Roanoke; Home Media Store; Richmond; Stereotypes; Charlottesville.
- VT- Audio Video Authority; S. Burlington.
- WA- Definitive Audio; Bellevue; Seattle; Evergreen Audio; Silverdale; Pacific St. & Sd.; Wenatchee; Tin Ear; Kennewick.
- W.VA- Sound Post; Princeton.
- WI- Audio Emporium; Milwaukee; Absolute Sound & Vision; Sheboygan; Sound World; Wausau.
- Puerto Rico- Precision Audio; Rio Piedras.
- Canada- A & B Sound; Calgary, Edmonton, Kelowna, Vancouver & Suburbs, Victoria; Advance Electronics; Winnipeg; Audio Ctr.; Montreal, Ottawa; Bay Bloor Radio; Toronto; CO-RA; Quebec City; Digital Dynamics; Clearbrook; Great West Audio; London; Lipton's; New Market Ontario; Peak Audio; Halifax; Sd. Room; Vancouver; Sd. Station; Courtenay; Stereo and Windsor.
- Mexico- Contact Grupo Volumen; Mexico City.

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AUDIO Q & A

made available, primarily through Philips Media for playback on CD-I (CD-Interactive) machines. Meanwhile, a number of companies are working on a next-generation Video CD system that would be able to hold a feature-length movie on one disc instead of two, as is required by the current system.

Disappearing Stereo

Q I have just subscribed to a cable movie channel that broadcasts in stereo. I have the cable box going through my stereo VCR and then to my stereo TV. On some of the movies the separation is very good, but the instant I turn on my VCR, the audio goes to mono. What can I do to record these programs in stereo? **JERRY BLANKENSHIP**
Bastrop, LA

A I assume the connection between your VCR and TV is a 75-ohm cable feeding the TV's antenna inputs. When your VCR is switched off, the output of the cable box is fed directly to the TV tuner, and the set's stereo circuits decode the audio. When you turn on the VCR, its tuner takes over and remodulates the signal before sending it to your TV. The RF modulators in VCR's, even stereo models, are *mono*, so anything the VCR itself sends out via the cable to the antenna input will be mono.

If your TV has direct video and stereo audio inputs and you have a stereo VCR with corresponding outputs, use them instead and the problem will go away.

Gurgly Recording

Q I have a number of old open-reel recordings that I want to transfer to cassette. My open-reel deck only has a tape-head output, and there is no corresponding input on my receiver, so I connected it to the magnetic-phono input. When I play the tapes they sound fine, but when I copy them onto cassette, using my recently purchased cassette deck, the recording sounds "gurgly." I have had the equipment checked and have switched the receiver and speakers with no improvement. What's going on? **SAL SAIYA**
Cape Coral, FL

A Without a specific tape-head input (and I haven't seen a receiver or amplifier with one in decades), connecting your deck to the phono input is about all you can do, but it's far from ideal. LP's and open-reel tape recordings were both recorded with equalization to overcome the limitations of the formats, and the playback equipment applied the inverse EQ to flatten out the response. But the particulars of the equalization were different, so using a phono input to play a tape recorded with the standard NAB curve that was used for open-reel tapes will result in nonlinearities. Specifically,

ly, the RIAA phono curve incorporates a much greater bass boost than the tape curve, so you will end up with far more low-frequency energy than was intended.

The reason the recordings sound "fine" when you play them through your system probably has to do with the bass response of your speakers and the way the tone controls on your receiver are set. But when you feed that bass-heavy signal to your cassette deck, it is probably causing tape saturation. The offending frequencies may be too low to hear directly, but they are still disrupting the recording and causing the "gurgly" sound you describe. Using an equalizer before the cassette deck's inputs to cut the bass should cure the problem, but you'll have to experiment to get it sounding right.

Dubbing Eight-Tracks

Q I have some eight-track tapes that are pretty rare and are not likely to be reissued on CD or cassette. I don't have an eight-track player, but I would like to dub the tapes to cassette. Is there any service that would do it for me? **LARRY RAGONESE**
Morris Plains, NJ

A You may find a recording outfit that still has the equipment to do what you want. Check the Yellow Pages and phone around. A cheaper alternative would be to pick up an old player—I've seen piles of them at flea markets and yard sales, and they tend to go cheap. An inexpensive 12-volt DC power supply from Radio Shack, or even a couple of 6-volt lantern batteries wired in series, will drive the unit, which need survive only long enough for you to make the dubs. You may have to try a couple of players before you find one with decent sound, but that's still probably cheaper than having it done professionally.

Full-Force Listening

Q I don't really enjoy listening to my stereo system unless it's playing at full force. My new receiver puts out 125 watts per channel and my speakers are rated for 175 watts rms. Would it be safe to turn the stereo up full blast even with a dynamic source such as a CD? If so, how long would it be okay to do this? **JOHN LAVERDURE**
Oakland, MD

A If you're talking about cranking the volume control all the way to the top and throwing on a Metallica CD, I suspect you would quickly ruin your speakers, your ears, and your friendship with a neighbor or two. The "blast" in that sort of "full blast" is likely to be double-digit distortion as you drive the amplifier way beyond its capabilities (a phenomenon called "clipping").

Still, lots of equipment is designed to be

played loud, and yours is probably in that category as long as the speakers can really handle 175 watts *continuously* (speaker power-handling specs are notoriously wishy-washy, and often meaningless). I suggest raising the volume to a comfortably loud level (for you) and then gradually edging it up bit by bit. When the sound begins to seem ragged (or more ragged than it's supposed to), or the amplifier gets uncomfortably hot, you've gone too far.

Narrow TV Stereo

Q Several years ago I purchased a 13-inch television that's supposed to be stereo. But when the indicator light goes on, indicating a program is being broadcast in stereo, it still sounds like mono. Is that because the set is so small or might there be another reason? **BEN DOSTI**
Represa, CA

A The TV's small size may indeed be the problem, provided its audio circuitry is actually stereo. The speakers are so close to one another that it would be extremely difficult to perceive stereo separation—unless you sat directly in front of the screen. If the set has a stereo headphone output, plug in a set of phones and listen—you should be able to tell fairly quickly what the circuitry is doing. It's possible that the TV simply has a low-quality stereo circuit.

Transparent Discs

Q I have noticed that if you hold some CD's up to the light you can see through them. I thought perhaps that the laser read the reflective parts and not the transparent parts, but the outer edges of some discs, where no information is stored, are transparent too. Does the laser in fact pass through the disc? And what effect do all the stray rays bouncing around inside the player have? **KEVIN GARLICK**
Plainville, CT

A The image of a laser blasting a hole through an inch-thick chunk of steel is a familiar one, but rest assured that if there are indeed "rays" ricocheting about in your CD player, they'll do no harm. If they do pass through a disc, it's incidental; it's the direct reflection that counts, and as long as enough of the beam is reflected, that's fine. There's no particular virtue in a disc's opacity, so some CD manufacturers plate less metal on the data surface than others.

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.

Definitive's C/L/R 1000 Wins Center Channel of the Year Award

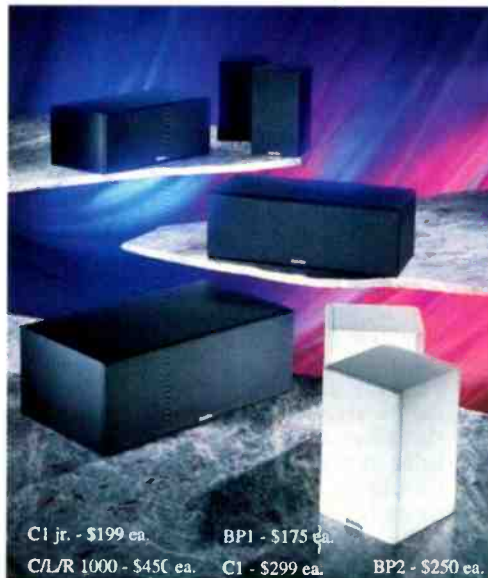
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SIGNALS

BY KEN C. POHLMANN

Hearing Is Believing

Leo Beranek was ranked among the most gifted acousticians of his day. His theoretical treatises laid the foundation of modern architectural acoustics. His designs for concert halls were considered among the finest in the world. In July 1962 Beranek wrote, in the preface to his new book, *Music, Acoustics, and Architectural Design*. "The climax of this volume is the description of the care taken in planning the Philharmonic Hall in Lincoln Center. Lady Luck has finally been supplanted by careful analysis and the painstaking application of new but firmly grounded acoustic principles."

But the opening of Philharmonic Hall on September 12, 1962, was a catastrophe. An absorptive stage wall made it difficult for the musicians to hear themselves or their colleagues play; the necessary reverberation was lacking. Strong echoes were audible in some audience seating areas; diffusion was insufficient. Adjustable ceiling reflectors conveyed middle and high frequencies to the audience but were too small to convey longer-wavelength low frequencies; the audience couldn't hear low-pitch instruments. Subsequently, Philharmonic Hall underwent many modifications, and the sound quality was improved, but problems remained. Finally, the hall was gutted and completely redesigned by Cyril Harris (and renamed Avery Fisher Hall).

The reasons for Beranek's failure were many and complex; among them was the stubborn conviction of his beliefs. Many acousticians of the time constructed physical models to test their designs. But Beranek did not build a model of Philharmonic Hall; he relied on his theoretical predictions and practical experience. Following the debacle, acousticians everywhere realized that even the most brilliant designers could make major errors—architectural acoustics was simply too complex for traditional analysis. The search began for better predictive tools.

In 1964, MIT professor Amar Bose founded Bose Corporation and launched its first amplifier design and, later, its first home loudspeaker. From the beginning,

the diverse problems of architectural acoustics attracted the company's attention, and in the following years more and more powerful computers enabled development of new acoustical design tools. In 1985, Bose introduced Modeler, a computer program that enables designers to build a model of an acoustical space and analyze acoustical response within it. Modeler is primarily used to design live sound systems for public spaces. Every interior surface of an auditorium, for example, can be drawn and characterized by its individual acoustical properties. To complete the model, sound sources can be selected from a library of professionally available loudspeakers and positioned in the space. Once a model is completed, a host of acoustical tests can be performed. Sound-intensity coverage, reverberation time, arrival times, speech intelligibility, frequency response, and many other parameters can be studied. The designer might select a particular seat, say, and analyze the many reflections arriving at that

Acousticians can now
audition the sound
quality of a concert hall
before it's built.

position. Using the model, a design can be quickly modified and retested.

With Modeler, designers can predict the response in a finished structure before the first shovelful of dirt is turned. Modeler's contributions to the design of everything from PA systems for Olympic bobsled runs to music systems for churches is legendary. Yet there was something missing from it. It was impossible for designers and their clients to employ their most critical analytical tool to evaluate a proposed design—their ears. Certainly graphical and numerical data can be interpreted to form an opinion—the essence of audio engineering is correlating technical data with sound quality—but without an audible result, more subtle design tweaking is simply not possible.

Bose has now addressed this need with Auditorer, a hardware/software system that combines an acoustical model and

construction parameters from Modeler with an audio input signal, and then computes and reproduces the sound field that would be present in the completed space. Designers and clients can actually select a specific seat in an unbuilt hall and audition the sound quality from there. Non-technical clients can actively explore the sound quality of a proposed design, listening to the results as different features are modified. For designers accustomed to staring at blueprints and computer screens to intuit a sense of the acoustical result, the capabilities provided by Auditorer are stunning.

Auditioner is a desktop computer that uses proprietary digital signal processing hardware to simulate the multiple arrivals and reverberation of a complex sound field. It has its own playback system, including near-field monitors that are positioned exactly in relation to the listener's ears (so critical is the positioning that a chin rest is used to maintain alignment). Why not use headphones? Bose tested and rejected that approach, deciding that the "in-the-head" sensation of headphone sound is not realistic enough. Auditorer can accept any sound source—for example, a spoken-word CD could be used to test the intelligibility of a public-address system in an airport.

Many audio companies offer ambience processors that generate realistic sound fields. Auditorer, however, could be useful as a professional design tool only if the sound fields it created were indistinguishable from the real thing. To authenticate Auditorer, Bose engineers placed the system in actual spaces and asked blindfolded listeners to compare the modeled sound field and the real one. In many cases they were unable to tell which was which. In all cases they found the modeled sound very *close* to the real thing.

Auditioner is a new tool in the acoustician's toolbox; early results show that it is highly reliable in creating sound fields before their underlying architecture physically exists. Bose is so confident of its abilities that it guarantees the sound quality of any facility designed using the system. Clearly, Auditorer is a breakthrough technology. For the first time, it is possible to create an imaginary sonic environment that seems so real it fools listeners into thinking it *is* real. With Auditorer, the solution to one of the greatest problems in creating virtual realities appears to be within our grasp. □

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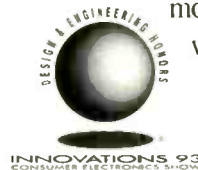
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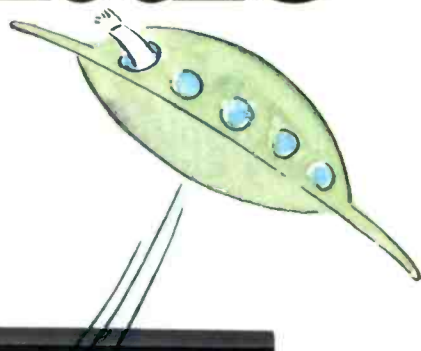
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PERIPHERALS

PRODUCTS AND TRENDS

THAT GO BEYOND

MAINSTREAM AUDIO/VIDEO

Multimedia, Packard Bell Style

BY CHRIS ALBERTSON

Ask a half-dozen people what "multimedia" means and you'll probably get a half-dozen different answers mentioning everything from the latest super-charged video-game system to audio-equipped PC's to interactive systems like CD-I. In the computer world, a multimedia system is one that combines such elements as audio, video, and telephony with the customary functions of a computer. To be considered a true multimedia machine, a computer must have at the very least a CD-ROM drive, a sound card, and speakers. It should also be able to serve as a useful extension to your audio/video system. If you have an ordinary no-frills computer, you can add your own multimedia enhancements à la carte, but most major manufacturers

are now offering all-in-one multimedia systems in an apparent attempt to eradicate computerphobia once and for all. One such plug-and-play computer is Packard Bell's Multimedia System, a DOS-based PC that's available in numerous configurations.

Packard Bell sent me the Model 486DX2/66, equipped with a 540-megabyte hard drive, 8 megabytes of RAM, a sound card, a double-speed CD-ROM drive, a 15-inch VGA monitor, speakers, an optional TV card, and a bundle of software—a package costing less than \$2,300 at retail, the company says. I had the system out of its boxes and running in about 30 minutes. Granted, I've had some experience setting up computer and A/V systems, but this one was a cinch. The only bothersome part was having to fid-

dle with screws to attach the speakers to the monitor. Why couldn't they just hook on? An illustrated, step-by-step instruction sheet simplifies cable connections, some of which are color coded, but I should point out that the TV card was already installed in the unit sent me, which made the setup considerably faster and easier.

A push of a button boots the system and brings up Packard Bell's proprietary Navigator interface, an attractive and highly functional piece of Windows dressing that lives up to its name. The opening screen I opted for shows an inviting interior—a main hallway from which four rooms can be accessed: a Learning Center and Workspace to the left, Kidspace straight ahead, and the Software room on the right. Moving the cursor to any of the room icons lights it up, and clicking the mouse button takes you to that area.

The Learning Center offers various step-by-step tutorials for using the system and some of the pre-installed applications. Clicking on Workspace opens a screen with neatly organized icon buttons for launching installed software and opening folders and files. If you don't like the setup, or want to add applications you've installed yourself, nothing is locked in, but reorganizing the Workspace is not for the novice (animated and narrated tutorials and well-thought-out manuals will help you get the hang of it, however).

Selecting Kidspace transports you to a play room of sorts, complete with juvenile animation and instructions delivered in a child's voice. Shelves contain items that launch a variety of simple games as well as the Windows Paintbrush and Write programs, and there are five drawers for storing files (labeled Homework, Letters, and so on). Password protection enables parents to select the software available in Kidspace and prevent unauthorized entry to the rest of the computer. Finally,



The Packard Bell Multimedia System is available in a number of configurations.

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(Capitol) 01782 ☆

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Emerson Lake & Palmer:
Welcome Back,
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(Victory) 05678 ☆

Jefferson Airplane:
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An Anthology
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Sieg

5. CLASSICAL (1)
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Itzhak Perlman

6. JAZZ
David Sanborn
Earl Klugh

7. METAL
Pantera
Mötley Crüe

8. R&B/DANCE
R. Kelly
Keith Sweat

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

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(MCA) 00409

**The Beach Boys: Pet
Sounds (Capitol) 00513**

**Jethro Tull: Thick As A
Brick (Chrysalis) 01023**

**James Taylor: Sweet Baby
James (Warner Bros.) 01249**

**Faces: A Nod Is As Good As
A Wink... To A Blind Horse**
(Warner Bros.) 01886

T. Rex: Electric Warrior
(Reprise) 02075

The Who: Tommy
(MCA) 03223

**David Bowie: The Rise
And Fall Of Ziggy Stardust
And The Spiders From
Mars (Rykodisc) 10803**

**Jackson Browne: Running
On Empty (Elektra) 11056**

**Elton John: Goodbye
Yellow Brick Road**
(Polydor) 03076

Fleetwood Mac: Rumours
(Warner Bros.) 24025

Blind Faith
(Polydor) 25073 #

**Traffic: The Low Spark Of
High Heeled Boys**
(Island) 25169

**Supertramp:
Breakfast In America**
(A&M) 25246

**Jimi Hendrix Experience:
Are You Experienced?**
(MCA) 25457

**The Eagles: Hotel
California (Asylum) 30030**

**The Police: Zenyatta
Mondatta (A&M) 30108**

**Grateful Dead:
American Beauty**
(Warner Bros.) 34539

**Little Feat:
Waiting For Columbus**
(Warner Bros.) 53296

**Allman Brothers Band:
Eat A Peach**
(Polydor) 63353

Van Morrison: Moondance
(Warner Bros.) 64585

The Band: The Last Waltz
(Warner Bros.) 01636 ☆

**Joe Cocker: Mad Dogs &
Englishmen (A&M) 35176 ☆**

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(Polydor) 02025

Cher: Greatest Hits
(MCA) 02131

**Paul Simon:
The Rhythm Of The Saints**
(Warner Bros.) 10455

**Robert Palmer:
Addictions/The Best Of**
(Island) 10819

**INXS:
Listen Like Thieves**
(Atlantic) 14468

The Commitments/Sdtrk.
(MCA) 74016

Dirty Dancing/Sdtrk.
(RCA) 82522

**Beverly Hills 90210-
The College Years**
(Giant) 06168

**Jeff Foxworthy: You Might
Be A Redneck If...**
(Warner Bros.) 06173

**Gladys Night: Just For
You (MCA) 02517**

**Abbey Lincoln & Hank
Jones: When There Is
Love (Verve) 02552**

**At Worst...
The Best Of Culture Club
And Boy George**
(SBK) 02575

**Martha Reeves & The
Vandellas: Live Wire! The
Singles 1962-1972**
(Motown) 21003 ☆

**Tears For Fears: Tears
Roll Down (The Hits 1982-
1992) (Fontana) 80162**

**Supertramp:
Classics (14 Greatest Hits)**
(A&M) 04891

R.E.M.: Eponymous
(I.R.S./A&M) 00701

U2: War (Island) 24619

**Talking Heads:
Speaking In Tongues**
(Sire) 02421

The Best Of Blondie
(Chrysalis) 01245

The Kinks: The Road Live
(Greatest Hits)
(MCA) 54474

**Dire Straits:
Brothers In Arms**
(Warner Bros.) 14734



there's the Software room, which gives access to the whole system, including exits to Windows and DOS.

ROM Revelations

The core of any multimedia computer is a CD-ROM drive, which opens the door for spectacular interactive programs and can serve as a link to your audio/video system. Packard Bell's built-in drive is a double-speed model that can also play standard audio CD's and Photo CD's. Although drives running faster are now available, this one works well with the computer's 66-MHz processor, producing smooth animation even when full-screen pictures are displayed. Thanks to their incredible data storage capacity, CD-ROM's are ideal for running space-hungry software with high-resolution graphics, animation, and sound (some programs are simply too big to fit on the average hard disk).

The CD-ROM market is flourishing, with many offerings aimed at the music lover. You can follow the history of jazz, trace the evolution of blues, study musical instruments, and go beyond mere listening. For example, the three-disc Warner Bros. CD-ROM version of Mozart's *The Magic Flute* not only lets you listen to an audio recording of the opera, but you can also follow its libretto in English or German, feed major arias to a MIDI keyboard, view historic costumes, study the original playbill, or even compare Florence Foster Jenkins's numbing rendition of the Queen of the Night's aria.

Getting the most out of such CD-ROM's requires a decent audio package. Packard Bell's 16-bit sound card does quite well, but the same cannot be said of the supplied speakers, which fail to deliver any discernible bass. You probably won't want to listen to your CD's on this computer unless you hook it up to your existing audio system or upgrade to decent speakers. Packard Bell offers two powered-speaker options, and excellent third-party replacement candidates include Advent's Powered Partners AV570 (\$399 a pair, formerly available under the Acoustic Research name) and SoundWorks by Henry Kloss, an under-\$200 system from Cambridge SoundWorks consisting of two magnetically shielded 3-inch-cube speakers that play above 150 Hz and a powered bass module containing a 4½-inch woofer for lower frequencies.

Packard Bell's Audiostation software allows you to control the audio features. Various modules, which look like conventional stereo components, appear on the screen and can be stacked on top of each other. The system includes an audio mixer and modules for a CD player, a DAT recorder, and a MIDI device. The MIDI module can record a single track to the hard disk even without an external MIDI device, but if you plug in a MIDI keyboard you can bring up the MIDI Orchestrator for multitrack creations.

Multimedia Pluses

Other intriguing bells and whistles that make this computer a true multi-

Packard Bell's
multimedia software
includes an audio
mixer and control
modules for external
audio components.

media system include the on-board fax modem (offered as a standard feature) and the optional TV card. By now fax modems are common, but this system's FaxWorks 3.0 software adds many other features, among them optional telephone-answering and voice-messaging systems. This is one of the most flexible and easy-to-use communications packages I have tried. For instance, you can retransmit an incoming fax to any fax device you choose, and you can have it fax (or phone to a digital beeper) notifications of all received faxes and voice messages. If you are home to receive a fax, you can modify it with text or a drawing while it's still on your screen, then forward it or return it to the sender with your comments. Everything is controlled from the Call Center, a user-friendly graphic interface. Oddly enough, the Multimedia System does not come with a microphone, although it offers many opportunities to use one.

The optional, cable-ready TV card (PBTV³) is not quite as useful, but it is fun. The picture quality is generally good, and you can watch TV even

while other computer programs are running. The size of the TV screen-within-a-screen is fully adjustable, and it can be dragged to any location on the monitor. All operations, including fine adjustments, can be controlled with the mouse or the keyboard. The card also has an audio/video line input for a VCR, camcorder, or laserdisc player, a stereo headphone jack, and an RF port (with a coaxial adaptor) for direct connection to cable or an antenna. Double-clicking the mouse on an area of the picture zooms in on it, and a keystroke freezes it for closer scrutiny or capture to the hard disk. The picture can then be brought up and modified in the Windows Paintbrush graphics program. Packard Bell also offers an optional FM card but did not include one with my evaluation system.

Software Galore

According to Packard Bell, the Multimedia System comes with twenty-seven pre-installed or bundled software packages, but that's a bit of a stretch. Unless I missed something, that count includes Windows and several utilities. But there is Microsoft Money (a personal-finance program), Microsoft Works (word-processing, spreadsheet, database, and communications in one package), and *The New Grolier Multimedia Encyclopedia*. Of the eight other supplied CD-ROM's, most contain software for children, including a lot of fluff that even kids will soon tire of.

Clearly, Packard Bell's Multimedia System was designed for family use, which makes it less appealing—not to say downright wasteful—to an adult who simply wants a multimedia computer. As an Apple Macintosh user, I was not impressed with the DOS-based system's relatively crude graphics, and, although I am no newcomer to Windows, I had forgotten how awkward that interface really is. Yes, the system's communications capability impressed me, and only the pre-installed Prodigy software gave me trouble (it went into a dialing loop each time, which is Prodigy's fault), but I could not in good conscience recommend it over some of the similarly priced Macintosh models. Packard Bell has done a splendid job of humanizing the PC—the Multimedia System's functionality and ease of use are remarkable—but when I ran the same programs on both platforms, Macintosh was the clear winner. □



TECHNICAL TALK

BY JULIAN HIRSCH

Can Everything Be Tested?

Letters from readers keep reminding me of some of the limitations of laboratory testing when it comes to defining the worth (or lack thereof) of certain products. Actually, I don't need to be reminded—I've long been aware of them.

Measurements are easy enough to make, given the availability of suitable test facilities. Interpreting the results can be quite another matter, however. For example, one reader wonders about why, in his experience, replacing the inexpensive ceramic capacitors and other components in old amplifiers with higher-grade parts yields "stunning results" (his words). He wonders why, if the higher-grade parts have measurably (and perhaps audibly) better qualities, equipment built with them doesn't test "better" as well. As he points out, modern state-of-the-art recording studios don't use cheap components in their mixing boards or D/A converters.

I can think of several reasons for this situation. The source material recording studios work with is, by definition, the ultimate standard—"live" music (or, at most, a small step removed from it). Presumably any unwanted degradation, no matter how slight, should be eliminated or minimized in the recording process. The end result of the mixing and any analog-to-digital or digital-to-analog conversion processes, culminating in an edited CD or tape version of the program, is a very different thing from the original performance, however, and I don't think anyone would argue that one could ever be mistaken for the other.

Insisting that consumer products designed for use in home playback systems be held to the same standards would be unreasonable and probably of little value—if not to everyone, at least to the typical user. Certainly most such products would be unaffordable by the average person. Some people, perhaps, such as the reader who asked me about it, *can* hear an improvement from replacing old components with higher-grade parts, but I suspect that most would not be able to detect it if the comparison were truly blind.

Probably the major reason I have never commented on this supposed effect is that I have never heard it (nor have I ever measured any benefit attributable to premium parts). If you believe there is such an improvement, however, then by all means enjoy it—I certainly wouldn't try to change your mind!

On a related subject, another reader asks if there is some way to test premium interconnect and speaker cables, widely touted (mostly by their manufacturers and dealers) for their impressive sonic benefits. He notes, quite logically, that "You can test everything else, why wouldn't you be able to test a wire?"

There is really not a lot that can be measured (nondestructively) on an audio interconnect cable. The most important electrical characteristic is the capacitance between channels (assuming that it is a dual-conductor cable), with the other parameters of inductance and resistance be-

Measurements are
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but interpreting the
results can be quite
another matter.

ing essentially out of the picture. Very few audio components have input or output impedances so high that a few hundred picofarads can affect the system frequency response in the audio range (actually, I cannot remember the last time I encountered one so poorly designed). Even shielding, necessary as it is, is rarely a critical consideration in a home installation. Many cable manufacturers stress the mechanical quality of their products, but only once in my forty or so years in this field have I encountered cables deficient in this respect.

In the case of speaker cables, the *only* electrical parameter normally of any significance is the DC resistance. Unless you are running very long lines to your speakers (say, more than 50 feet) or using wire thinner than 18-gauge, resistance is not likely to be a problem. The metallurgical qualities (except as they affect resistance)

and weave of the wire and the diameter of the cable have no effect on its audible performance that I have been able to discern. The connectors should be well made, especially if they are to be inserted and removed frequently, and such niceties as gold plating can do no harm and may reduce corrosion or oxidation over time. But in the end, I don't think there's enough to investigate or say about them to justify testing them.

Another reader would like to see a review of surge protectors. The value of such a device depends on your individual situation. In some areas the power service is irregular, with occasional transient voltage fluctuations and noise "spikes" superimposed on the nominally sinusoidal 120-volt, 60-Hz voltage. Presumably such conditions can create audible noise or other artifacts in an audio playback system, and in severe cases possibly cause damage. A surge protector, inserted between the audio components and the power line, presumably limits the peak level of any voltage transients in the power line, protecting the audio system.

I say "presumably" because I am blessed with a remarkably stable, "clean" power service (years ago, it was not so good, but our local power company has done a topnotch job of improving service). At any rate, my line voltage is a constant 122 to 123 volts, and there is never a transient noise to interfere with the operation of audio, video, or computer components.

Computers are quite susceptible to transient line-voltage "glitches," which can corrupt data or even damage the computer circuitry. This situation has logically led to the development of a host of surge suppressors of varying degrees of sophistication, and these are now being advertised in audio publications as well as computer magazines. Typically, they resemble multiple-outlet AC connection strips, usually with a power switch, though some are more elaborate.

Testing a surge protector would require the simulation of a 120-volt power line with transient signals of controllable amplitude and duration. Equipment for such simulation is not something to be found in every audio test lab. In light of the relatively infrequent and minor problems resulting from typical line transients, compared with the myriad of more conventional audio system difficulties, we do not currently consider it a priority. □



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Dear Movie Lovers,

If you have always believed that high quality Home Theater components were out of your reach. I invite you to audition the new Atlantic Technology System 250 at your earliest convenience.

The truth is that only a small group of manufacturers really know how to design good Home Theater equipment — and Atlantic Technology is one of the best. Our designers spend as much time at the movies as they do at their Macs. In fact, many of us here were involved in creating the world's first Home Theater back in 1981. That's why when it came to System 250, we had our toughest critics in mind — ourselves. This is the system we want to live with: compact, accurate, powerful and affordable.

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CIRCLE NO. 5 ON READER SERVICE CARD

TEST REPORTS



Technics SA-TX1000 A/V Receiver

DAVID RANADA • TECHNICAL EDITOR

Designing a Home THX receiver can't be easy. Not only do the engineers have to add to a normal receiver all the THX processing used to modify the outputs of a Dolby Pro Logic decoder, but they must also comply with demanding THX specifications for the power-amplifier sections. So it's perhaps no wonder that Technics, one of the first companies to issue THX-certified home theater equipment, is only the second to produce a Home THX receiver, the SA-TX1000.

The SA-TX1000 does indeed meet those requirements, with ratings of 120 watts per channel to the front speakers at 1 kHz into 6 ohms in surround mode and 130 watts per channel in regular stereo operation (a negligible 0.35-dB difference). The surround channels are driven by separate 55-watt amplifiers. This high power capability—480 watts total—is obtained from what is a relatively small enclosure, though the SA-TX1000 is still large and heavy for a receiver.

Technics says the receiver's compactness is made possible by the company's new Class H+ amplifier circuit, which is designed to enable high power outputs with less heat dissipation than is possible with conventional Class AB amplifiers. And to reduce heat-sinking requirements further, there is a low-noise fan in the back that comes on when the power output rises beyond a certain point.

For a top-of-the-line A/V receiver,

DIMENSIONS

17 INCHES WIDE, 6¼ INCHES HIGH,
16¾ INCHES DEEP

WEIGHT

30½ POUNDS

PRICE

\$1,200

MANUFACTURER

TECHNICS, MATSUSHITA CONSUMER
ELECTRONICS CO., DEPT. SR, ONE PANASONIC
WAY, SECAUCUS, NJ 07094

the SA-TX1000 has a comparatively small feature set. In addition to the internal AM/FM tuner, there are only five external inputs, designated for a CD player, an audio tape deck, a laser-disc player, a videocassette recorder (VCR1), and a videocassette player (VCR2). The VCR2 inputs are accessible on the front panel as well as the back. Both composite- and S-video connections are provided for the laser-disc player and VCR1, but, as usual, there is no conversion between formats, only separate composite- and S-video monitor outputs. There is no phono input.

Rear-panel connections include amplifier outputs for one complete set of home theater speakers (left, center, right, and two surrounds), as well as a set of surround-decoder line-level outputs. All incorporate Home THX processing when it is switched in. There is also a subwoofer output with a built-in 24-dB-per-octave crossover fixed at the THX standard of 80 Hz. Turning this output on with its nearby switch also switches in 80-Hz, 12-dB-per-octave high-pass filters on the outputs to the other speakers, promoting cleaner sound by relieving them of the burden of trying to reproduce frequencies that are already being handled by

TEST REPORTS

the subwoofer. Other rear-panel facilities include two switched AC convenience outlets, outputs for a second set of left/right stereo speakers, and the AM and FM antenna connectors.

Surround modes number three: standard Dolby Pro Logic, THX, and Dolby 3 Stereo (a Pro Logic mode that folds the surround outputs into the

front speakers if you don't have separate surround speakers). Switching to THX mode throws in all three processing functions required for Home THX certification: re-equalization (a mild high-frequency rolloff to compensate, for proper balance in the home, soundtracks originally equalized for theater playback), surround decorrela-

tion (a continuous phase scrambling of the two surround outputs relative to each other, to increase diffusion and reduce localizability of the surround speakers), and surround timbre matching (to more closely match the sound coming from side-mounted surrounds with that from the fronts).

Besides the input-selector and surround-mode switches, other front-panel facilities include the large tuning and volume knobs, a 1/4-inch headphone jack, the speaker selector switches, and small bass, treble, and balance knobs. The thirty-preset tuner section can be tuned in several different ways, controlled by mode buttons and a numerical keypad. Finally, a complete set of surround-setup controls are provided for surround delay (15 to 30 milliseconds in 5-millisecond steps), center mode, and the relative level of each speaker. The THX level-match test signal is activated by another button, and the subwoofer output is thoughtfully included in the signal sequence.

On the test bench, the SA-TX1000 proved to be a competent performer, capable of delivering large amounts of short-term power to low-impedance loads. Following the present fashion, the tone controls provide small changes in response for the first half of their rotation in either direction. The FM tuner section was average to good, the AM section (as usual) average to bad, with the dismal frequency response that is all too common to the breed.

Measured surround performance was generally fine. Particularly good was the perfect surround-channel level calibration in THX mode. Still, while the surround noise reduction had good frequency tracking, it overexpanded by about 2 dB at the lowest test level (-40 dB referred to a 141.4-millivolt input), meaning that the surround speakers will be about 2 dB too soft when the program material's surround content is low. This error is slightly larger than we have been seeing lately but is of little obvious audible consequence. More significant is the somewhat higher than average noise in the surround outputs, which can become audible in some situations if you're seated outside the null of a Home THX surround speaker.

MEASUREMENTS

AMPLIFIER SECTION

All data are for stereo operation.

Output at clipping (1 kHz)	
8 ohms	135 watts
Clipping headroom (re rated output)	
8 ohms	0.3 dB
Dynamic power	
8 ohms	156 watts
4 ohms	241 watts
Dynamic headroom (re rated output)	
8 ohms	1 dB
Distortion at rated power (125 watts, 1 kHz)	
8 ohms	0.021%
4 ohms	0.028%
Sensitivity (for 1-watt output into 8 ohms)	29 mV
Noise (re 1-watt output, A-wtd.)	-76.5 dB
Frequency response	20 Hz to 20 kHz ± 0.2 dB
Tone-control range	
100 Hz	± 9 dB
10 kHz	+10, -11 dB

TUNER SECTION

All data are for FM only except frequency response.

Sensitivity (50-dB quieting)	
mono	19 dBf
stereo	30 dBf
Signal-to-noise ratio (at 65 dBf)	
mono	76.5 dB
stereo	45 dB (limited by pilot leakage)
Distortion (THD+N at 65 dBf)	
mono	0.37%
stereo	2.6% (mostly pilot leakage)
Capture ratio (at 65 dBf)	1.5 dB
AM rejection	55 dB
Selectivity	
alternate-channel	66.5 dB
adjacent-channel	7.2 dB
Pilot-carrier leakage	
19-kHz	-35 dB
38-kHz	-72 dB
Hum (120 Hz)	-78 dB

Channel separation

100 Hz	31 dB
1 kHz	45 dB
10 kHz	43.5 dB

Frequency response

FM	20 Hz to 20 kHz +0, -2 dB
AM	150 Hz to 2 kHz +0.2, -3 dB

DOLBY PRO LOGIC PERFORMANCE

Unless specified as for Home THX, all measurements are for unmodified Dolby Pro Logic operation.

Frequency response

left, right	20 Hz to 20 kHz +0.3, -0.2 dB
center	20 Hz to 20 kHz +0.3, -1.1 dB
surround	31.1 Hz to 7.2 kHz +0.14, -3 dB

Noise (A-wtd.)

left, right	-72.4 dB
center	-74.7 dB
surround	-63.2 dB

Distortion (THD+N, 1 kHz)

left, right	0.033%
center	0.027%
surround	0.074%

Surround decoder input-overload margins (at 1 kHz)

left, right (re 2-volt input)	+1.1 dB
center (re 1.414-volt input)	+3.4 dB
surround (re 1.414-volt input)	+0.8 dB

Surround-channel noise-reduction calibration error

Home THX mode (re 141.4 mV)	0 dB
-----------------------------	------

Home THX re-equalization error

worst case	+0.2 dB at 16 kHz
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Home THX surround-channel equalization error

worst case	+0.62 dB at 1.6 kHz
------------	---------------------

Channel separation (100 Hz to 7 kHz)

left output, right driven	>36 dB
left output, center driven	>30 dB
left output, surround driven	>36 dB
center output, left driven	>44 dB
center output, surround driven	>50 dB
surround output, left driven	>39 dB
surround output, center driven	>35 dB

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RST-From cabinet top to bottom

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RWX-From wall to bottom



RWX-From wall to top



RWX-From side wall to bottom



RWX-From side wall to top

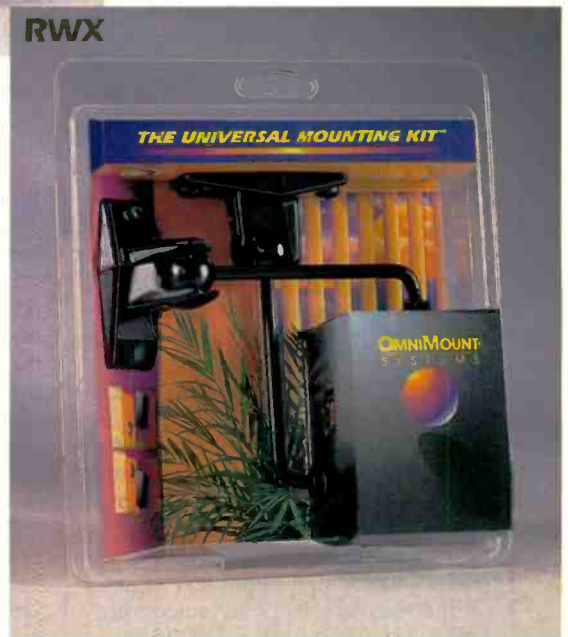


RWX-From ceiling to back



RWX-From cabinet top to back

RWX



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TEST REPORTS

For this price and power level, users might reasonably expect real multiway binding posts for speaker connectors. With the SA-TX1000, if you try to insert dual banana plugs—still the easiest-to-use high-current speaker connectors—you'll find that the "jacks" are not quite spaced correctly and that, in any event, the connectors are actually thumbscrew terminals that accept only stripped wires. In the absence of genuine banana-plug-compatible binding posts, it would be better to have connectors more conveniently finger-spaced for easy and reliable hookup than the ones supplied. And in this price range, I would prefer to see something better than the thumbscrews used as the FM antenna input, which on other, less-expensive receivers is sometimes a real F connector. Even the supplied AM antenna comes with its own plug-in connector.

There are a few other ergonomic problems with the rear panel, though none of them major. The audio and video connectors are arranged so that it is very confusing to change connections by feeling around from the front. Also, the surround- and center-channel decoder-output jacks are turned on only when at least one of the front-panel speaker switches is turned on. The reason is probably to reduce switching complexity within the receiver and to prevent user confusion when turning off all the speaker switches fails to turn off all the speakers in systems using external amplifiers for those channels. On the other hand, it makes it inconvenient to use the decoder outputs to drive a remote surround system.

There are plenty of things to admire about the SA-TX1000's operation, however. The tuning knob, for example, can be switched into auto-search or a flywheel-like manual mode. You can also tune by direct numerical input of the station frequency via the front-panel buttons (the numerical buttons on the remote select only among presets). Selection of which VCR2 input is active is via a front-panel button, which gives the receiver an additional A/V input, though one that is not always accessible from the remote. And whatever else I might not have liked



about them, the speaker connectors are logically arrayed: The upper connectors all go to left-channel speakers.

The lettering showing the selected input in the front-panel display is easy to read from across the room. The display is also tied to the potentially useful panic button, which is located next to the volume control knob and labeled "Help." Press it, and the front panel will tell you whether a switch setting (a mis-set tape-monitor switch, for example) is responsible if, say, you are not hearing anything. Hold "Help" down for a few seconds, and all the receiver's factory settings are restored (except for any tuner presets).

And then there's the sound quality. The SA-TX1000 is a solid performer on both music recordings and soundtracks. In straight music reproduction, its generous power reserves enable distortion-free playback at very high levels. I was disappointed, however, that Technics did not see fit to include even the most basic of music-enhancement processing modes in a receiver of this rank. Simply turning the surround decoder off and feeding a delayed signal to the surround speakers could yield appreciable benefits with many types of music and would be far more useful than the Dolby 3 Stereo mode that is provided (not many people who buy a Home THX receiver will lack surround speakers).

Both Dolby Pro Logic surround decoding and the added Home THX processing were accurate and clean, our only quibble being the slightly elevated surround-channel noise. When connected to a set of THX-certified speakers (including a powered subwoofer) and thrown into THX mode, the SA-TX1000 delivers as much impact as you could expect from a soundtrack.

That is precisely what the Home THX specs are intended to deliver: dubbing-stage sound quality free from added reverberation or ambience. Dialogue clarity was always excellent, soundtrack harshness at high playback levels was reduced, and the surrounds always produced the desired sonic envelopment with less of the "swimmy" tonal quality I've heard from some other Home THX processors. And since the benefits provided by the Home THX speaker and processor standards are more or less independent of each other, you'll get much the same sound quality when using carefully selected non-THX speakers, provided the surrounds are dipoles placed to the sides.

Even something as simple as the THX volume-control calibration has tangible benefits. For example, with the SA-TX1000, if your speakers have impedance ratings of 6 ohms or greater and sensitivity ratings of 87 dB or higher, and if, when playing a CD or laserdisc, you can get the sound loud enough without turning the volume past 12 o'clock, then you can be sure that the receiver will never be running into clipping regardless of the music. (Some under-recorded discs may require higher volume settings.) Using the SA-TX1000, you may be surprised, and you'll definitely be pleased, to learn that a receiver rated at "only" 120 watts per channel can produce what are enormous sound levels in domestic listening. I just wish the marker on the volume control were more easily visible at a distance.

THX approval of a component assures only that certain aspects of its performance meet certain requirements. It's up to the manufacturer then to provide the electronics-to-user link to make a basically well-performing component easy to use—and to hook up. Overall, Technics has succeeded admirably, and at the lowest price yet for a complete set of Home THX electronics. The SA-TX1000 is a reasonably easy-to-install and exceptionally easy-to-use home theater receiver—of somewhat limited versatility, perhaps, but of excellent listening quality, especially on soundtracks. □

A speaker good enough to be appreciated by almost no one.



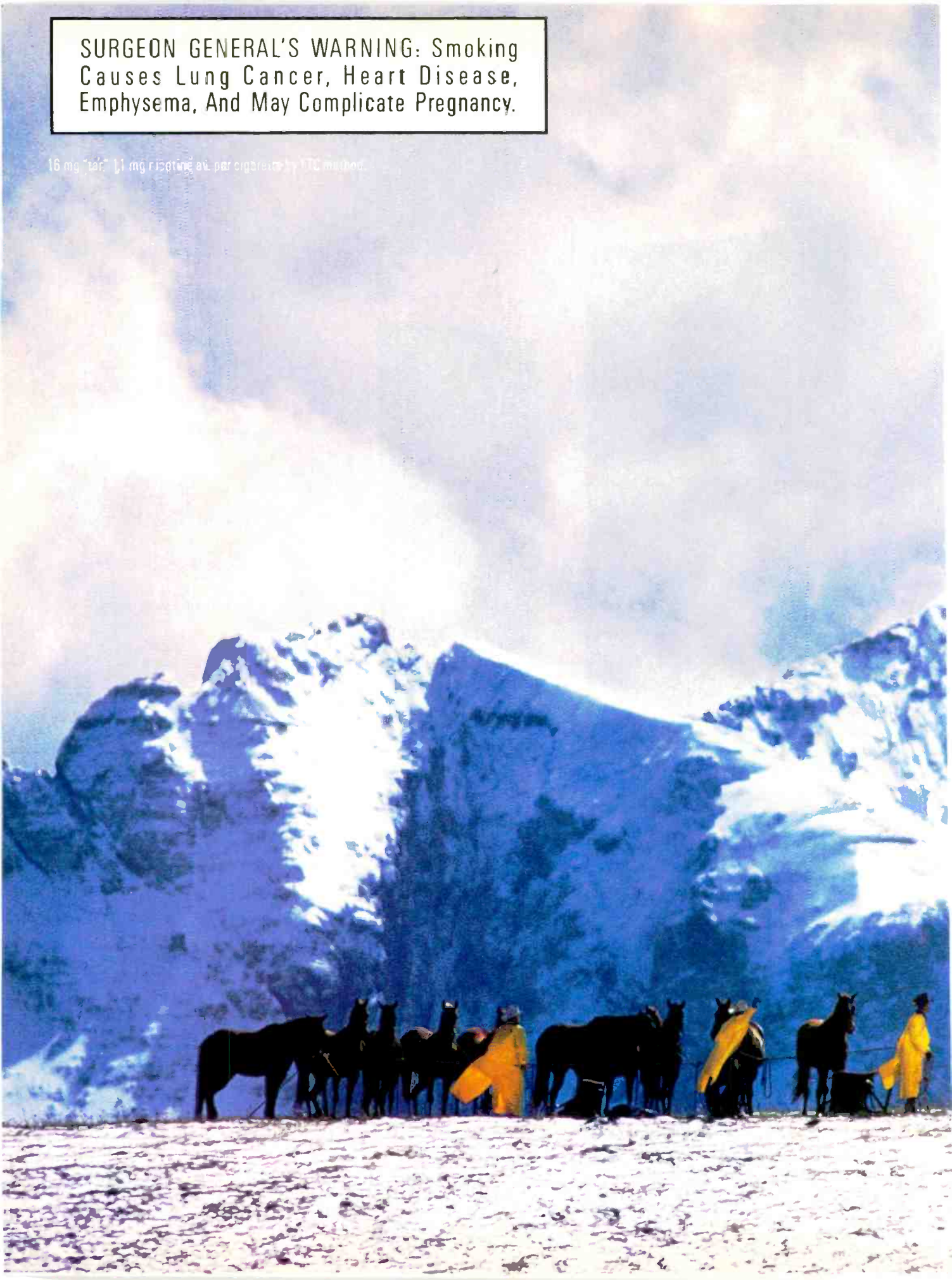
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TEST REPORTS



MB Quart Sub Ten Powered Subwoofer

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The MB Quart Sub Ten powered subwoofer is designed to enhance the low-bass performance of relatively small "satellite" speakers. Its single 10-inch, long-throw driver is constructed on a die-cast aluminum frame and uses a butyl-rubber edge surround. This driver operates in a sealed enclosure, which also contains an amplifier rated to deliver 100 watts into a 4-ohm load. The manufacturer provides no further information on the amplifier other than that it consumes only 120 watts, which implies an unusually efficient design (the manual describes it as "high efficiency," without elaboration). At any rate, that means the Sub Ten can be powered from the accessory AC outlets of many amplifiers and receivers (it can also be left powered indefinitely if that is acceptable).

The Sub Ten is a relatively small black box, with its front covered by a removable black cloth grille. On the back are the amplifier heat sinks, line cord, and power switch, with a red

LED pilot light indicating that the amplifier is on, plus the signal inputs and two control knobs.

The Sub Ten can be driven from line-level outputs, such as the main outputs of a preamplifier or the pre-amp-out jacks of a receiver or integrated amplifier, for which it has standard phono jacks. Normally, it should be connected to the outputs of both channels, which are summed in the Sub Ten's amplifier before reaching

DIMENSIONS

15 INCHES WIDE, 12½ INCHES HIGH,
15 INCHES DEEP

WEIGHT

35 POUNDS

PRICE

\$479

MANUFACTURER

MB QUART, DEPT. SR, 25 WALPOLE PARK S.,
WALPOLE, MA 02081

the speaker, or to an already summed subwoofer output. In most cases, however, there will be little difference if only a single channel drives the subwoofer. Alternatively, it can be connected in parallel with the speaker outputs, through insulated spring clips that accept stripped wire ends.

The two continuously adjustable knobs control level and cut-off frequency (the subwoofer's upper -3-dB frequency, at which it should ideally cross over to the main speakers). The latter is calibrated at 50 Hz (the minimum setting) and 150 Hz (the maximum), as well as at 75 and 90 Hz in between. Its rated crossover slope is 24 dB per octave. MB Quart gives the Sub Ten's response limits as 38 to 150 Hz \pm 3 dB.

As the instruction manual points out, the adjustment of these two controls is an interactive procedure. Although one can begin by setting the crossover frequency to the known (or presumed) low-frequency limit of the satellite speakers, the process involves trimming the crossover and volume controls to produce the most satisfying sound, and that can take time. The final line of the instruction process says it all: "Remember, a properly integrated subwoofer should be noticed sonically when it is off! Not when it is on!"

We measured the response of the MB Quart Sub Ten with the microphone close to the woofer's center to minimize room interaction. When the response at 50-, 75-, and 150-Hz crossover settings was plotted on a single graph, it was clear that the three curves merged below about 40 Hz, and that a clockwise rotation of the crossover knob increased the output level as well as the actual crossover frequency. That explains the interaction between the two controls (which is a characteristic of just about every powered subwoofer we have used). It also suggests that using the higher crossover settings (assuming that they match the response characteristics of the satellite speakers) can result in an effective lower limit of 50 or 60 Hz for the complete system. On the other hand, if a crossover no higher than 60 or 70 Hz is practical, the system response might be extended to around

PHOTO: JOOK P. LEUNG

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"Amazing." "Remarkable." "Unbelievable." These are the words used by members of the press at the unveiling of *SoundWorks*. In terms of frequency range, tonal balance, stereo imaging and overall sound, *SoundWorks* compares very favorably with systems costing far more.

SoundWorks consists of two satellite speakers and a compact subwoofer cabinet that holds a woofer, 3-channel amplifier and control panel. The satellites (available in black and computer beige) are magnetically shielded so they can be used by a computer monitor. The subwoofer cabinet (5 5/8" x 8" x

You can buy *SoundWorks* from the factory for only \$199 - and deal directly with the people who make it. We haven't heard a system for near its price that we think sounds nearly as good. And with our 30-day risk-free home audition, you can't go wrong.



9 5/8") reproduces non-directional bass so it can be placed in out-of-the-way places. It also has an input for 12 volts, so you can plug *SoundWorks* into the cigarette lighter in your car or boat.

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CIRCLE NO. 6 ON READER SERVICE CARD



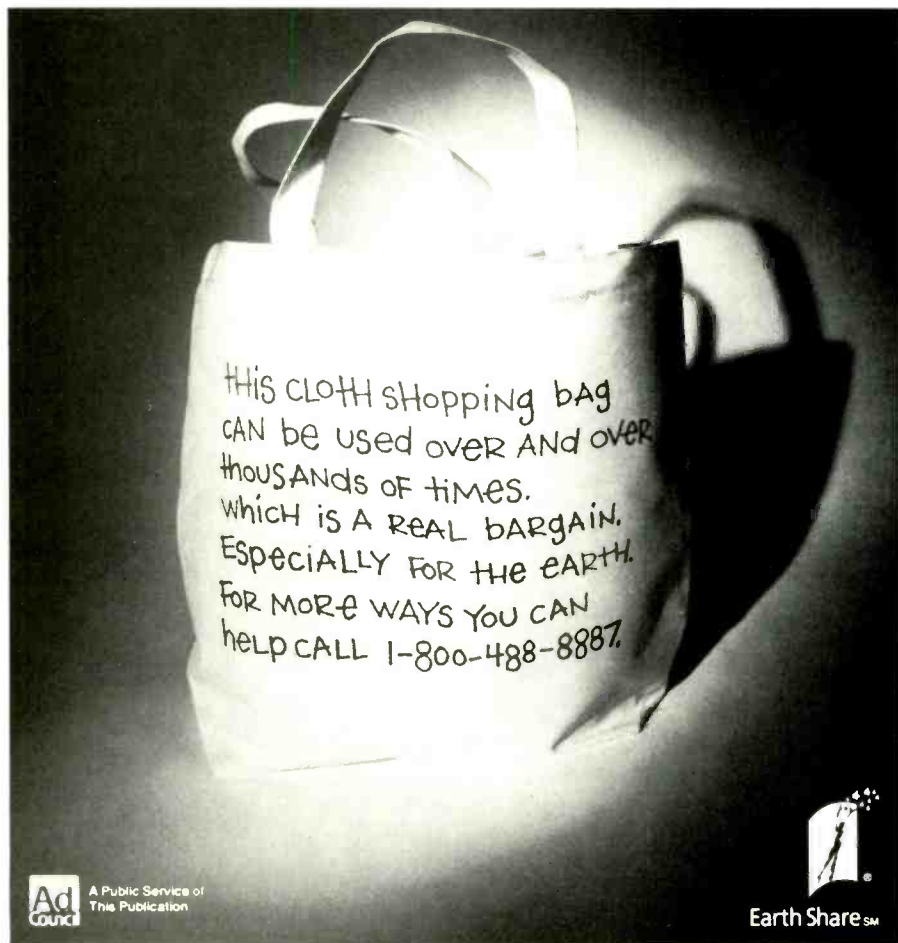
If a low crossover point is selected, the MB Quart Sub Ten can extend a system's response down to around 35 or 40 Hz.

35 or 40 Hz. Our tests also confirmed the 24-dB-per-octave crossover-slope rating.

We measured the harmonic distortion of the Sub Ten's output as a function of frequency for an output sound pressure level (SPL) of 90 dB at 1 meter distance. At 35 Hz the distortion was only 4 percent, and it fell smoothly to the range of 0.3 to 1 percent between 53 and 150 Hz.

As it happened, the only speakers we had on hand appropriate for use with the Sub Ten had a low-frequency limit (-3 dB) of about 50 Hz, making them ideal for judging the subwoofer's sonic performance. The combination was a happy one, with the Sub Ten adding almost an octave to the satellites' bottom end and blending with them unobtrusively.

A subwoofer can do a lot for most systems if it is compatible with the main speakers. The Sub Ten is no more difficult to set up than others we have used and does a fine job even though its response reaches down just barely to the upper portion of the lowest audible octave (from 20 to 40 Hz). It is also one of the smallest, least conspicuous, and least expensive of its genre. □



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"First Rate In Every Respect."



-Stereo Review
Nov. 1994

"Ensemble III Sounded Very Good Indeed...First Rate In Every Respect... It Manages To Sound Like A Lot More Speaker Than Its Unassuming Appearance And Very Attractive Price Would Suggest."

Stereo Review magazine has confirmed what thousands of our customers have known for some time - that a high performance, wide-range speaker system doesn't have to cost a fortune. Our new Ensemble III subwoofer/satellite speaker system has a natural, lifelike "big" sound you normally find only in very large, very expensive speakers. All in a very compact, easy-to-live-with package. All for only \$329, factory-direct.

Our Most Affordable Ensemble System.

Ensemble III is the most affordable member of our Ensemble family of subwoofer/satellite speaker systems, which *Audio* magazine said may be "the best value in the world." Like all our speakers, it was designed by Audio Hall of Fame member

Complete Ensemble III Pro Logic System.

You can own a complete Dolby Pro Logic home theater sound system with Ensemble III for under \$1,000. It consists of Ensemble III, three of our Model Ten-A two-way speakers (one for center channel, two for surround), a powerful Sony Dolby Pro Logic receiver (70/70/20/20 w/ch.), a high performance Sony CD player, and a system remote control. We don't know of a better home theater value in the country.



\$999/\$28 Per Month*
CSW Charge Card



\$329/\$15 Per Month*
CSW Charge Card

Henry Kloss (founder of AR, KLH & Advent).

Ensemble III sounds *very* much like our other Ensemble systems, with nearly identical tonal balance and stereo imaging qualities. Compared to our New Ensemble II subwoofer/satellite system, Ensemble III gives up a little in the way of power handling, low bass range, and efficiency. But unlike the "cube" satellite speakers you'd expect to find in similarly priced systems, Ensemble III's satellites are true two-way speakers. Each houses a 3 1/2" woofer and a 3/4" tweeter and a built-in crossover. Ensemble III's 6 1/2" woofer uses two separate voice coils (one for each channel) in a cabinet using a special flared port for smooth air flow.

With most recordings, Ensemble III will sound virtually identical to the New Ensemble II. It simply won't play as loudly, which makes it a *terrific* speaker system for smaller rooms.

Overcome The Fear Of Paying Too Little.

Ensemble III is affordable because we sell factory-direct, eliminating expensive middlemen. It doesn't mean we cut corners when we designed it. Its subwoofer cabinet is made of the same low-resonance MDF found in our New Ensemble and New Ensemble II systems. The satellites are housed in high-

grade ABS plastic, laminated to a stiff, acoustically dampening inner shell. There are built-in crossovers in both satellites and the subwoofer, so you can connect all three units directly to your receiver, or "daisy chain" the receiver to the subwoofer, then to the satellites.

Like all our speakers, Ensemble III is backed by our 7-year parts & labor warranty - and comes with connecting wire, a wire cutter/stripper, an informative user's manual, our "Hook-Up Guide" and our "Guide To Surround Sound".

30-Day Risk Free Audition.

With our 30-day risk-free home audition, you can listen to Ensemble III the right way - in your home, with your music, with no sales person hovering nearby. If you aren't entirely happy, return it within 30 days for a full refund. We even reimburse your original UPS ground shipping charges in the continental U.S.

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CIRCLE NO. 6 ON READER SERVICE CARD

TEST REPORTS



Denon DCM-460 Compact Disc Changer

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The DCM-460 changer is the lowest-priced CD player to incorporate Denon's new Alpha processing digital-to-analog (D/A) conversion system. The Alpha processor translates the 16-bit data from a CD to 20-bit data, interpolating an extra 4 bits into each sample based on the low-level characteristics of the waveform. Denon says that the system is based on a database developed from comparisons of 16- and 20-bit recorded data for a wide variety of waveforms, which enabled the company's engineers to determine what the additional 4 bits were most likely to be for a given set of 16-bit data. The resulting 20-bit data stream is then fed to dual 20-bit Denon Super Linear D/A converters. Denon credits the system with improving resolution and dynamic range.

The changer's five-disc carousel emerges at the touch of a button to expose the disc loading wells. All five positions are simultaneously accessible for loading and unloading discs—

an advantage over the more common arrangement in which only three or four discs are accessible at a time, with carousel rotation required to reach the remaining positions. Also, the disc drawer can be opened during playback to add or remove as many as four discs without interrupting the one playing.

At first glance, the DCM-460 looks much like many other carousel CD changers, but a closer examination

shows that it has an exceptional ratio of versatility to complexity. A row of five buttons on the front panel provides direct and rapid playing access to any of the discs. Above them, a row of smaller buttons, numbered 1 to 10, and one marked +10, give direct access to any track of a selected disc. To play (or program) Track 27 of a disc, for example, you merely press +10 twice, followed by the 7 button, and you can be hearing that track within a second or two.

In addition to the usual transport buttons (open/close, play, stop, pause), the front panel has a repeat button that (by successive pushes) lets you repeat a track, the disc, or all the discs. In its random mode, the DCM-460 can play the tracks on a single disc, or on any or all discs, in random order. The player can also be programmed to play a program of as many as twenty tracks from any of the loaded discs in any order. There is even a favorite-track file that stores the locations of as many as six tracks on each of up to a hundred discs, so that only those selections will be played when those discs are loaded. Clearly, this player provides as much operating flexibility as one could ever wish for. Best of all, its programming and other functions are clearly ex-

DIMENSIONS

17 1/8 INCHES WIDE, 4 1/2 INCHES HIGH,
15 1/2 INCHES DEEP

WEIGHT

13 POUNDS

PRICE

\$430

MANUFACTURER

DENON ELECTRONICS, DEPT. SR, 222 NEW RD.,
PARSIPPANY, NJ 07054



How Do You Improve On "...The Best Value In The World"?

Cambridge SoundWorks Introduces *New Ensemble*, *New Ensemble II* – and a new member of the family, *Ensemble III*.

Audio magazine once said our *Ensemble*® speaker system may be "the best value in the world." Since then, numerous critics have applauded our *Ensemble* and *Ensemble II* systems. Designed by Henry Kloss (founder of AR, KLH and Advent), they became best sellers by offering quality construction and accurate, wide-range music reproduction — at factory-direct prices.

We're pleased to introduce new versions of our *Ensemble* and *Ensemble II* systems, as well as our new, ultra-compact *Ensemble III*.

The New Ensemble

New Ensemble is an improved version of our original dual-subwoofer/satellite speaker system. *New Ensemble* maintains the dual subwoofer design, which allows for maximum room placement flexibility. Placement of bass and high-frequency speakers in a room (and how those speakers interact with the room) has more influence on the sound quality of a music system than just about anything. *New Ensemble's* ultra-slim (4 1/2") subwoofers give you more placement flexibility than any system we know of.



So What's New?

New Ensemble maintains the tonal balance, frequency range and quality of construction of the original. There are two basic differences.

1. *New Ensemble* uses a new 8" woofer with a very long "throw" for linear cone excursion and more accurate bass. An integral heat sink provides improved power handling.

2. *New Ensemble's* satellite speakers use the same speaker drivers and crossover as the original, but with new midrange and high frequency balance controls.

The midrange control lets you choose the same output in the key 800-1600 Hz octave as in the original, or you can emphasize that octave by 2 dB. *Ensemble* satellites have relatively less output in this range to avoid the "boxy" sound typical of many speakers. This results in an "open" sound on large-scale symphonic works. For small-scaled music, the higher output position proves a "warmer" sound.

A high frequency control has three positions: A) The same balance as original *Ensemble*. B) A 2 dB high frequency increase. C) A 2 dB high frequency decrease. The switch can subtly increase the system's "airiness" (Increase) or it can reduce any tendency towards "edginess" (Decrease).

In terms of "real life" performance, we believe our *New Ensemble* system competes head-on with speakers selling for hundreds more. Available with black-laminate subwoofers for \$629, or with vinyl-clad subwoofers for \$549.

The New Ensemble II

New Ensemble II is an improved version of our best-selling speaker system. It's more affordable than *New Ensemble* because it uses one cabinet to house both subwoofer speakers. *New Ensemble II* maintains the tonal balance, frequency range, power handling and construction quality of the original *Ensemble II*. But its satellite speakers use the same tonal balance controls as *New Ensemble's*.

New Ensemble II also uses a new flared subwoofer port. The subwoofer cabinet encloses two 6 1/2" long throw woofers mounted in a sealed "acoustic suspension" chamber. They project into a second chamber fitted with the flared port, which provides smoother air flow, eliminating extraneous noise on strong bass notes.

Stereo Review said the original *Ensemble II* "performs so far beyond its price and size it can be compared only with much larger speakers at substantially higher prices." *New Ensemble II* carries on this tradition, outperforming other speakers in its category, including well-known models for about twice the price. Factory-direct price, \$439.

The Ensemble III

Now you can bring the clear, balanced wide-range sound of *Ensemble* speakers to a small, crowded room. Our new *Ensemble III's* satellite



speakers are only 4 1/2" x 6 1/2" x 3" and its subwoofer is 8" x 8" x 15".

Compared to *New Ensemble II*, *Ensemble III* gives up a little in power handling, low bass range, and efficiency. Unlike the "cube" satellite speakers you'll find in most similarly priced systems, *Ensemble III's* satellites are two-way speakers. *Ensemble III's* 6 1/2" woofer uses two

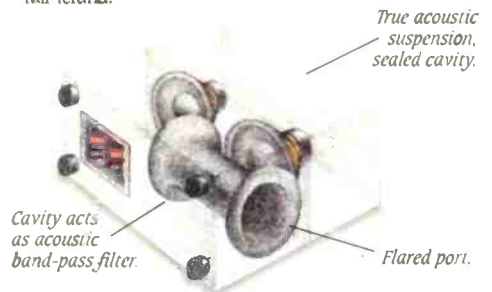
voice coils in a cabinet with a flared port for smooth air flow.

With most recordings *Ensemble III* will sound virtually identical to *New Ensemble II*. It simply won't play as loud. Its construction quality is normally found only in much more expensive speakers.

Factory-direct price, including connecting wire, cutter/stripper and Hook-Up Guide, is only \$329.

30 Day Home Audition.

All Cambridge SoundWorks speakers are backed by a 30-Day Total Satisfaction Guarantee. So you can audition your speaker the *right* way — in your home, with no salesman hovering nearby. If within 30 days you're not happy, return your system for a full refund.



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CIRCLE NO. 6 ON READER SERVICE CARD

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BY HENRY KLOSS



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Guide To
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TEST REPORTS

plained in the instruction manual, and it is actually easier to use than it is to describe.

Other, more conventional features of the DCM-460 include a headphone jack with volume control, rear-panel fixed- and variable-level audio output jacks, a coaxial digital output, and a synchro jack for connection to a compatible Denon cassette deck for synchronized taping of a CD. And the front panel has a display window that shows the player's complete operating status, including the current mode, disc and track number, and elapsed time on the current disc.

The DCM-460 is supplied with an infrared remote that not only duplicates the front-panel control, but whose use is required for certain operations, such as the favorite-track file storage and selection process and for adjustment of the level from the back-panel variable output jacks.

Although the DCM-460's specifications are superior to those for most competitively priced players, it not only met its specs but surpassed most of them by a comfortable margin. As one might therefore expect, sound quality was superb. Perhaps best of all, the DCM-460, despite its potential operating complexity, proved to be one of the easiest and most intuitive CD changers we have yet used. If you're seeking an exceptionally versatile, high-performance CD changer, don't overlook the Denon DCM-460. □



MEASUREMENTS

Maximum output level	1.88 volts
Frequency response	20 Hz to 20 kHz +0.02, -0.05 dB
De-emphasis error (at 20 kHz)	-0.16 dB
Channel separation	
100 Hz	120 dB
1 kHz	112 dB
20 kHz	85 dB
Signal-to-noise ratio (A-wtd.)	117.5 dB
Quantization noise	-93.5 dB
Dynamic range	99.5 dB
Distortion (THD+N)	
1 kHz at 0 dB	0.008%
1 kHz at -20 dB	0.0035%
20 Hz to 20 kHz at 0 dB	0.004 to 0.035%
Linearity error (-90 dB)	1.5 dB
Max. interchannel phase shift	2.25°
Defect tracking	
(Pierre Verany #2 test disc)	1.500 µm
Impact resistance	
top and sides	A
Disc-change time	10 to 11 seconds
Track-change time	<2 seconds



"No, I never asked my last husband James how he could afford \$80,000 loudspeakers on a security guard's salary. . . ."

In The Mid '70s We Created Home Theater. Now We've Created A New Way To Buy It.



The people who work at Cambridge SoundWorks - including our cofounder Henry Kloss (who also founded AR, KLH and Advent) - have been involved with the concept of home theater from the beginning. In 1969 (years before VCRs and cable TV), Henry Kloss founded Advent, the company that introduced the first home theater audio/video systems - complete with big-screen TVs and digital surround sound. We have had an ongoing relationship with the people at Dolby Laboratories, creators of Dolby Surround Sound, since Henry Kloss introduced the first consumer products with Dolby noise reduction over 20 years ago. And now at Cambridge SoundWorks we believe we have set a new price-to-performance standard for home theater components.



Surround Speakers

Cambridge SoundWorks makes two "dipole radiator" surround sound speakers. Dolby Laboratories recommends dipole radiator speakers for use as surround speakers.

The Surround has a very high power handling capacity and is often selected for "high end" surround sound systems. *Audio*, describing a system that included *The*

Surround said, "In many ways the surround sensation was every bit as good as far more expensive installations." **\$399 pr.** The smaller *The Surround II* is arguably the country's best value in a dipole radiator speaker. **\$249 pr.**

or with powered subwoofers made by other companies. Its high pass filters keep strong, low bass signals out of the main stereo speakers, and directs them to the powered subwoofer. **\$299.**

Home Theater Speaker Systems

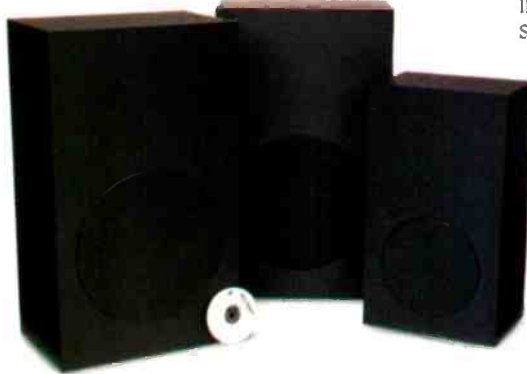
We have assembled a number of home theater speaker systems that consist of center channel, surround and main stereo speakers. The



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

Center Channel Speakers

Cambridge SoundWorks manufactures three speakers for use as center channel speakers in Dolby Pro Logic home theater systems. All three are magnetically shielded so they can be placed near a TV or computer monitor. *Model Ten-A* is a small, affordable two-way speaker. **\$80.** *Center Channel* is identical to a



duty 12" woofer housed in an acoustic suspension cabinet with a 140-watt amplifier and a built-in electronic crossover. *Stereo Review* said it provides "deep powerful bass...31.5 Hz bass output was obtainable at a room-shaking level... they open the

way to having a 'killer' system for an affordable price." **\$699.** Our *Slave Subwoofer* uses the same woofer driver and cabinet, but does not include the amplifier or crossover. It can only be used in conjunction with the *Powered Subwoofer*. **\$299.** The new *Powered Subwoofer II* uses a 120-watt amplifier with an 8" woofer. **\$399.**

Our *EXO-1* electronic crossover can be used with either of our powered subwoofer systems,

combination we show here is our best seller. It includes our critically acclaimed *Ensemble* subwoofer satellite speaker system (with dual subwoofers), our *Center Channel Plus* and a pair of our best surround speakers, *The Surround*. You could spend hundreds more than its **\$1,167** price without improving performance.

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Cambridge SoundWorks *Ensemble* satellite (but with magnetic shielding). **\$149.** *Center Channel Plus* uses an ultra-low, ultra-wide design that is ideal for placement above (or, with optional support stand, below) a TV monitor. **\$219.**

TEST REPORTS



TDL RTL2 Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

In general, bass speaker enclosures can be classified as closed (fully sealed) or vented through one or more holes (ports). Although each type has its advantages and drawbacks, practically all speakers fall clearly into one or the other category.

There is, however, another type, known generically as transmission-line, that might be viewed as something of a hybrid of the other two. The enclosure is ported through a long, tapered duct that contains damping material to absorb most of the back wave from the woofer while still providing reinforcement of the lowest frequencies. The English company of TDL

Electronics has been known for its transmission-line speakers for some twenty-five years. Although recognized for their excellent acoustic properties, their internal complexity has limited transmission-line speakers mostly to relatively high price brackets (TDL's larger speakers cost several thousand dollars a pair).

TDL has recently introduced a line of smaller and more affordable speakers, using what it describes as a "reflex transmission line" design, although specific internal construction details are not indicated in the company's literature. The middle model of the group, the RTL2, is a compact, floor-standing columnar speaker, not much larger than a typical system intended for bookshelf mounting. It is a two-way system, whose single 6¾-inch, long-throw, polypropylene-cone woofer has a rubber surround, a two-layer voice coil, and a hard plastic phasing plug at its center. There is a second-order (12 dB per octave) crossover at 3 kHz to a ¾-inch soft-dome tweeter with magnetic-fluid cooling.

The cabinet is finished on all visible surfaces as well as on the front panel, which is normally protected by a removable black cloth grille, retained by plastic snaps. The woofer and tweeter are on the upper portion of the front panel, and the bass port is at the bottom, its relatively large area filled with a plastic foam material. Transmission-line enclosures normally contain a relatively long, labyrinthian sound path, terminating in an opening to the exterior, and presumably the RTL2 has a comparable internal structure. Four insulated binding-post connectors (separate pairs for the two drivers) are recessed into the back panel and are normally joined by wire links. Removing the links enables bi-wired or bi-amplified operation of the system. As with most British speakers, the terminal spacing is intentionally too large for double banana plugs, but they are compatible with single banana plugs as well as bare wires or spade lugs.

The RTL2's rated frequency range is 40 Hz to 20 kHz (no tolerance given), with a sensitivity of 87 dB sound pressure level (SPL) at 1 meter for a 1-watt input to its nominal 8-ohm impedance. It is recommended for use

PHOTO: JOCK P. LEUNG

DIMENSIONS

3 INCHES WIDE, 28¾ INCHES HIGH,
9¼ INCHES DEEP

WEIGHT

20 POUNDS

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ROSEWOOD OR BLACK ASH

PRICE

\$600 A PAIR

MANUFACTURER

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Satellite and Subwoofer Speakers: The "Overnight Success" of the '90s.

Overnight, it seems, virtually everyone has discovered the advantages of the satellite-subwoofer speaker concept—especially for use in the home theater.

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the dominant choice for the multichannel home theater.

M&K speakers have been found in Hollywood screening rooms (the earliest home theaters) since the 1970s.

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Powered Subwoofer

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S-1C Satellite
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R-e-l-a-x.

Now you can obtain a powerful home theater command center, combining the musical brilliance of separates with the ease of a receiver, all in one versatile package: Carver's CT-27v Dolby Pro Logic™ A/V Preamp/Tuner.

The CT-27v pairs flawless sound with exceptional Dolby processing, including a generous selection of DSP effects (wait 'til you experience an old movie like *Casablanca* on our "Matrix"

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When matched with a Carver amplifier (models from basic stereo to multi-channel), the CT-27v lets you direct power to any array of speaker combinations – a task for which a mere receiver is woefully undermanned. So you'll achieve wider frequency response and have the dynamic headroom necessary for those explosive moments in great movie soundtracks.

In sum: the CT-27v is the heart (and soul) of the most uncompromising home theater system. For more of the story, contact Carver today for a feature length brochure.

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CIRCLE NO. 44 ON READER SERVICE CARD

TEST REPORTS

with amplifiers delivering between 20 and 80 watts per channel.

In our close-miked woofer measurement, the RTL2 produced an exceptionally flat and extended response, varying only ± 2.5 dB from 60 Hz to 2.5 kHz. The effective crossover to the port occurred between 50 and 60 Hz, and the output fell off gradually below that point.

The averaged room response of the two speakers showed moderate variations of perhaps ± 3 dB between 70 Hz and 2 kHz, followed by a flat output between 2 and 10 kHz. The woofer curve spliced unambiguously to the room curve, resulting in one of the flattest composite response measurements we have seen from a speaker: ± 2 dB from 60 Hz to 20 kHz, and falling off at only 6 dB per octave at lower frequencies.

A quasi-anechoic MLS measurement at 2 meters (on axis) indicated response within ± 3 dB from 600 Hz to 20 kHz. The system's horizontal treble dispersion was typical of many dome tweeters, with little change in output below 8 kHz over a ± 45 -degree range relative to the tweeter axis, a drop of about 5 dB at 15 kHz, and a drop of about 12 dB at 20 kHz.

The system impedance plot showed a peak to 19 ohms at the bass resonance frequency of 70 Hz and another rise to 15 ohms at 20 Hz (the lower limit of our measurement). The 6.5-ohm reading at 200 Hz could be considered the system's nominal impedance, although it reached 10 ohms at 1.1 kHz and fell to a broad minimum of 4.5 ohms between 6 and 15 kHz.

Sensitivity was better than specified: 90 dB SPL at 1 meter with a 2.83-volt input of pink noise. At that input level, the woofer distortion averaged about 1 percent (with overall variations from 0.6 to 1.5 percent) from 55 Hz to 2 kHz and reached only 3 percent at 40 Hz.

Single-cycle, 100-Hz tone bursts drove the woofer cone to its limits at an input of 270 watts into its 9-ohm impedance. At higher frequencies, our amplifier clipped (at power levels from 600 to 1,200 watts) before the speaker produced any serious sounds of distress.

In listening tests, the RTL2 sounded

**The sound of the
TDL RTL2 was smooth
and remarkably
uncolored throughout
the audio spectrum.**

pretty much as it measured, with a smooth, uncolored output that was notably free from emphasis (or a deficiency) in any particular part of the frequency spectrum. Such neutrality is probably the goal of many speaker designers, but it is rarely achieved to this degree. In A/B comparisons with other speakers of comparable price or size, the TDL RTL2 easily held its own, although it should be realized that all speakers (even those with very similar design and construction) sound different from each other when compared in a side-by-side listening test, and that the differences are often highly program-sensitive.

On the stereo-imaging tests of the Chesky JD37 test/demo CD, the performance of the RTL2's was well-nigh perfect—at least, we have never heard a more unambiguous demonstration of lateral and vertical source positioning from this disc. Our tests also confirmed what is probably a major advantage of the transmission-line enclosure (and apparently the "reflex transmission line" as well). Most speakers, whether in a sealed box or vented enclosure, have a resonant rise or peak in the upper bass or lower midrange, which can introduce coloration on vocal programs. A flat upper-bass response is, unfortunately, a rarity. The RTL2 shares with its larger and costlier relatives their freedom from bass heaviness or boom, without sacrificing whatever low-bass capability has been designed into them.

The TDL RTL2 is a very attractive and listenable speaker at a most attractive price. It is well worth hearing if you are in the market for a compact, topnotch speaker system that won't bankrupt you or dominate your home decor. □



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TEST REPORTS



Chase Technologies RLC-1 Remote Line Controller

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Although virtually all recent stereo receivers and many integrated amplifiers are furnished with infrared remote controls, and have at least some degree of compatibility with surround-sound operation, many perfectly serviceable older units (especially in the low price brackets) lack these conveniences. Their owners, faced with the expense of upgrading to a completely modern system, may wind up settling for the status quo instead.

Chase Technologies has developed an inexpensive solution to this problem. Its RLC-1 Remote Line Controller, when used with any amplifier or receiver having a tape-monitor loop (which almost all do), provides full remote selection of four sources. Although these inputs have specific iden-

tifying labels, they are usable with any source operating at line level. Another source (such as tuner or phono) can be selected directly at the receiver or amplifier. The RLC-1, through its wireless remote control, switches the pow-

DIMENSIONS

14 INCHES WIDE, 2¼ INCHES HIGH,
7 INCHES DEEP

WEIGHT

4½ POUNDS

PRICE

\$125

MANUFACTURER

CHASE TECHNOLOGIES, DEPT. SR, 4275 34TH
ST., SUITE 325, ST. PETERSBURG, FL 33711

er to the system, selects the program source, mutes and unmutes the system, and smoothly varies the volume, bass and treble response, and channel balance. When used with a suitable surround processor, it controls the relative levels of the front and surround speakers as well. Chase also manufactures a surround decoder for this application, but we did not test it.

The RLC-1 is a compact black component whose front panel contains six red LED indicators. One is the power pilot light; four others are marked VCR, CD, tape, and auxiliary, to identify the selected source; and the last one indicates that the system mute is in operation. The function lights also come on sequentially to show the relative settings of the various control functions operated from the remote. For example, as the volume control is varied over its range, the right-hand LED (aux) comes on at the maximum control setting, the center light shows the normal setting, and the leftmost light (mute) indicates a minimum setting. A second or so after the adjustment has been completed, the display returns to normal.

PHOTO: JOOK P. LEUNG

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TEST REPORTS

The RLC-1 connects to the tape-out and tape-in jacks of a receiver or amplifier. After the receiver's volume control has been adjusted to a suitable maximum level, the balance control to its neutral position, and the tone controls to their flat settings, all volume, balance, and frequency-response adjustment is done through the RLC-1. Program inputs other than the four basic ones provided can be selected directly via the receiver or amplifier's input selector. In addition to the signal connections to the receiver's tape input and output jacks, the rear of the RLC-1 has a switched AC power outlet with a 500-watt capacity, sufficient to operate a receiver and any accessories that might be plugged into its convenience outlets.

Chase Technologies says the RLC-1 will not degrade the distortion, noise, or crosstalk performance of any component with which it is used. Its preliminary specifications include a frequency response of 20 Hz to 20 kHz ± 0.1 dB, distortion of less than 0.05 percent, a signal-to-noise ratio of 105 dB (relative to an unspecified level), channel separation of 100 dB, and crosstalk (between input sources) of -110 dB. Its input impedance of 100,000 ohms is high enough not to affect the performance of any program source with which it is used, and its

MEASUREMENTS

Output at clipping (1 kHz).....	2.3 volts
Distortion (THD+N at 0.5 volt output)	
20 Hz to 20 kHz.....	<0.16%
Noise (A-wtd., re 0.5-volt output)	
maximum gain.....	-74 dB
minimum gain.....	-82 dB
Crosstalk (between inputs)	
1 kHz.....	-62 dB
10 kHz.....	-53 dB
Channel separation	
1 kHz.....	66 dB
10 kHz.....	46 dB
Frequency response	
.....20 Hz to 20 kHz +0, -0.45 dB	
Tone-control range	
70 Hz.....	+8.5, -9.5 dB
20 kHz.....	+9, -9.5 dB

rated output impedance of 80 ohms should render it immune to the loading effects of any component that it may be driving.

We measured the RLC-1's frequency response at an input level of 0.5 volts (the standard value for amplifier measurements). With the tone controls set flat, the response was ruler-flat from 100 Hz to 20 kHz, dropping off slightly to -0.45 dB at 20 Hz and 100 kHz. The tone controls had fairly typi-

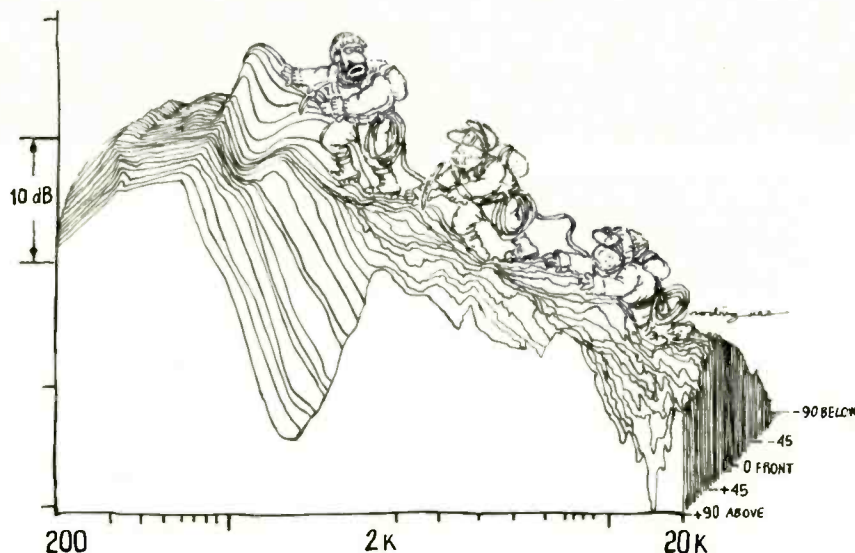
cal characteristics, with their boost and cut curves hinging at about 1 kHz and changing the level at that frequency by almost 2 dB.

Maximum output level, though relatively low by the standards of most separate preamplifiers, should be more than adequate. Total harmonic distortion plus noise (THD+N) was typically about 0.1 percent at most levels. A spectrum analysis (excluding noise) of the RLC-1's output at 1 kHz and 1 volt showed a second harmonic of -60 dB (0.1 percent) and a third harmonic of -72 dB (0.025 percent). Higher harmonics and noise were insignificant.

Taken together, the measurements suggest that the RLC-1 is very unlikely to introduce any audible artifacts into any hi-fi system (and especially not into one based on old or inexpensive components). We used it with an old, but good quality, integrated amplifier and a modestly priced tuner, driving a pair of small speakers that happened to be on hand for testing.

The preliminary instructions furnished with the Chase RLC-1 were complete and unambiguous, and we had no difficulty in setting up and operating the system. After a little practice its unusual operating "feel" seemed quite reasonable, and all its features worked exactly as represented. Probably the most difficult accommodation we had to make (relative to using any conventional receiver or amplifier) involved the highly approximate indication of level and tone-control settings via the row of five LED's. On the other hand, if you adjust by ear and do not worry about the look of the response curve—which, after all, is the most logical approach—the RLC-1 is no more difficult to use than conventional controls.

Although some of the preliminary specifications seem rather optimistic as well as loosely defined, the RLC-1's actual performance is, as claimed, unlikely to degrade that of any system in which it is used. It is an ingenious and inexpensive device for extracting a lot more versatility (such as wireless remote control) from your old components than they were ever meant to provide. It could even be used very effectively as the main preamplifier in a simple audio or A/V system. □



"Gentlemen, this is definitely not Mount Catacocha—it appears we're on a vertical off-axis frequency-response graph of some kind of loudspeaker!"



40 years ago, color screens ushered in a new dimension in television viewing. Today JBL would like to introduce you to the next dimension: full color sound. Of course, you've probably already experienced it since our surround sound system can be found in nearly 70% of all new movie theatres. But now we've

**YOU WATCH TELEVISION IN COLOR.
WHY ARE YOU STILL LISTENING IN BLACK AND WHITE?**

created a home version called SoundEffects. Hook it up and you'll feel helicopters circle overhead. Blindside blitzes will have maximum impact. Even a kiss will feel hotter. Ask your JBL dealer for a SoundEffects demonstration. And see how colorful TV can sound.



JBL
SoundEffects

MAKING WAVES IN SOUND

Clockwise from top left: Our stereo satellite speakers put you in the middle of the action, not just in front of it. For dialogue there's our center channel, where whispers are as clear as screams. Another satellite speaker to round out the set. Our subwoofer, for the pitter patter of dinosaur footsteps throughout your house. For the name of your nearest dealer, call 1 800 336-4JBL (4525).

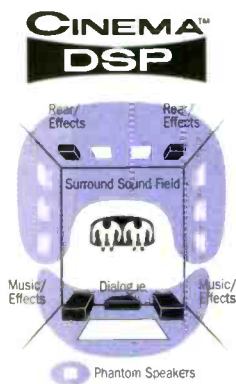
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With Cinema DSP, you'll be amazed

Only Yamaha Cinema DSP creates phantom speakers. It sounds so real, you'll swear you hear sounds in places you don't even have speakers.



Bats screech overhead. Wolves howl in the distance. And footsteps crunch across your living room floor. No, it's not your imagination. You're hearing sounds placed around the room, just as the director intended.

All courtesy of Yamaha Cinema DSP. The home theater technology that gives dialogue more definition. Music, more dimension. And sound effects, more graphic detail.

Only Yamaha Cinema DSP creates phantom speakers that fully replicate the experience you get in multi-speaker movie theaters. It sounds so real, in fact, you'll swear you hear sounds in places you don't even have speakers.

As you might imagine, a breakthrough like this is no small feat. It's accomplished by multiplying the effects of Digital Sound Field Processing and Dolby Pro Logic.[®]

Digital Sound Field Processing is Yamaha's unique technology that electronically recreates some of the finest performance spaces in the world.



at what comes out of the woodwork.

And Dolby Pro Logic is the technology responsible for placing sound around the room, matching the dialogue and sound effects with the action on the screen.

Together, these two technologies allow Yamaha to offer a complete line of home theater components that outperform other comparatively priced products on the market.

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For the sales location nearest you, call 1-800-4YAMAHA.

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The Eleventh Annual Rodrigues Cartoon Caption Contest

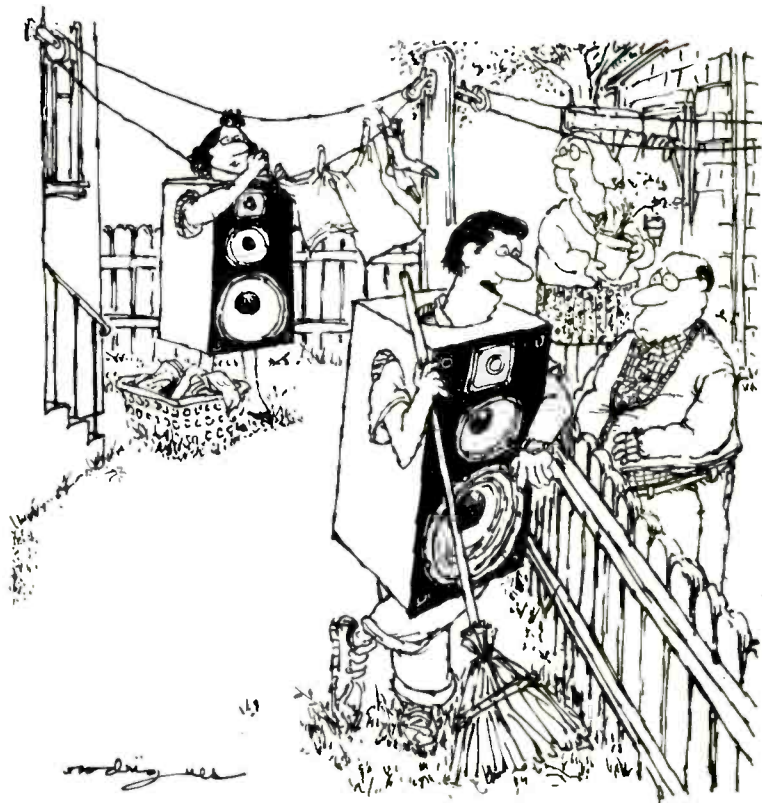
This year the annual Rodrigues cartoon caption contest moves into its second decade, and STEREO REVIEW's favorite artist, Charles Rodrigues, has as usual provided a drawing calculated to stimulate your funnybone and your creativity. The editors of the magazine invite the readers to enter the 1995 contest by submitting captions for the new drawing at right.

The person who sends in the caption that is judged to be the funniest will win valuable prizes: the original drawing, US\$100, and the 15 minutes of fame that will come with having his or her name published beside the winning caption when the contest results are announced. We urge you to shift into energetic, creative mode. Rise above Generation X disenchantment. Accomplish something! Half-way into the decade of the Nineties, old-fashioned 1980's greed is back in style. Go for the gold! Submit captions!

Anyone may enter, and there is no limit to the number of times you may enter, but each caption submitted must be on a separate sheet of paper that also contains the clearly legible name and address of the person who sends it in. Entries that have more than one caption per sheet will be disqualified. All entries must be received no later than March 1, 1995.

In addition to Charles Rodrigues himself, the panel of judges will include members of STEREO REVIEW's editorial staff and the winners of the ten previous contests: Thomas Briggie (Akron, Ohio), Michael Binyon (Weaverville, California), Bruce Barstow (Philadelphia, Pennsylvania), Matt Mirapaul (Evanston, Illinois), Marc Welenteychik (Richmond, Virginia), Douglas Daughhete (Birmingham, Alabama), Kelly Mills (Raleigh, North Carolina), Diane Sullivan (Grand Falls, New Brunswick), Brian Hoffman (New York City), and Ron Haynes (Nashville, Tennessee). Entries will be judged on the basis of originality, appropriateness, and humor, and the decision of the judges will be final.

Now look at the drawing. What can Fred Audax be saying to his nervous neighbor about those speaker enclosures? How does Rodrigues think up these situations? What does this drawing make you think of? Put that into a funny caption and send it in.



The winning caption and a selection of runners-up will be published in the June or July issue this year. Every January we resolve to finish the judging by June, but we haven't made that deadline yet. This may be the year we will get our judging act together, and you may win the prize. Enter today. The usual restrictions are printed below. □

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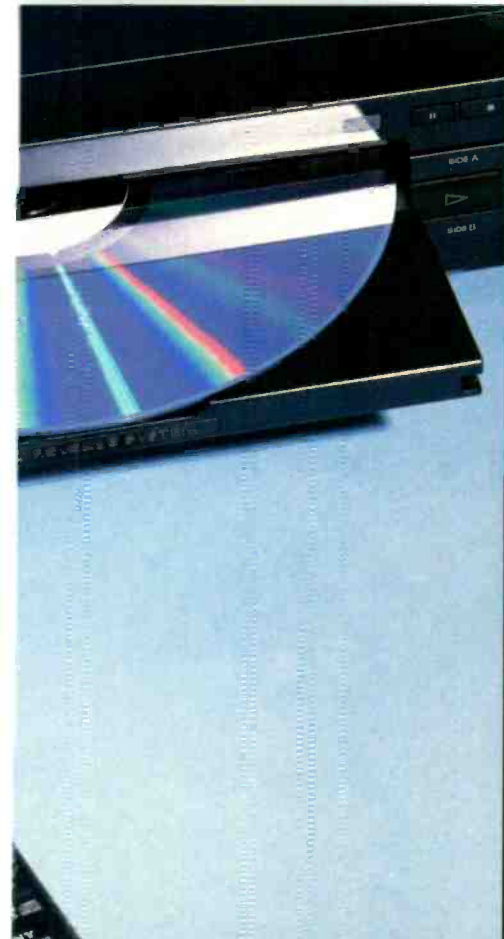
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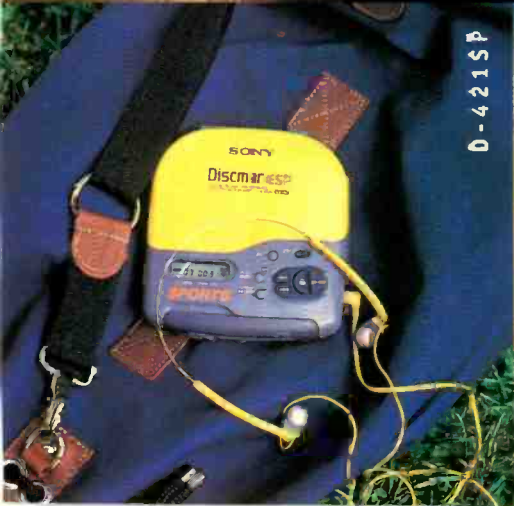


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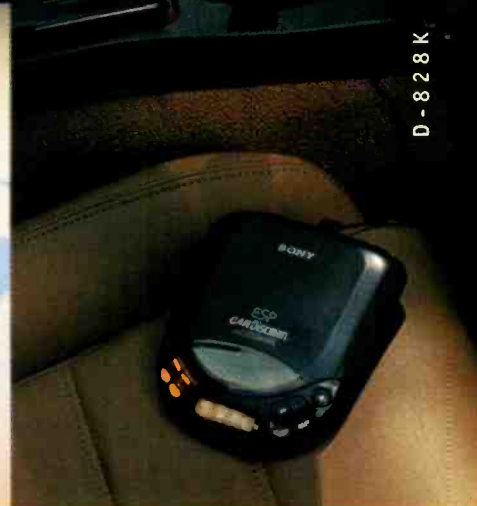
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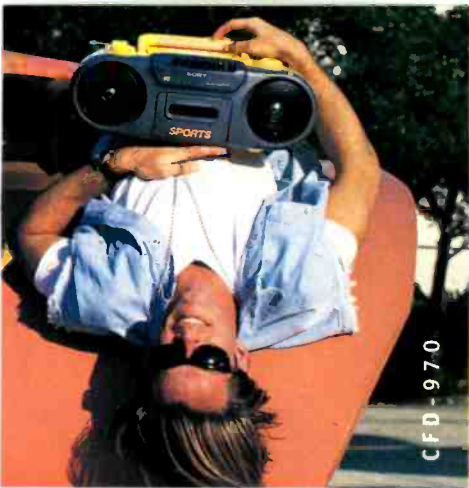
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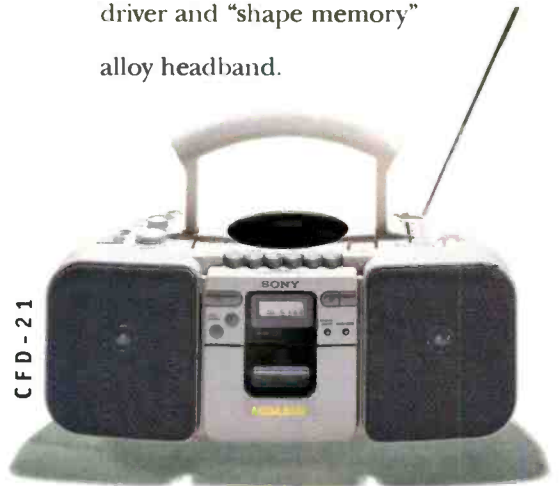
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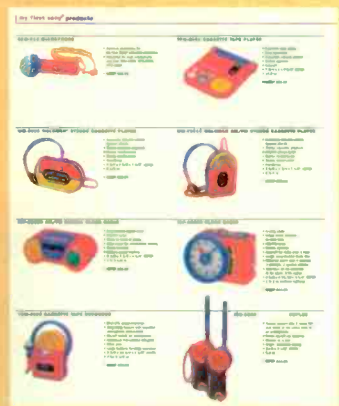
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JBL HT1 Home THX Speaker System

DAVID RANADA • TECHNICAL EDITOR

JBL produces several loudspeaker systems designed and constructed according to the strict specifications for home theater speakers established by Lucasfilm's THX division. Among them, the HT1 series is the least costly and elaborate. All of the HT1 speakers are finished in wood-grain black vinyl with dark gray grille cloths stretched over a removable frame. Connections for the series are multiway binding posts that accept dual and single banana plugs as well as spade lugs and bare wires.

Three HT1F's (\$425 each) are required in a home theater setup to serve as the front left, center, and right speakers. Each contains two 5-inch midbass drivers with laminated-polymer cones flanking two closely spaced 1-inch titanium-dome tweeters, all the drivers in vertical array to produce the wide horizontal and narrow vertical dispersions required of Home THX front speakers. Crossover frequency is 2.8 kHz. The tuned-port cabinet measures 17½ x 10 x 8½ inches. System impedance is given as 8 ohms and sensitivity as 87 dB sound-pressure

level (SPL) at one meter with a 1-watt input. (These two characteristics are actually controlled by THX specs and fall within a narrow range among different brands of Home THX speakers.)

The HT1F's port is on the back of the enclosure, but the customary internal tube is lacking—it's just a 1⅞-inch round hole. Not only can you look inside to see the backs of the drivers, the matted damping material, the crossover circuit, and all the internal wiring, but if you were to place the speakers away from the wall on stands (as you should for best imaging and frequency balance), one could easily get around to the back of the enclosures and stick things in that would muck things up. If you have young children, make sure they learn right away not to deposit small objects (especially metal ones) or household pets in these speakers. You want any verminous noises you hear to originate from a soundtrack, not the enclosure itself!

As THX surrounds go, the HT1D's (\$825 per pair) are rather bulky, measuring 13⅜ x 9¼ x 7¾ inches and

weighing 15 pounds each. They are perhaps best placed on strong shelves to the sides of the main listening position. The manual, in fact, contains strongly worded warnings against drilling into the enclosures to install wall-mount brackets (which JBL urges be done under the guidance of your dealer).

The HT1D's enclosures, which have grille-covered ports, house the same driver complement as found in an HT1F front speaker. Here, though, the drivers are paired off into a front- and rear-radiating quasi-dipole configuration, as required of all Home THX surrounds. Crossover frequency and rated sensitivity are also the same as for the HT1F, but the rated impedance is 6 ohms.

The ported enclosures for the HT1S passive subwoofer (\$525 each) are large (21½ x 25¼ x 17⅝ inches) and heavy (62 pounds). These are not the wimpy "bass modules" of a three-piece speaker system, designed to be easily hidden behind a piece of furniture. These subwoofers are pieces of furniture—no sub-sofa sequestration for them. The bulk comes partly from having to house a 12-inch polymer-laminate driver. A driver that size in such a large enclosure is necessary to meet the Home THX specifications for maximum low-frequency output. In fact, two of these subwoofers are needed to meet the THX specs. The HT1S impedance is given as 6 ohms, with a sensitivity of 91 dB SPL.

Figuring out how to hook up and adjust the HT1S if your A/V receiver has no speaker-level subwoofer output (which most don't) is not covered by the manual, which takes up only from after that point. It also, amazingly, offers no suggestions as to how to set the subwoofer level. That's not such a problem with THX A/V receivers or other high-end models that contain subwoofer-balancing test signals. But since the HT1 speakers can be profitably used with any well-powered A/V receiver or amplifier, not just Home THX models, and since non-THX units seldom include the subwoofer output in the Dolby Pro Logic test-signal sequence, some hints should have been given.

Aside from that neglected point, the manual is better than average for a home theater speaker system. For once the same brochure is provided with each speaker, so that the user doesn't have to perform mental collations to

figure out how the speakers should work together. Its only other significant fault is a lack of emphasis on how important it is for any Home THX front speakers to be set up with their acoustical centers (which in this case correspond to their physical centers) very close to seated ear level or, if that is not possible, for the speakers to be tilted upward or downward so that they are aimed right at your ears. Otherwise, you will not hear the correct frequency balance. That also means you should never draw conclusions about the sound of a Home THX speaker in a showroom if those conditions are not met (if you are standing up and the front speakers are lower to the floor, for example).

When set up properly, the system did its job extremely well, as has every Home THX speaker system we have reviewed. Tonal quality in stereo music listening was very neutral, with the good and bad sonic characteristics of the many various recordings auditioned faithfully conveyed. As with other Home THX systems, the imaging of stereo music recordings, not to mention soundtracks in surround-sound playback, was analytically precise, especially from the prime listening position. Because of the front speakers' deliberately restricted vertical radiation, which reduces the levels of reflections off the ceiling and floor, some might consider the system lacking in spaciousness, especially with music containing little inherent reverberation. But this characteristic also leads to very clear dialogue reproduction with soundtracks, which is one of the reasons for the restriction. In any case, the speakers did respond well to the use of a digital room-simulation ambience/reverberation system, as might be found in a high-end A/V receiver or surround processor.

The large subwoofers would have easily overpowered our listening room had they not been adjusted properly. Driven with enough power, a pair of them should be able to produce thundering levels even in larger rooms. In small rooms, you might be able to get by with one subwoofer, but then the JBL system might not meet the very demanding THX criteria for peak undistorted sound levels at low frequencies (which is actually too loud for many tastes). In our sound room, where the main and surround speakers were

driven from a Home THX receiver and the two subwoofers from a 100-watt stereo amplifier, the system played, cleanly, plenty loud enough for all types of music.

So far, these comments could apply to any Home THX speaker system we've tested. Such performance is practically guaranteed by the strictness of the design criteria and the testing and product-approval procedures established by Lucasfilm. But even the

Driven with enough power, a pair of JBL HT1S subwoofers should be able to produce thundering levels even in a large listening room.

THX requirements seem to be loose enough for each company to put an individualizing spin to its THX sound.

In reviewing JBL's HT1 system, I was able for the first time to directly compare under controlled conditions the performance of two Home THX speaker systems from different companies. Although there was a definite

family resemblance in their sound (precise imaging, clear dialogue, enveloping surrounds, solid bass), the two systems clearly sounded different, especially in stereo playback of broad-spectrum music. And that was after the application of careful level-matching and other fairness-promoting listening-test procedures.

The front speakers of the other system had, by measurement, a slightly rising high end and exhibited all the sonic characteristics one might expect from such a frequency response. The HT1F's one-third-octave response was very, very flat for a speaker (less than ± 1.75 dB from below 500 Hz to beyond 15 kHz). Sometimes the other system sounded more brilliant and forward, sometimes it produced an exaggerated harshness. Sometimes the JBL system sounded slightly rolled off and dull in comparison, but most times with good recordings it sounded just right. It all depended on the recording and even on the track within a disc.

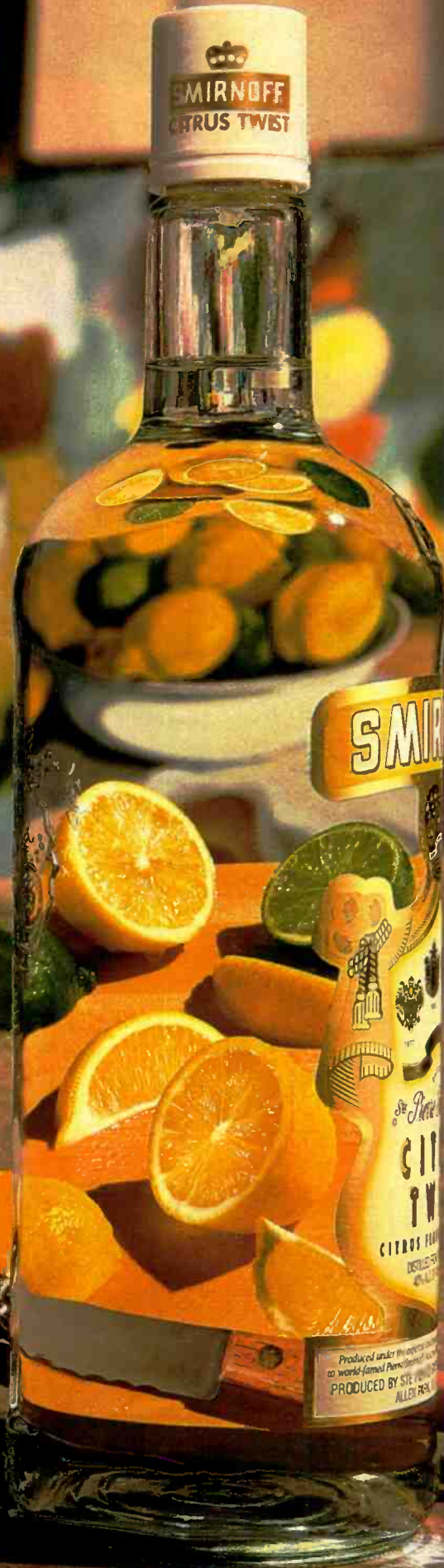
Moral No. 1: Don't ever base a speaker purchase on the sound of a small number of recordings. Moral No. 2: Although the Home THX design criteria have assured that the JBL HT system is a fundamentally excellent set of speakers for both music and soundtrack playback, you should still, as with any other speakers, listen before you buy. □

JBL, Dept. SR, 80 Crossways Park W., Woodbury, NY 11797



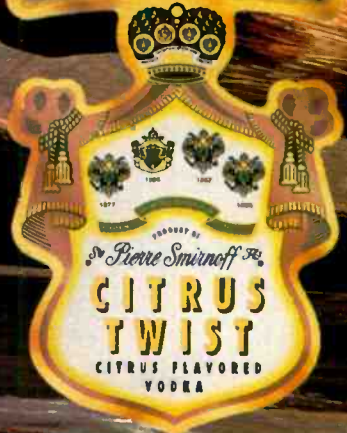
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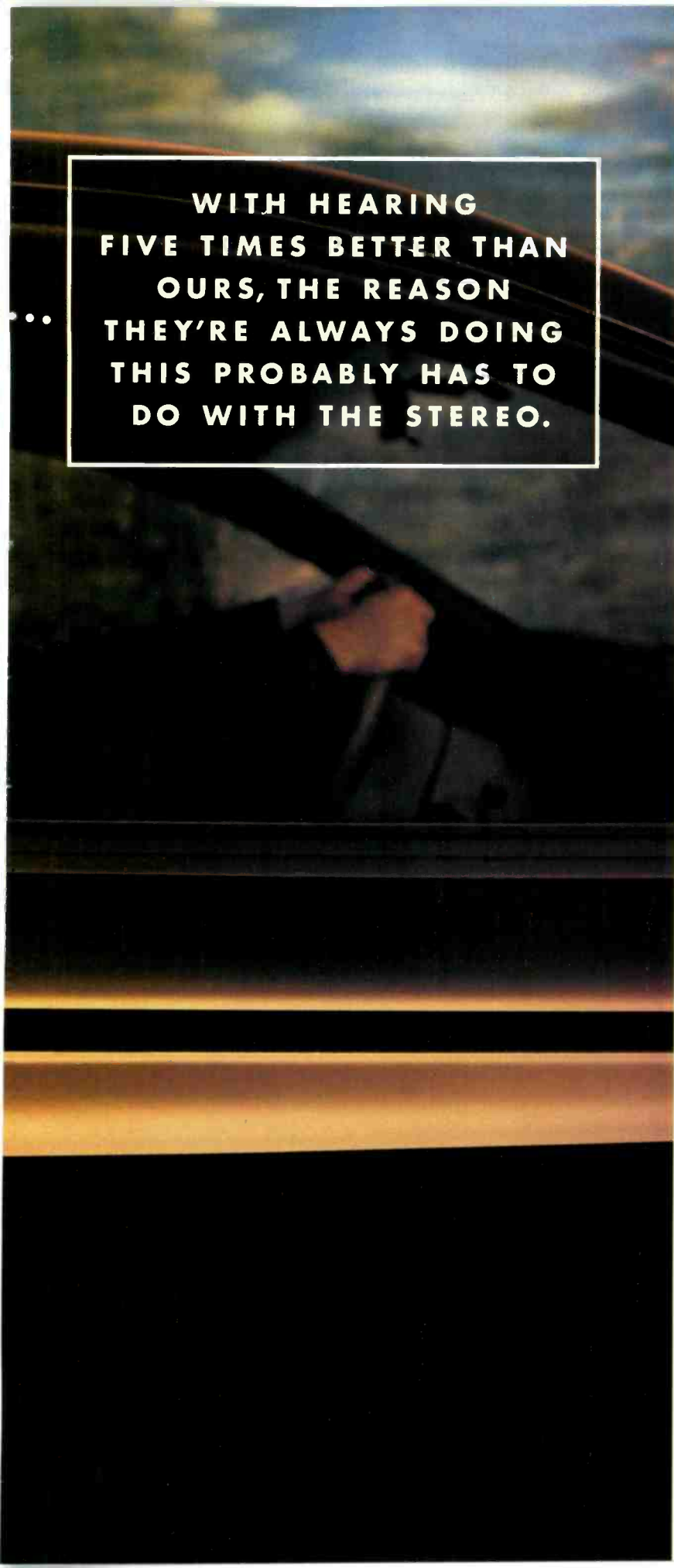
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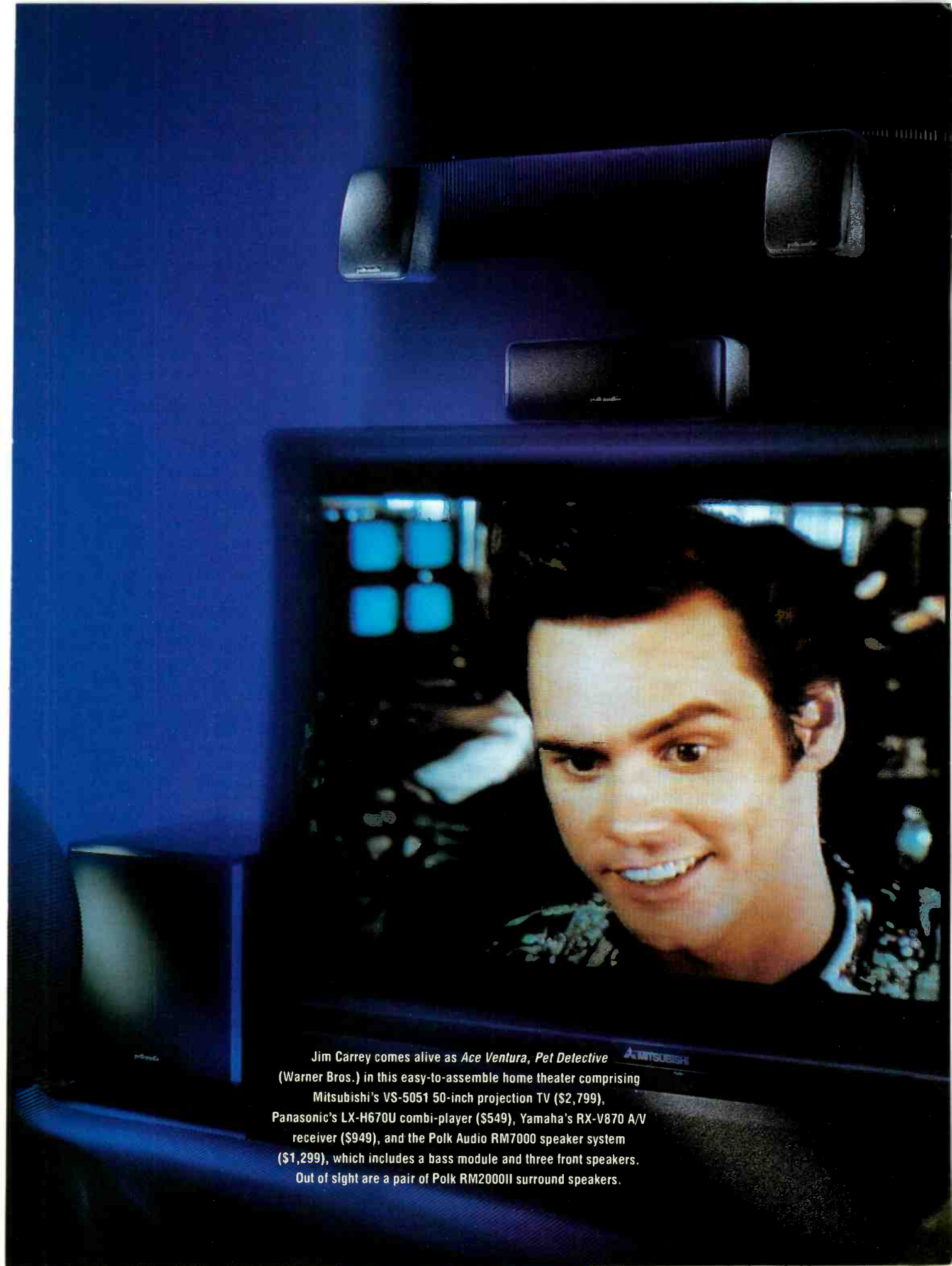
Donald Trump probably has a hell of a home theater. So, no doubt, do Bill Gates, Shaquille O'Neal, Mariah Carey, Tom Clancy, and lots of other rich people, including hundreds we've never even heard of. But what about the millions of ordinary folks like you and me? Aren't we entitled to cool surround-sound audio, big-screen video, and the thrill of real cinematic impact in our living rooms?

You bet we are: Isn't this the land of opportunity? You don't have to hire an acoustical consultant, an interior designer, and a custom installation specialist to en-



PHOTO BY ROBERTO BRONSON

B y D a n i e l K u m i n



Jim Carrey comes alive as *Ace Ventura, Pet Detective* (Warner Bros.) in this easy-to-assemble home theater comprising Mitsubishi's VS-5051 50-inch projection TV (\$2,799), Panasonic's LX-H670U combi-player (\$549), Yamaha's RX-V870 A/V receiver (\$949), and the Polk Audio RM7000 speaker system (\$1,299), which includes a bass module and three front speakers. Out of sight are a pair of Polk RM2000II surround speakers.

great surround processors and A/V receivers also include additional "am-

level of power that's probably unrealistic for the budget-bound. Fortunately-

Use It or Lose It?

Most of us have at least one pair of speakers—usually the ones connected to the stereo system. The question is, when you make the move to home theater, should you use 'em or lose 'em?

Obviously, you *can* employ almost any type of speaker somewhere in a home theater. But not all speakers are optimal for every surround-sound chore. If, for example, your current speakers are naturally balanced, full-range types—whether floor-standing or bookshelf—the most economical move may be to retain them in that position and simply buy a complementary center speaker and a pair of surround speakers. If your main speakers are a relatively recent design from a major manufacturer, you are quite likely to find a center-channel model designed to match them (more or less) in both tonal balance and dispersion pattern, two factors that help create a seamless and believable front “stage.”

If on the other hand, your current speakers are compact bookshelf types with limited bass response, then you might be better off moving them toward the rear of your seating area (ideally, on the side walls) and using them to reproduce the surround-channel information. Most compact and subcompact speakers do a credible job conveying surround information, which consists mostly of ambience and sound effects; broad, regular dispersion and a smooth midrange—two characteristics common to many such speakers—are more important than deep bass output or extended treble.

Of course, the possibilities are legion. For example, you might elect instead to keep a pair of small main speakers in place and buy both a matching center speaker and a powered subwoofer to augment them. Many manufacturers now offer both, designed to complement their current (and recent) bookshelf designs. The powered subwoofer should be able to supply the generous levels of deep bass that home theater demands, and as a fringe benefit will actually improve the performance of the main speakers (and front power amplifier).

For the surround channel, you would then be free to consider one of the many speaker designs specifically engineered to enhance “rear” surround reproduction. The variety is considerable, and growing every day, but the common goal behind most specialized surround speakers is to produce a diffuse soundfield that is difficult to localize by ear. Most of these (including all Home THX-certified models) employ a quasi-dipole layout with two opposite-facing woofer/tweeter pairs working out of phase. Others use a bipolar design in which the two driver complements work in phase.

Such purpose-specific surround speakers certainly contribute to the realism of the home theater experience, but at \$250 to \$500 a pair, they tend to be more expensive than conventional compact speakers—although less expensive models are turning up. One final note: surround speakers are very difficult to audition meaningfully, especially in a retail showroom, so make sure you get a home trial or exchange privilege with your purchase.

—D.K.

joy the fruits of the home theater revolution. (Of course, if you can afford to recruit the pros, all the better. But it's

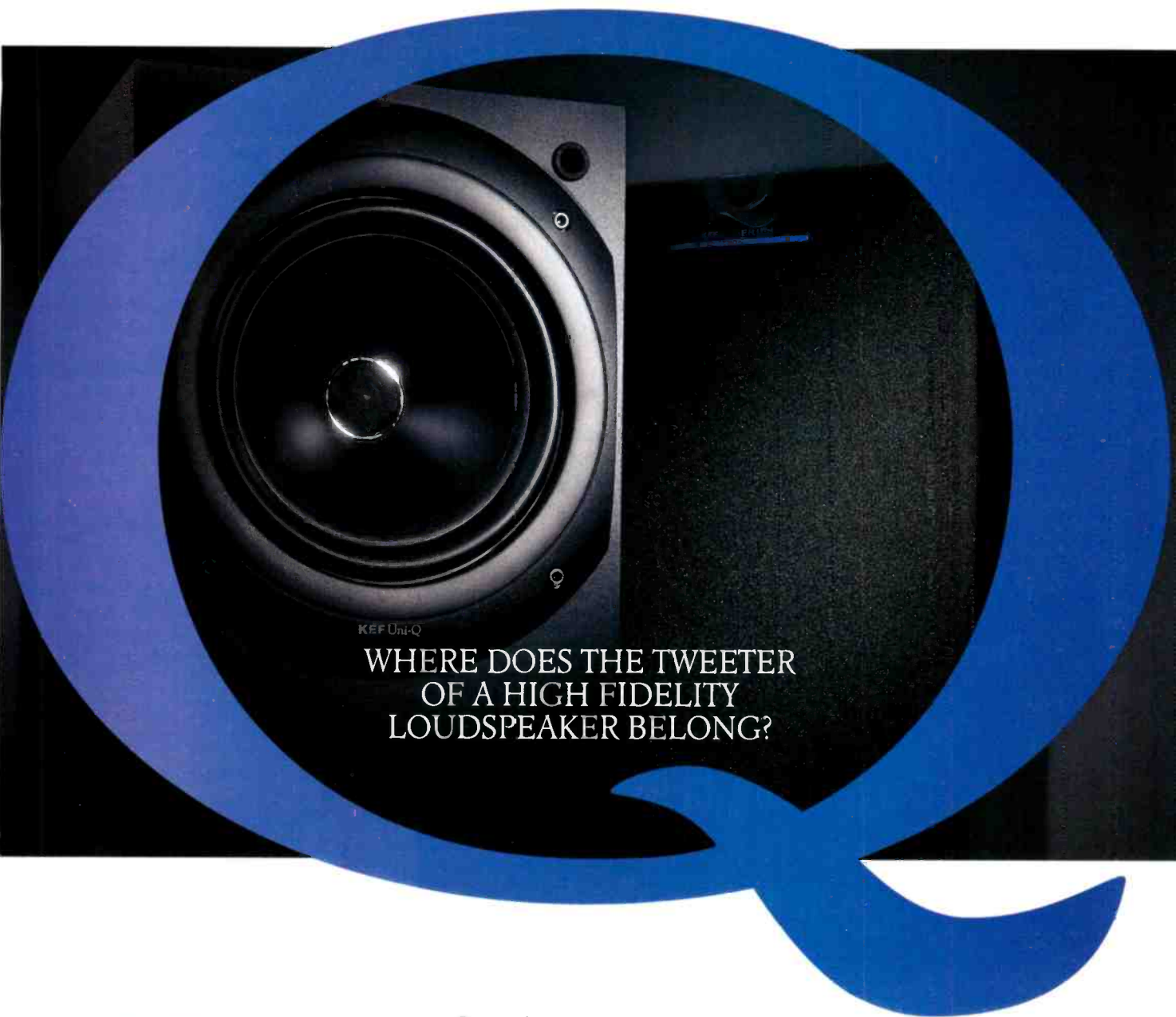
ly, the fact is that a midline A/V receiver (less than \$500) with 50 watts output to the front three speakers and 25 watts to each surround can provide enough dynamic range and impact in a typical living-room setting to satisfy most folks.

When it comes to maximizing the power you do have, here are a few things to keep in mind. First, the smaller the room or seating area, the less power you need to achieve clean theater-like levels (halve the distance from ear to speaker, and power requirements decline about fourfold). Second, look to efficient speakers—that is, models with an above-average sensitivity spec. A 3-dB increase in the sensitivity of a main speaker pair—from, say, 87 dB to 90 dB (typically measured at a distance of 1 meter with an input of 1 watt)—will cut your front-channel power requirements in half. Third, using a powered subwoofer—one that has its own built-in power amp—will reduce your front-channel power requirements by as much as a third or more.

The Road to Home Theater

At the nuts-and-bolts level, there are at least three ways to get the most bang for your home theater buck. First, assuming you already own an adequate two-channel stereo system, maximize your existing investment by adding only those components necessary to upgrade the system to multi-channel status. Second, upgrade your two-channel system in stages, with the goal being a complete surround-sound makeover. Third, start from scratch, laying all possible options on the table, and choose the path that makes the most sense.

Most of the several million “home theater” systems now in use across this great land no doubt began life as humble, two-channel hi-fi systems. That's because the add-on path is one of the most economical routes to home theater for anyone who already owns a basic stereo system. Pick up a center-channel speaker, a pair of surround speakers, and an outboard surround processor-amplifier, which includes amplifiers to power the center



KEF Uni-Q

WHERE DOES THE TWEETER OF A HIGH FIDELITY LOUDSPEAKER BELONG?

Q - S E R I E S

This question may confuse those who believe that the measure of a loudspeaker is the number of its drivers. It will also elude those who have never bothered to question conventional driver placement, which always separates the woofer from the tweeter.

In fact, the most acoustically correct location for the tweeter is precisely at the *center* of the woofer. This strategic placement creates a single sound source, allowing high and low frequencies to reach your ears at the proper time, regardless of where the speakers are placed or where you are sitting. (No wonder KEF's patented Uni-Q® is the technology of choice for advanced Home Theater applications.)

Perhaps the greatest benefit of the KEF Q Series speakers is that they sound as good in your home as they do in the showroom.





When it comes to movies at home, laserdiscs still offer the best picture and sound quality available today. Pioneer's CLD-M401 combines a laserdisc player, a five-disc carousel CD changer, and a karaoke (sing-along) machine in one \$770 component.

Most of the several million home theater systems now in use began life as humble hi-fi systems.

Add-on processor amps like AudioSource's SS Four (\$300) are designed to convert a two-channel receiver into an A/V receiver. The SS Four packs a Dolby Pro Logic decoder and two 24-watt amplifiers.



and surround speakers, and you're in business.

Processor amplifiers typically cost between \$300 and \$700 and are available from several manufacturers. All include a Dolby Pro Logic decoder and differ primarily in terms of power output and the number of ambience settings offered. To achieve a reasonable balance across the front speakers, try to pick a processor with a center-channel amplifier that puts out roughly the same wattage as your existing receiver or amplifier.

On the speaker side, the possibilities are endless. The most obvious route is simply to buy a center speaker and a pair of small surrounds and use your existing speakers as they stand. (A number of center speakers and surround pairs can be had for \$100 to \$300.) If your current speakers are small bookshelf models, consider moving them rearward to handle surround chores and buying a matched front-speaker trio, or possibly a four-piece home theater grouping incorporating a powered subwoofer (see "Use It or Lose It," page 88).

For those who prefer the upgrade-in-stages approach to home theater, instead of enhancing your current receiver or amplifier with an add-on processor/amp, simply replace it with a new A/V receiver, or separate components if your budget is more flexible. A/V receivers, which combine Dolby Pro Logic surround processing, five channels of power, audio-video switching and source selection, and an AM/FM tuner, pack all the electronics you need for a home theater in one box. There are dozens of models to choose from, with front-channel power ranging from 50 to 100 watts, in the same \$300 to \$700 price range mentioned earlier for add-on surround processor/amps.

Finally, there is the option of starting from scratch. There's a certain siren call to building a new system from the ground up, so if you do not already have a hi-fi setup,

Denon's lifelong philosophy of "Design Integrity" has led us to constantly improve audio quality in all phases of the reproduction chain—including circuitry for Home Theater. As a result, off-the-shelf IC components like those used by our competitors, are no longer good enough for Denon's AVR-2500 Audio/Video Receiver. The new Denon AVR-2500 features Dynamic Discrete Surround Circuitry, **D·D·S·C** which employs discrete surround circuitry plus an 18-bit digital converter in the DSP stage. (Most competitors use lower bit converters.)

DON'T COMPROMISE SOUND FOR SURROUND.



Just as discrete components allow an audio system to be optimized for better sound, Denon's DDSC produces more accurate, more realistic surround sound by reducing Total Harmonic Distortion, by increasing Signal-to-Noise and minimizing DSP quantization noise.



AVR-1500

Naturally, the Denon AVR-2500 also features the latest audio and FM circuitry, such as multi-zone capability for playing different programs in different parts of your home and personal memory fields for one-button recall of your favorite, custom tailored surround sound stages. The AVR-2500 and AVR-1500 also feature the RDS *Smart Radio System*, which lets broadcasters offer you additional, invaluable information, services and conveniences, either on the front panel or via On-Screen Display on the AVR-2500.



"SMART RADIO"

Denon AV Receivers: DSP surround sound, advanced features *and* uncompromised High Fidelity.

DENON
The First Name in Digital Audio



The videocassette recorder is still the video source used by most Americans, and if it's going to feed a home theater it should be a hi-fi model. Zenith's four-head VRM-4250HF VHS Hi-Fi deck (\$419) offers on-screen programming, a slow-motion playback mode, and VCR Plus recording.

or if the one you do have isn't worth salvaging, go for it. Starting with a clean slate gives you the most options, but it is also the way to incur the greatest expense.

A principal advantage of starting from scratch is the opportunity to select a fully matched suite of speakers. Most home theater experts agree that having "timbre-matched" front speakers, which maintain identical tonality for sounds from the left, center, and right speakers—or anywhere in between—is necessary to insure natural sound. Most major speaker makers now offer one or more home theater packages (many with a powered subwoofer), sometimes at a lower price compared to buying the constituent models separately. There are lots of packages to choose from in the \$1,000 to \$2,000 range, and if you're really looking to hold the budget line, a few makers offer A/V speaker ensembles for less than a \$1,000. Should you decide to follow the ultra-budget route, just be sure to audition the speakers carefully before buying.

There are lots of home theater speaker packages to choose from in the \$1,000 to \$2,000 range.

Another advantage to starting from scratch is that it's easier to assemble a system around a powered subwoofer when you're buying the bass module from the same company that makes the rest of the speakers. No need to worry about matching crossover points, etc., as would be the case if you were trying to integrate a third-party bass module with an existing system. All in all, speaker packages that incorporate a powered subwoofer are probably the most cost-effective (and space-saving) way to get strong, near-theatrical-quality bass performance.

Finally, the clean-slate approach to

Carver's C-15v A/V preamp (\$800) is designed to serve as the control center in a separates-based home theater system. It provides Dolby Pro Logic decoding, five ambience modes, and switching for three video and five audio source components.



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—Leonard Feldman,
*Audio Magazine**

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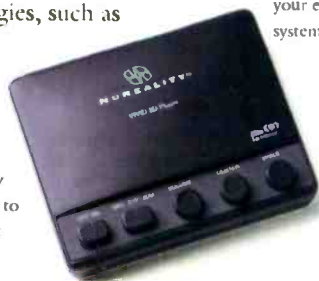
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Center brings up the information in the center of a recording, such as a lead soloist or vocalist.

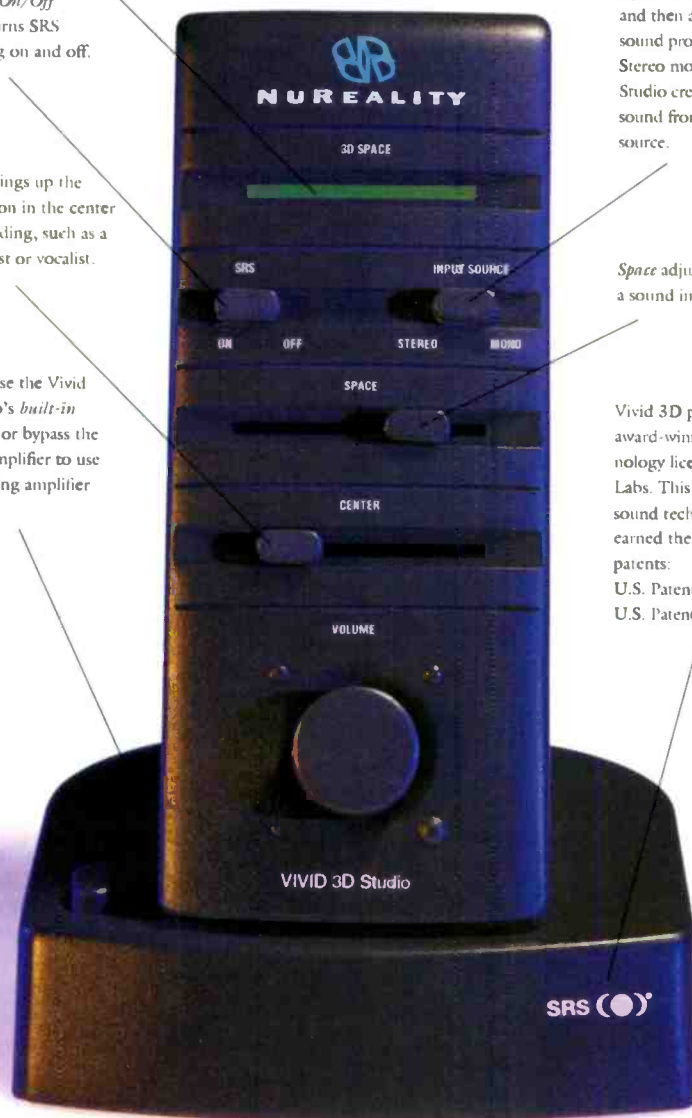
You can use the Vivid 3D Studio's *built-in amplifier*, or bypass the internal amplifier to use your existing amplifier system.



The *Input Source* control lets you select Mono when using mono audio source material, and Stereo for stereo source material. In Mono mode, the Vivid 3D Studio synthesizes a stereo signal from a mono source, and then adds SRS 3D sound processing. In Stereo mode, the Vivid 3D Studio creates SRS 3D sound from a stereo source.

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Vivid 3D products employ award-winning SRS technology licensed from SRS Labs. This leading-edge sound technology has earned the following patents:
U.S. Patent No. 4,748,669
U.S. Patent No. 4,841,572



*This specially recorded CD recreates the experience of 3D sound from any CD player. The demo CD is available for a \$5.95 shipping and handling charge which can be fully credited toward the purchase of a Vivid 3D system. This offer applies only to Vivid 3D products purchased directly from NuReality. International orders do not include freight charges, duty or VAT.

*Quote excerpted from a review of the **SRS (●)®** technology from the April 1992 issue of *Audio Magazine*. The Vivid 3D sound enhancement system won the Retail Vision "Best Product" award in May 1994, and the Innovations award from the International Consumer Electronics Show in June 1994. © 1994 NuReality. All rights reserved. SRS is a registered trademark of SRS Labs. All product names are trademarks or registered trademarks of their respective holders. SR2



A growing number of manufacturers are offering affordable home theater speaker packages. Klipsch's \$999 lineup includes four KG.5 bookshelf speakers, the KV 1 center speaker, and the SW.8 powered bass module, featuring a 65-watt amp.

hi-fi videocassette recorder or a laser-disc player.

There's one more full-system option to consider: Integrated home theater systems that include fully powered subwoofer/satellite speaker systems and dedicated surround-sound decoding components are available from a handful of manufacturers, including Bose and Bang & Olufsen. Such systems deliver turn-key home theater sound in extremely compact and, in some cases, elegant packages.

And then, at the top of the home theater food chain, are high-end separate-component-and-speaker sets, including several carrying Lucasfilm's Home THX certification, an elaboration on standard Dolby Pro Logic processing designed to make soundtracks mixed for theaters sound more natural at home.

One advantage of starting from scratch is the opportunity to select matched speakers.

home theater gives you the option of considering an all-in-one, "turn-key" solution. One of these is the home theater "rack system." That's right, a *rack system*. There's a whole new generation of Dolby Pro Logic-equipped racks with five speakers, powered subwoofers, and all the surround-sound accouterments offering a cost-effective way to buy into home theater with minimal shopping and fuss. Complete surround-sound racks range from just over \$1,000 to something more than \$2,000—including CD and cassette source components. Many of these systems also offer enticements such as

"free" furniture, matching TV options, and integrated remote-control features. Traditionally, the weakest link in rack systems has been the speakers—and it can be a *very weak* link—so audition them carefully before buying.

Of course, another all-new home theater solution is the conventional component system. Your local audio-video salon will be only too happy to help you select a home theater speaker suite, an A/V receiver with appropriate power (or a group of separate power, processing, and control components), and any source components and accessories you might require, including a

Whichever route to home theater you ultimately travel, the basics of good performance remain the same—and don't necessarily demand a mink-stole budget. Seek accurate Dolby Pro Logic decoding over flashing lights and extra features or modes, naturally balanced front speakers (preferably including a tonally matched center speaker), wide-dispersion surround speakers, and adequate power for your room, speakers, and listening habits. Whether you're upgrading or starting anew, be sure to brace yourself for theater-like sound at home—you may never go out to the movies again. □



Most speakers that call themselves multi-media don't even deserve to be called speakers, while the hi-fi speakers worthy of their name won't function or even fit in most surround sound, home theater, computer, MIDI or mini system applications. Celestion solves this dilemma

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

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Loudspeaker placement is a big, scary skeleton in the hi-fi closet. I've lost count of the number of times I have been called in to help set up stereo systems in which everything was negotiable—"except the speakers have to go here, behind the couch." Sad, but true.

But now maybe there's some hope of finally getting that closet cleaned out! Among the various benefits of the home theater boom has been the encouragement of rational speaker placement. We often choose to hide or blend a stereo pair of speakers into the decor no matter what the sonic consequences. In home theater, on the other hand, near-optimal speaker placement seems downright natural. We're willing to sit in front of the screen and, as important, to put a center speaker on top of the screen, the mains to either side, and the surrounds to the sides or behind us. Indeed, if you don't start out with at least the front speakers placed correctly in a home theater installation, you'll probably find the discord between what you hear and what you see on the screen so annoying that you will quickly set about putting things right.

Because the TV screen usually takes up a lot of floor space, we tend to put it along a wall and move our seats well into the room to maintain a clear line of sight to the action. That further cleans up the sound by keeping listeners well away from nearby walls.

Home theater also encourages the use of separate bass speakers, because practically every blockbuster movie has a bombastic soundtrack filled with planes, trains, and explosions. Most A/V receivers and processors now have dedicated subwoofer outputs. Breaking the bass out of the main speakers offers further opportunity for sound optimization through independent placement of low-frequency reproducers.

Which brings us to subwoofer placement. We have a decent set of rules for placing center, left, right, and surround speakers, but myth, half-truth, and confusion reign when it comes to subwoofers. Just ask anybody. You'll get conflicting answers about where to put them—"in a corner," "anywhere but in a corner," "between the left and right speakers," "anywhere you want"—and lots of advice about why you'll need more than one, why they should be stereo, and why all your speakers, even the surrounds, should produce full-bandwidth low frequencies. Heck, some people question whether it's even possible to reproduce really deep bass in a normal-size room.

One reason behind all the controversy is that analysis has



SUBWOOFER SECRETS

**The lowdown on getting the most out
of your bass box**

by Tom Nouseine

been historically limited by the size of the reproducers and the availability of measuring equipment. Big woofers (my fifteen-year-old custom 18-inch sub, fed by a separate electronic crossover and 250-watt power amplifier, displaces 25 cubic feet net internal volume) do not encourage casual experimentation. Further, even though the theory and math for acoustical analysis at low frequencies in rooms seems easy enough, the sound patterns actually generated have always seemed to defy prediction.

Now, however, the emergence of rationally sized and priced powered subwoofers with sophisticated electronic crossovers, together with portable, PC-based, acoustical measurement equipment, gives us an opportunity to build maps of response versus placement in real rooms with real subs. With that data in hand, we have a foundation on which to establish practical guidelines for placement of dedicated low-frequency speakers.

We conducted our analysis by carting an ADS M3 pow-

ered subwoofer and a MLSSA PC-based acoustical analyzer around to seven separate listening rooms and charting a map of actual responses for typical subwoofer placements. The basic setup entailed placing the subwoofer in two to three typical listening positions and then moving the microphone to probable subwoofer locations and recording the frequency response. (That may sound backwards, but it actually gives the same results as putting the mike at the listening positions and the subwoofers where they normally would go, and it was more convenient.)

We also wanted to investigate the benefits, if any, of multiple subwoofers and stereo bass. For that purpose we used a pair of identical Klipsch SW12 powered subwoofers in a simple high-quality stereo system that included Snell Type K/II main speakers, a Bryston 4B power amplifier, a Denon DCD1290 CD player, and a Marantz DAT deck.

So what do we need to know? First: Is bass possible? Is there any truth to the idea that a room can be too small to reproduce the long wavelengths characteristic of deep bass? Second: What effect does the crossover frequency have on where a subwoofer should be placed? Third: What about multiple subwoofers? Are two better than one? Is stereo necessary at low frequencies? And finally: Are there optimal locations or, contrariwise, locations to avoid? What rules and procedures will work most of the time?

Is bass reproducible in small spaces? Right up front, let's dispense with the notion that really deep bass is unattainable in normal living rooms. You may have heard that such a room won't support very low frequencies because their wavelengths (almost 60 feet at 20 Hz) are too great. But if that were a true principle, you could never hear any bass through headphones (which are tiny individual listening rooms for your ears) or in a car.

It is true that generating low bass is one of the most difficult tasks a loudspeaker faces and that standing waves (resonances) related to room dimensions complicate matters, but there are compensating factors that work in our favor. The room boundaries (floor, walls, and ceiling) that create standing waves also reinforce low frequencies, especially at frequencies *below* those at which standing waves can form in the room. In an automobile, that point is reached at about 60

until you hear telltale high-frequency sounds. Few recordings have true stereo information at very low frequencies, anyway, and a couple of experiments convinced me that stereo reproduction of those frequencies is not an important factor for high-quality sound even for the ones that do.

In the first round of experimentation I used three listeners in two setups and three individual sessions. In the first two sessions, identical stereo Klipsch subwoofers were placed directly outside the left and right main speakers at the floor/wall junction, while a third, mono, ADS sub was located at the back of the room, behind the listener and 2 feet from the left corner. In the third session the stereo subs were used as stands under the main left and right speakers and the mono sub was placed directly behind the listening couch. In both cases the stereo setup was adjusted for best balance and then the mono sub was adjusted for as close a match in frequency response as possible. The crossover frequency for best balance was 80 Hz. The front woofers were draped with acoustically transparent cloth.

Listeners were told two woofer "alignments" were being compared. I gave them a two-position switchbox; a CD with ten bass tracks, the last three of which were organ and choir in a large, reverberant cathedral, full orchestra, and thunder-clap and organ, all verified to contain out-of-phase (stereo) low-frequency information; and a score sheet rating the systems on spectral balance, low-frequency extension, dynamics, and rendition of ambience and spaciousness.

None of the listeners heard significant differences between the systems in spatial reproduction or ambience, the characteristics most often cited as benefiting from stereo bass, and all three, without knowing which was which, picked the mono setup as sounding more natural overall when forced to choose. All were stunned to learn that there was a speaker playing behind them at any time during the tests.

In a subsequent experiment we used a variety of test signals (sine waves plus wideband and filtered pink noise) and music (bass drum and organ) especially chosen by STEREO REVIEW Technical Editor David Ranada to highlight any audible differences between mono and stereo subwoofers. This time we used only the two identical subwoofers, placed underneath the main speakers, and alternated between running them in stereo and mono. The two listeners in these sessions were unable to identify any improvement from the stereo

With a low crossover, a mono subwoofer is better than stereo subs.

Hz, which helps explain why many car systems thump so loudly. It also helps me understand why my voice sounds so deep when I sing in the shower stall.

In my 2,136-cubic-foot living room these factors combined to produce a minimum of 6 dB reinforcement below 25 Hz for even the worst subwoofer locations. With the subwoofer optimally placed, reinforcement averaged 6 to 7 dB between 20 and 60 Hz and rose to 12 dB below 20 Hz. In smaller rooms, the reinforcement is even greater, so there's no question that you can make very loud sounds at very low frequencies in your home.

Do we need stereo bass? That is, will separate left and right subwoofers improve the sound? In a word, no. Low frequencies are difficult to localize under normal circumstances. If you close your eyes at the station you won't be able to tell which direction the train is approaching from

configuration in spaciousness, imaging, or naturalness when the crossover was at 80 Hz or lower.

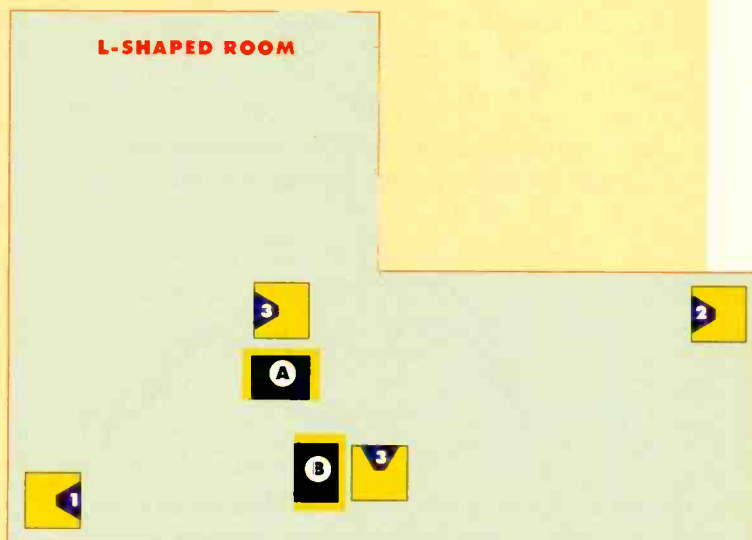
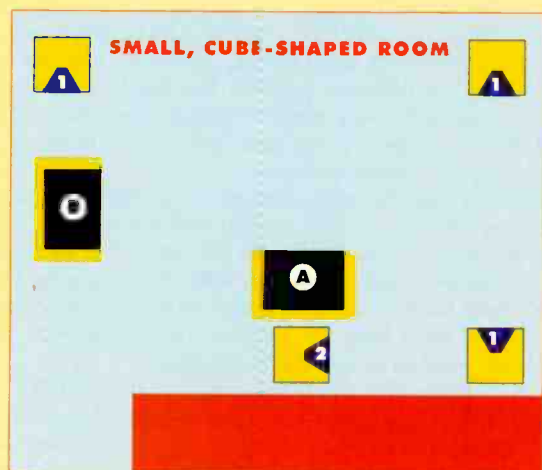
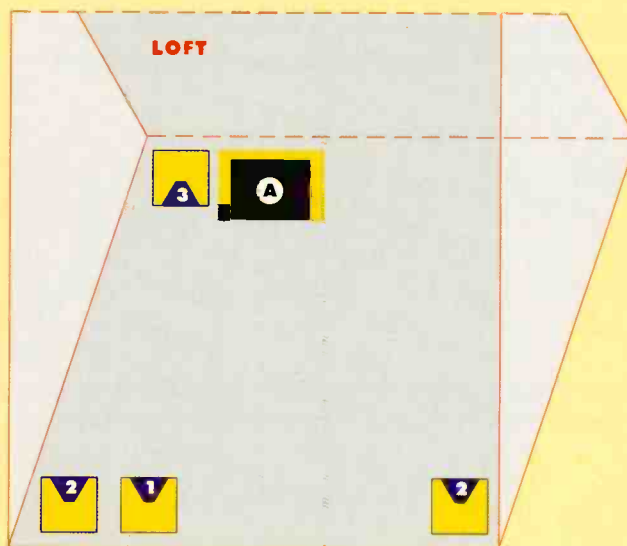
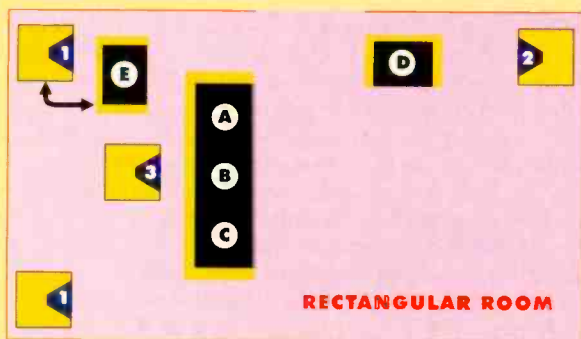
Switching between stereo and mono was plainly audible on headphones and when the main left and right speakers were used, but only because of higher-frequency effects. The differences disappeared when the subwoofers were played by themselves, even though measurements disclosed an increase in low-frequency notching when the subwoofers were switched to stereo (caused by comb-filter interference between their outputs).

What is the best crossover frequency? How about frequency division? We have all heard that bass is nonlocalizable, but how far down do you have to go before that becomes true?

I conducted a series of individual experiments. First, I placed the ADS subwoofer directly behind my couch, then

THE BEST SUBWOOFER LOCATIONS

In all rooms, the positions with best response (1) were in or near corners. In the cube-shaped room, excessive output from 60 to 80 Hz necessitated the use of a low crossover point (below 60 Hz). Second- and third-best locations (2 and 3) are also indicated. Letters (A-E) show the listening locations that were evaluated.

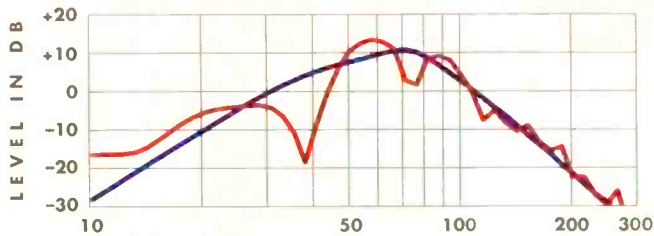


THE TEST ROOMS

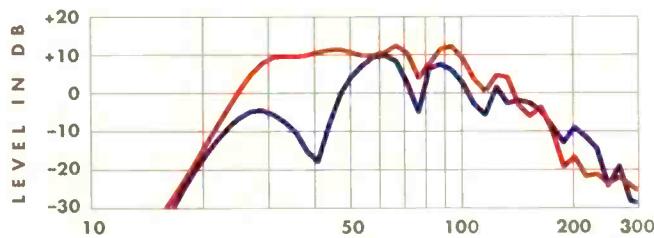
	R	L	R	L	R	R	Loft**
Basic shape*	R	L	R	L	R	R	sloped
Height (feet)	8	8	8	8	8	8	22
Length (feet)	22	27	20	20	14	12	15
Width (feet)	12	13	13	15	11	11	1,848+
Volume (cubic feet)	2,136	3,349	2,278	3,024	1,232	1,056	one
Doors	large	one	two	large	one	one	one
Other openings	no	no	window	landing	no	no	no

* R = standard rectangle; L = L-shaped (adjoining spaces included in size figures).

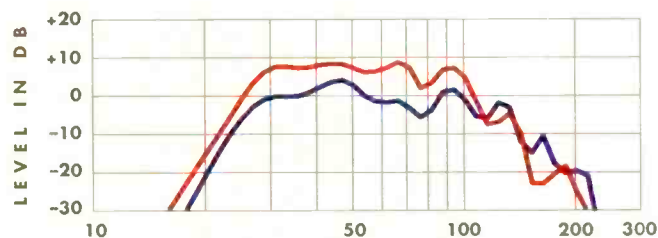
** Approximate overall acoustic space roughly three times the basic listening area.



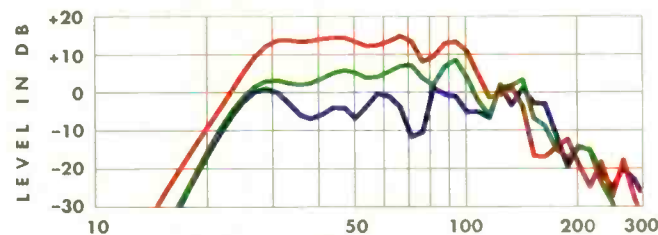
Near-field response (blue) vs. next to a doorway (red): A response notch developed when the subwoofer was placed near an open door.



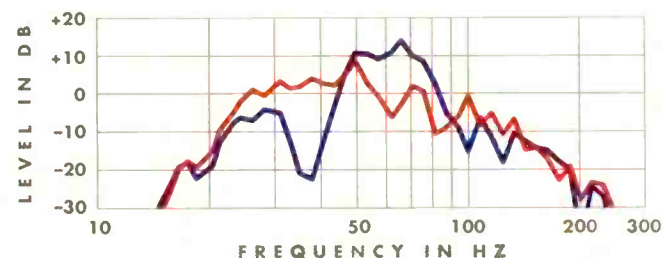
Corner placement (red) vs. next to a doorway (blue): Output was more extended, flatter, and stronger when the subwoofer was in a corner.



Two subs in the same corner (red) vs. two in opposite corners (blue): Two subs in one corner delivered more output.



Two subs in one corner (red) vs. two near the listener (green) vs. two in the "best possible" separate locations (blue): Output was flatter and stronger when the subs were near the listener or, better, in a corner.



Two mono subs (blue) vs. two identically placed subs with one driven 180 degrees out of phase with the other to simulate stereo (red).

reached behind and adjusted its crossover control until I was unable to discern that any sound was coming directly from the sub. I then measured the effective crossover frequency, which turned out to be 80 Hz.

I also switched between a centered mono sub and an identical one placed well to the left of the left-channel speaker while adjusting a variable electronic crossover. With the main speakers turned off, I was able to distinguish the subs' locations with crossover frequencies down to 40 Hz, but with the main speakers on the difference remained inaudible, as in the first experiment, up to an 80-Hz crossover with a slope of 6 dB per octave or greater. At 100 Hz the difference was quite noticeable with a 6-dB-per-octave crossover but barely audible when the slope was increased to 18 dB per octave.

It appears, then, that Lucasfilm chose wisely in setting the THX subwoofer crossover frequency at 80 Hz: A crossover at that frequency or lower will probably never betray itself. And if steep slopes are used, crossovers up to 100 Hz should be fine most of the time. Our experiments do suggest, however, that minimizing sonic compromise may require more care in placing the bass modules of typical subwoofer/satellite systems than is commonly supposed. Most such systems have crossovers in the range of 150 to 200 Hz.

Where should I put my subwoofer? Four of the seven rooms I investigated were typical of the modern family/media room: two rectangular and two L-shaped, all moderately decorated with plenty of reflective drywall and glass surfaces. Three had fireplaces, and one had a short angled wall. Of the remaining three rooms, one was a loft that was open behind the listening position (no floor or wall) and flanked by symmetrically sloped ceilings. Two were small, more cubically shaped rooms, more typical of a bedroom or a living room in a small apartment.

Surprisingly, all the spaces had much in common acoustically at low frequencies. The smaller rooms had nearly 9 dB of reinforcement below 25 Hz for all subwoofer locations, while the others ranged from 4 to 6 dB depending on size. All had room modes—peaks and dips in frequency response—roughly aligned with the longest room dimension that were clearly evident in suboptimal positions.

Ideally, a subwoofer's performance should have three basic characteristics: (1) deep bass response, extending downward in frequency as low as possible; (2) as much output as possible for a given amount of amplifier power (high sensitivity); and (3) smooth, flat response over its range, free of notching and irregularities. Our hearing acuity is relatively poor at very low frequencies, so a system's overall tonal balance tends to dominate response anomalies that are confined to the bottom octaves. Accordingly, extension and output are the most important factors.

What I learned from my room-response measurements and other experiments can be boiled down to ten basic findings:

- 1 Subwoofer locations away from walls and near openings, such as doors, delivered the worst results, with response irregularities from room modes clearly evident. Extension and overall acoustic output was clearly inferior to that obtained in better locations. Contrary to what one might have expected, then, coincident location of subwoofers and main speakers will usually be undesirable. And avoid doorways with a passion!
- 2 The best place to put a subwoofer is usually in a corner, unless it adjoins a doorway or another opening. Driving all the room modes (length, width, height, oblique, and tangential) simultaneously delivers the smoothest, deepest frequency response with maximum boundary reinforcement. The re-

sponse of a subwoofer improves steadily as you move it into a corner of a room.

Woofers are often thought to sound boomy in corners, but that's probably just because of the output elevation (as much as 12 dB) relative to placement away from boundaries. The frequency response is actually flatter and deeper. So if a subwoofer sounds boomy in a corner, simply turn down the level. The corners nearest the listener are the best, providing the most gain. In most cases, that means using the rear wall will deliver better results than using the front wall.

These results also indicate that multiple distributed subwoofers typically cannot be used to "smooth out" room modes. Corner placement excites all modes maximally, and adding more sources in non-corner locations can only introduce response notching through destructive interference.

The best place to put a subwoofer is almost always in a corner.

That may yield a pleasing overall balance in some cases, but it seems better to attain it directly by reducing the amplifier output to a single corner woofer.

3 If you have two subwoofers, put them both in corners—preferably the same corner, where the drivers will reinforce each other maximally. My measurements show that low-frequency outputs combine for 6 dB of gain when subwoofers are placed next to each other along a side wall but produce only 4.5 dB of gain when placed along opposite walls. Likewise, two subwoofers placed in the same room corner delivered over 6 dB more output than two placed in opposite corners. A corollary is that a single large subwoofer will usually be better than two small ones because the larger one will usually deliver more output with lower distortion.

I was able to produce a special case—one corner subwoofer and one midway along the wall—in which two staggered subs produced a wide, flat response, but simply lowering the level of the corner subwoofer provided an equivalent solution, as did placing the second woofer in the near field of the listener. In the two smallest rooms (and the sloped-ceiling loft), all locations, including the corners, tended to yield excessive output between 60 and 80 Hz. But all two-sub, non-corner placements simply induced notching at lower frequencies, leaving the peak intact. The best solution here is to put the subwoofer in a corner and lower the crossover frequency far enough to attain the proper overall balance.

4 Use an 80-Hz or lower crossover and listeners will be unable to localize the subwoofer output with normal program material. If you have a three-piece system with a higher crossover frequency and a fixed output level to the bass module, you may need to place the woofer between the satellites along the front wall to maintain proper balance and avoid image shifting. Locate it as near to a corner as possible without upsetting the balance with the satellites.

5 Near-field placement, with a subwoofer right next to the listener, offers a decent, well-balanced alternative, but wall-boundary reinforcement will be lost, so your amplifier may need to be bigger. Listeners seated near a wall get additional reinforcement at low frequencies, so if one listening position is closer to a wall than the others a second near-field woofer for that location may enable proper tonal balance at all listener locations.

6 Surround speakers will never need response below 80 Hz. Although some soundtracks do exhibit lower-frequency

information in the surround channel, it is entirely redundant with the bass content of the front left and right channels, so as long as your main speakers or your subwoofer have adequate output below 80 Hz, "surround bass" is unnecessary. And that will remain true even after discrete-channel digital surround becomes available in the home, since any deep bass in the full-range surround channels can be reproduced by other speakers (normally a subwoofer) without altering the system's imaging or other spatial characteristics or otherwise adversely affecting the sound.

7 Always employ mono subwoofers when you can cross over below 100 Hz. Stereo is imperceptible at such low frequencies (be sure to disconnect the main speakers if you decide you want to confirm this finding for yourself, so you're not thrown off by their midbass output), and driving the sub-

woofers with out-of-phase stereo signals can only make things worse. And by the way: If you *do* have surround speakers with extended bass response, make certain that their polarity is matched to that of the subwoofers to avoid response notching from interference.

8 Seating away from walls delivers the best overall sound over most of the frequency range. I found that different listening positions had somewhat different low-frequency response patterns, but all of them were optimized with corner subwoofer placement.

Seats near walls, however, especially the rear wall, got extra bass output, making it difficult to get an overall balance identical to that at midroom seats. Placing another woofer in the near field of a near-wall listening position may give you a shot at obtaining similar balance at all locations.

9 The sloped-ceiling loft was the only room in which deep-corner subwoofer placement failed to produce the flattest, deepest response. There, corner placement yielded excessive output between 50 and 80 Hz; a location approximately 2.5 feet from the corner delivered the flattest response. Again, a perfectly good alternative is to use the corner with a lower crossover frequency.

10 Installing a subwoofer in a wall is not a bad idea as long as you avoid affixing the drive element itself to the wall surface. Regular in-wall speakers have falling response below about 100 Hz because the drywall itself begins radiating out of phase with the speaker, and the same thing will happen with an in-wall sub unless care is taken to prevent it. Just increasing the drive to a wall-mounted sub will not fix the problem, because at high levels the drywall will merely begin to rattle loudly, and if the volume is high enough it will knock pictures off the adjoining wall in the next room. The sound transmitted into adjacent rooms also becomes quite loud. A subwoofer buried in the wall can work well as long as the driver has its own enclosure and is well isolated from the wall surface. As usual, try to put it near a corner.

The recipe for good, satisfying bass is pretty simple. For best results, place a single mono subwoofer in the corner nearest the listener, dial in an 80-Hz crossover, and balance level to taste. For variety, use extra mono woofers close to difficult listening positions. Season to taste. Serves high-quality bass for both home theater and music listeners. □

Miami Blues

When Carlos Sanchez returned to his Miami home after Hurricane Andrew ripped through southern Florida in April 1992, half of the roof was missing, the 1-inch plywood that had covered the windows was gone along with the glass, and the garage door was off its hinges.

"It was pretty horrific," recalls the forty-one-year-old computer professional. While surveying the damage



with his wife, Kathy, Sanchez found a piece of sheetrock resting on top of his entertainment center. "Luckily, it sheltered most of my audio equipment from most of the water. My uncovered TV and VCR didn't fare as well—they were both trashed."

Among the components that he was able to salvage were a seven-year-old Onkyo Integra TX-108 receiver, a beloved Nakamichi CR-7A cassette deck, a BSR EQ-3000 twelve-band equalizer/analyzer, and a treasured pair of Polk Audio RTA-11T three-way tower speakers. "I've bought other speakers over the years," Sanchez notes, "but I always end up returning them because the Polks sound better." Considering the rush of wind and rain that sprayed Sanchez's living room, it's a miracle that anything survived.

The couple lived with Kathy's parents for eight months while their house was being rebuilt. Since the

only sound system they had access to was an old Garrard radio/cassette/phono combo, Sanchez would "escape" to his Ford Explorer every now and then to listen to the radio (which he says sounded a lot better than the Garrard system), hoping to catch a Kenny G song or maybe a classic from the Doors, his all-time favorite band. There he dreamed about how he would reassemble his system—and upgrade it with the insurance money. It was going to be swell.

But his dreams soon turned into a nightmare. "A couple of weeks after we moved back into our house, the cable-TV guy was running a line to my spare TV, which I had connected to the salvaged audio components. I heard a crackle and a yell, and the next thing I knew all of my components were zapped—the whole system! There was live AC current in the cable line!"

To make a long story short, Sanchez shelled out almost \$3,000 to have everything fixed (he was later

reimbursed by his insurance company) and used some of the insurance money from the Andrew disaster to transform his modest A/V setup into a \$9,000 home theater.

Over a six-month period, Sanchez built the new system around a Panasonic CTP3180SF SuperFlat 31-inch TV. He chose Adcom's GSP-560 surround processor/amplifier to complement the Onkyo receiver's two 100-watt channels. In addition to an 80-watt amp for the center speaker and two 40-watt amps for the surround speakers, the GSP-560 brought Dolby Pro Logic decoding and a handful of ambience modes to the party.

Not surprisingly, Sanchez stuck with Polk speakers. He picked up two CS350LS center speakers (one for each side of the TV) and a pair of AB-705 in-walls to handle surround chores. For now, only one of the centers is hooked up. "There was exactly



enough space on each side of the TV for one speaker standing on end—which Polk says you can do—so I bought another one to give the system a custom look," Sanchez explains. The in-walls are mounted behind the sofa about 8 feet from the floor.

To bolster the video side, Sanchez bought a Pioneer CLD-M90 combi-changer, which in addition to playing laserdiscs boasts a five-CD carousel and two Sony hi-fi VCR's, an SLV-R1000 Super VHS deck for primary viewing and an SLV-900HF regular

PHOTOS BY DAN FORTER



VHS deck for dubbing or recording a program if two good shows happen to be on at the same time.

On the audio side, he added a Nakamichi MB3 Musicbank seven-disc CD changer, an RCA WHP-101 900-MHz wireless headphone system, and a Denon DP47F turntable with an Audio-Technica ATLM170 phono cartridge. "Turntables aren't going to be around much longer, so I figured I'd get a good one before they disappear," Sanchez says.

Everything is housed in a \$2,000

teak wall unit from a House of Scandinavia furniture store and protected by a Panamax Max 1000 surge suppressor/line conditioner. "I put the surge protector in because we have thunderstorms just about every afternoon during the summer," Sanchez explains. "That means lots of lightning and brief power outages.

"The thing I like most about my new system is the theater part," he says proudly. "You put on a real good laserdisc and it's amazing. The director's pan-and-scan THX edition of

The Abyss is my favorite: The sound effects are really lifelike—it's like having a mini theater in your home."

Is the threat of another tropical storm enough to persuade Sanchez to pack up and leave Miami? No way. "I've been through five or six hurricanes since moving here in 1962 and [until the 1992 storm] never sustained any major damage," he says. "I love Miami." It's a pretty safe bet, though, that he'll think twice before inviting the local cable company into his home again.

—Bob Ankosko

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Matthew Polk
Co-founder, Polk Audio



RCA hardware for the new Digital Satellite System, shown here with an RCA A/V system, includes an 18-inch dish (left, through window) and a satellite receiver (top of left component stack).

DSS AT HOME

Tired of the neighborhood cable cafeteria? The new Digital Satellite System (DSS) promises an extensive gourmet audio/video buffet. Served up by the DirecTV division of GM Hughes Electronics, the United States Satellite Broadcasting (USSB) division of Hubbard Broadcasting, and RCA, DSS has more channels than cable TV, and they're more appetizing because the audio and video quality is better. So far, the same could be said for the C-band large-dish satellite-TV system that's been available for more than a decade. Instead of a giant 6-foot or larger movable dish, however, DSS uses a permanently fixed 18-inch dish. All of DSS's 150 channels are beamed

down from two geostationary high-power satellites located 22,000 miles over the equator. (A third satellite, scheduled to go up later this year, is designed to increase channel capacity and serve as a back-up.)

The first completely digital home video transmission system, DSS introduces new benefits along with the possibility of digital distractions. Besides improved picture and sound quality and more channels than cable TV, DSS offers dual aspect ratios (you'll be able to select the widescreen 16:9 mode when DSS begins transmitting programming in that format later this year) and up to eight simultaneous languages for programs with multiple soundtracks.

More pragmatically, once you make the initial investment in a DSS receiver and dish, you own the system. Ownership eliminates many of the frustrations of dealing with a cable-TV company. You can pipe the signal to multiple rooms without having to pay extra charges, for instance. And you don't have to worry about the system's becoming obsolete any time soon: DSS receivers are designed to be easily upgraded when system improvements come down the pike.

RCA is selling two similar-looking DSS packages. The basic DS1120RW, \$699, includes a metal satellite dish and a receiver. The deluxe DS2430RW costs \$899 and comes with a dual-output plastic dish (it can supply two re-

BY RICH WARREN

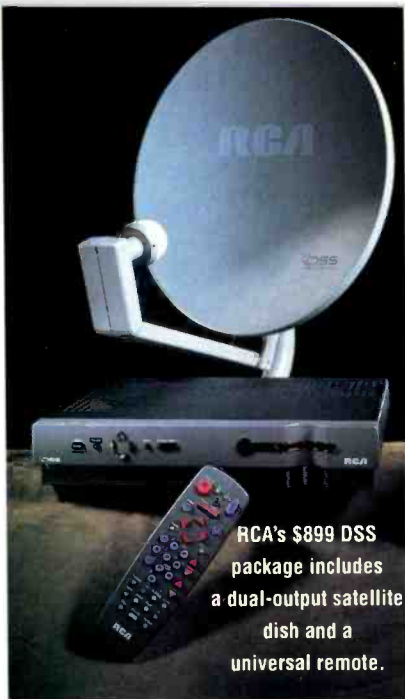
ceivers), a receiver with additional output jacks, and an enhanced universal remote control that's said to operate most TV's, VCR's, laserdisc players, and cable-TV boxes. The basic receiver (with a streamlined remote) is also available separately for \$649. I evaluated the deluxe system.

RCA stresses that the difference between the two packages is functionality, not performance. The main advantage of the deluxe system is that it supports two receivers so that you can watch one channel while taping another, for example. Both receivers have an S-video output jack, video/stereo audio line outputs, a coaxial RF output, an antenna input (so that you can receive local over-the-air broadcasts—there's a TV/DSS switch on the front panel), and a wideband data port that passes the digital bit stream for subsequent decoding. If DSS carries high-definition TV programming in the future, as is likely, the data port can be used to feed an HDTV set or an outboard HDTV decoder. The deluxe receiver also has an extra set of audio and video outputs and a low-speed data port, which could be used to send specialized information such as stock quotes to a home computer.

The subtly styled receiver is about the same size as one of the new slimline VCR's. Its front panel is very clean, with only eight buttons, a green LED, and a slot for a credit-card-size access card. The card you get with the system contains an IC chip with your personal authorization number, which is required to "unlock" the satellite channels you subscribe to and to order new programming. As with most VCR's, you'll never need to touch the receiver's front panel if you use the supplied remote control. Eight of its thirty-nine keys (the basic remote has thirty keys) duplicate the front-panel controls. RCA deserves accolades for differentiating the buttons by size, shape, and color.

System Setup

Having the DSS system installed professionally takes 2 to 3 hours and typically costs between \$100 and \$250, depending on the dealer's labor rate and installation particulars. Since my installation was the dealer's first, it took a little more than 3 hours and included running a phone line to the DSS receiver (pay-per-view programming is billed to your account automatically via an internal modem). RCA



also sells a self-installation kit for \$50 that includes some mounting hardware (but not everything you'll need) and instructions that any reasonably handy person should be able to follow.

The first step is to survey your property for an unobstructed view of the south-southwestern sky, about halfway between the horizon and the zenith. If the trees are bare at the time, remember to take summertime leaves into account. Although RCA recommends mounting the dish outside, on a windowsill or porch railing or at the roofline, for example, the system should work if the dish is installed inside and aimed through a window that has a clear southern view. The company hints that it will address inside installation in the future. The mast supporting my dish is strapped to the side of the house, with the dish positioned near the roofline.

Once the mounting hardware and grounding rod are secure, the next step is to position the dish for optimal signal reception. A read-only-memory (ROM) chip built into the receiver displays aiming coordinates on your TV screen. You access the coordinates via an on-screen menu by entering your latitude or zip code using the remote's keypad. You move the dish so that the azimuth and declination lines etched in the mounting bracket match the coordinates on the TV screen. That puts you in the ballpark. Then you turn up the TV's volume (make sure a window is open so that you can hear it outside) and move the dish until a series of beeps merge into a continuous tone, which means that the system is locked

onto the satellite. Finally, with the help of a second person (or a lot of running back and forth), you nudge the dish while watching an on-screen tuning meter until you achieve the strongest possible signal. If the dish is properly installed, RCA says, it should be able to withstand winds of up to 60 miles an hour without losing its bearings.

As soon as the installer's van left my driveway, I rushed to the telephone and dialed a pair of "800" numbers to activate my system. I ordered the DirecTV Total Choice package and called USSB to activate the Entertainment Plus lineup, which is offered free for one month to new subscribers. Then I adjourned to my Sony XBR² 32-inch TV and Shure HTS surround-sound system, where DSS hooked me.

First Impressions

During my initial week of viewing (prior to the activation of the second DSS satellite), I scanned about sixty channels. Strange inconsistencies in picture quality baffled me. The channels DirecTV uses to preview its pay-per-view (PPV) movies looked horrendous: Backgrounds were blurry, and the picture was marred by streaking and a pixelization effect. But when I ordered PPV movies, the picture was superb.

Switching to Showtime and HBO resulted in varying picture quality, attributable more to film-to-video transfers than to problems with DSS's digital encoding system. One B-grade science-fiction film on Flix looked about as good as standard VHS, but perhaps that comes with the genre.

When digital systems go bad they can be as annoying as flies descending on a picnic. Digital gremlins showed up on CNN in the form of occasional picture breakup on fast motion shots. Promotional sports channels sometimes suffered from footballs that morphed into other shapes in midair. Blurred backgrounds were common in many fast-motion programs, and in the worst cases the picture turned into tiny squares. I found myself repeatedly returning to the pay-per-view movie channels, where picture quality was consistently stunning, and to some of the higher-quality films on the subscription channels.

On the audio side, films with decent soundtracks sounded consistently good—especially when I engaged my system's surround mode. The soundtrack



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of *In the Name of the Father* virtually matched laserdisc in quality, which means that it sounded superior to anything I've heard from a VHS Hi-Fi tape. A wide dynamic range exploded from a velvety-quiet background, without a trace of audible distortion. The bass kept my subwoofer busy, and my Dolby Pro Logic system worked perfectly, meaning that DSS maintains phase accuracy.

One reason for the difference in quality between PPV movies and those shown on channels like Showtime and HBO is the difference in sources for the program material. Pay-per-view programming is uplinked to DSS satellites directly from master digital tapes made from first-quality movie prints at DirecTV's broadcast facility in Castle Rock, Colorado, while programming from the subscription channels is first received from C-band communications satellites and then re-uplinked to the DSS satellites. But DirecTV uses monster 12-foot dishes to achieve the best possible C-band reception, and it is currently negotiating with some program suppliers to establish direct fiber-optic program feeds to enhance quality further.

During a five-week period of DSS viewing, the number of channels approached the DSS promise of 150, and I noticed improvements in picture quality, with fewer picture problems on fewer channels. Some of this improvement was apparently attributable to the implementation of GM Hughes's statistical multiplexing system, a "smart" bit-sharing arrangement that enables the four channels on each of the satellite transponders to borrow bits from each other for conveying rapid motion without noticeable picture artifacts. For example, a basketball game might borrow bits from the weather map on another channel, but give them back when rapid motion resumes on their home channel. And the upcoming switch from MPEG-1 to MPEG-2 video coding should improve picture quality even further, as well as increase channel capacity. (The receivers already include MPEG-2 decoding capability, so the transition will not cause any disruption of service.)

Such continuing, on-the-fly enhancements set the DSS introduction apart from the debut of any other technology in the past few decades. The performance of color TV's and VCR's certainly did not advance this quickly.

MUSIC BY SATELLITE

Beyond the scores of entertainment, educational, and informational programs available over the Digital Satellite System (DSS), subscribers to DirecTV's Total Choice programming package also receive twenty-eight music channels from Digital Cable Radio (DCR), recently renamed Music Choice (MC). The service provides an amazing breadth of choice, with multiple rock, jazz, country, and classical channels. Lovers, kids, and fans of Christian and gospel music also get their own channels. It's like having twenty-eight hundred-disc CD changers.

Music Choice's sound quality is far superior to FM radio. There is mild volume compression that limits dynamic range, but it will probably be objectionable, or even noticeable, only to serious classical-music listeners who are comparing it directly with CD. I find the sound quite impressive in both stereo and surround listening modes. Exact phase information is preserved so that recordings with ambience information shine when played through a good surround-sound system. MC also relays an excellent image and soundstage in an ordinary two-channel stereo setting. Expect ample bass, clean high frequencies, and gratifyingly low distortion. An excerpt from Telarc's "Ein Straussfest" nearly blew me out of my seat.

With its nonstop, no-talk music format, MC provides no on-line information about what's playing, although DSS could display it on screen if it were provided (now, the TV screen goes dark, not blue, when you select a music channel). To figure out what you're listening to, you have to call MC. But to get MC's number, you first have to call DirecTV. It would be nice if they made things a little easier.

Right now, MC is the only music service available to DSS owners. Providing access to radio superstations such as WFMT, WQXR, and Canada's CBC—all of which are available on cable TV and via C-band satellite—would make the DSS star shine even brighter.

Channel Surfing

The on-screen DSS program guide, which incorporates elements of the new StarSight menu system offered on cable TV, looks like a color version of the popular newspaper grid. You navigate your way around it using the remote's four cursor keys. When you arrive at a program you want to watch, you simply press the "select" bar above the cursor keys. If the program is available, it appears on the screen immediately. If not, an instruction screen appears explaining how to subscribe to or view the program. You can also channel-surf by using the cursor keys to scan available programs. When you select a particular channel, an informational label giving the current program's title and an MPAA rating for movies (among other things) appears at the top of the screen for several seconds. Annoyingly, if you don't make a program selection after a few minutes, a USSB ad appears on the screen and you lose your place in the program guide.

For listings of upcoming programs, you scroll to the right. A satellite icon indicating that the program is not yet viewable appears on screen if you press the select button in this area. As you've probably surmised by now, your hair could turn gray while scrolling through all 150 channels. Fortunately, you can cut to the chase by tapping in the three-digit number of the desired channel on the remote's numeric keypad. Fortuna Communications, publisher of *Satellite TV Week*, offers a monthly DSS program guide keyed to the subscriber's time zone for \$52 a year. The company plans to convert the guide to a weekly early this year. (Call 1-800-345-8876 for a free sample.)

DSS Program Possibilities

Programming packages are available from USSB and DirecTV. USSB offers six packages, ranging from the \$8-a-month Essentials, which offers MTV, VH-1, Nickelodeon, Comedy Central, Lifetime, and the All News Channel, to the fully loaded Entertainment Plus, which delivers twenty channels for \$35 a month. In addition to the Essentials channels, you get fourteen movie channels—five from HBO, three from Cinemax, three from Showtime, two from the Movie Channel, and Flix. The package is far broader and more cost-effective than any cable-TV movie package I've ever seen.

A brief warning: USSB will hound you to sign up through the mail and by

Big Speaker Sound...

without the Big Speaker.



The typical home theater system consists of a subwoofer, left and right stereo speakers and a center channel speaker. Not hard to spot are they?



Here's the Polk RM7000 home theater system. The stereo speakers are mounted on the wall. The center channel speaker and the subwoofer are inside the cabinet!

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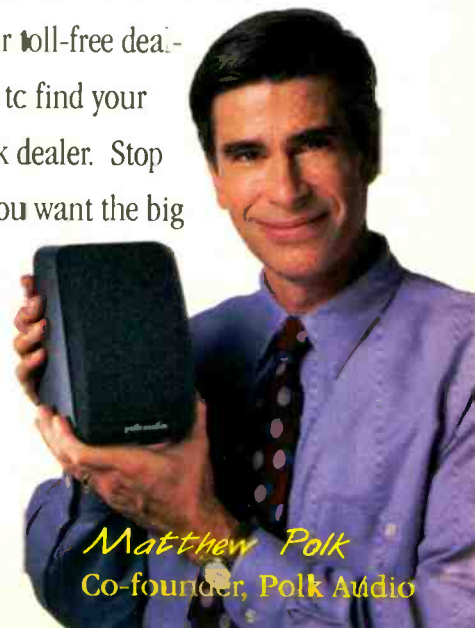
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Matthew Polk
Co-founder, Polk Audio

telephone. I've received four calls and three mailings from the company, and they kept the green pilot LED on my receiver flashing to indicate that an on-screen message was waiting for me; the message would simply remind me to call USSB. This company never sleeps.

DirecTV offers the twenty-five-channel Direct Choice lineup for \$22 a month and the approximately forty-channel Total Choice package for \$30 a month. Both include CNN, CNBC, Court TV, the Discovery Channel, the Disney Channel, both ESPN sports channels, USA Network, and the Nashville Network, to name a few. Additional Total Choice channels include the Sci-Fi Channel, seven Encore second-run movie channels, and the Music Choice digital audio service (see box, "Music by Satellite").

If all you want to do is watch PPV movies at \$3 a pop and sporting events at \$10 to \$50 a game, you'll still have to pay a \$6 monthly service fee. In addition to access to the PPV channels, you'll receive Bloomberg Direct, which provides continuous business and financial news. Other channels, such as Playboy TV and Starz!, are offered à la carte. DirecTV also offers the \$3.95 PrimeTime 24 package, which carries ABC, NBC, CBS, Fox, and PBS, but it's available only to DSS owners who live in areas that are not served by network TV.

At \$780 a year, signing up for complete programming packages from both USSB and DirecTV would cost more than a three-star dinner in Paris with fine wine. But channel for channel, it's still less expensive than cable. Depending on where you live and your cable company, DSS could save you as much as 20 percent over cable charges. My local company offers a thirty-five-channel package for \$25.43 that includes only single HBO and Cinemax channels and neither Showtime nor the Movie Channel.

DSS vs. C-Band

My DSS dish stares at the heavens unobtrusively from the corner of my roof, while my 8-foot C-band satellite-TV dish dominates the far corner of the garden as it sweeps the skies. Living near the center of the country (in Illinois) puts me in an excellent position to receive both signals, and in the case of my C-band system, using a larger-than-average (8-foot) dish and a

top-of-the-line Toshiba TRX-2220 receiver guarantees excellent reception.

A channel-to-channel comparison between the two systems usually revealed similar overall picture quality. Sometimes DSS exhibited slightly less video noise, but at others digital artifacts differentiated it from the analog C-band system. Movies from poor-quality prints looked better on C-band. DSS receives the same C-band signals that I do, except that it uses a giant 12-foot dish, which probably accounts for the lower noise. Both systems looked better than broadcast TV and all but the best cable that I've seen.

Overall sound quality was comparable between the systems on the subscription services, but the soundtracks of PPV movies were superior on DSS. They exhibited slightly wider dynamic range and a lower noise floor than the PPV movies on C-band. Soundtracks were also a little cleaner on DSS.

In terms of functionality, DSS beats C-band hands-down. My massive C-band dish must trundle its way between twenty-seven satellites, finely position itself, and then lock onto a satellite—a process that can take almost 5 minutes when it's moving between satellites to the extreme east and west. With DSS, you can switch between any two channels in seconds. Strong winds shook my C-band dish, causing mild picture jitter, but had no visible effect on DSS reception. And even during a driving rainstorm, the DSS picture was so clear that I could see lint (or dandruff) on a CNN newscaster's jacket. But during a particularly severe thunderstorm, the picture froze and advanced frame by frame for a few moments—a glitch obviously caused by the combination of violent winds and rain.

When it comes to programming, C-band still provides more options than DSS, although DSS continues to pick up new programs and services. Besides offering a few more channels than DSS, C-band carries the numerous network-TV and affiliate feeds, which invite interesting "off-camera" eavesdropping. For now, C-band also offers greater flexibility than DSS in terms of programming packages, simply because a bunch of companies sell C-band packages. The DSS programming packages are available only through USSB and DirecTV, and neither offers the other's programming.

DSS vs. Cable TV

I was anxious to compare DSS with cable TV, but since I don't subscribe to cable (being the satellite-TV kind of guy that I am), I visited a cable-connected friend who has a Sony XBR Pro 27-inch TV and a good sound system. After a few hours of scanning through the forty-some channels offered by Time Warner Cable in his area, I deemed the picture quality to be respectable but slightly below that provided by the DSS and C-band satellite systems. The cable picture was mildly noisy and lacked sharpness. While I didn't count lines, it also looked lower in resolution. The sound, on the other hand, was quite noisy, with noticeable distortion, making it far inferior to that offered by DSS. Time Warner is currently wiring this area with fiber-optic cable, which will increase channel selection and should improve picture quality. On the downside, however, it will also require a return to the set-top converter box.

Picture and sound quality aside, cable TV has one trump card: DSS cannot relay your local TV stations. So if you want to watch the local news, you'll have to continue basic cable service or hook up an antenna to your TV. Ironically, this harks back to the original purpose of cable, which was known in the early days as Community Antenna Television (CATV). Depending on how much you have to pay for cable, it may still be economical to continue basic cable service while subscribing to DSS for the premium channels.

The advent of DSS will do no less than shake up the home-entertainment industry. Viewers should benefit from the choice and price competition when Sony markets its own DSS hardware later this year, and other companies are already in the direct-broadcast satellite business, such as Primestar, or promise to enter it, such as EchoStar. But Primestar's system requires a larger (3-foot) dish than DSS, and the EchoStar system isn't scheduled to launch for another six months to a year—by then the ongoing success of DSS might make competing DBS services economically impractical. Then there are the phone companies, which are offering video services on a trial basis, and that may lead eventually to yet another form of competition. Right now, though, the DSS star shines brightly in the home-entertainment universe. □

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the Bryston 4B-NRB at 250 watts per channel stereo and 800 watts monaural, (8 ohms), is something of a legend among audio amplifiers. As Bryston's most popular product over the years it has attained international status as an amplifier suitable for the finest and most sophisticated sound systems. Whatever the venue, be it an all-out state-of-the-art stereo system, a home theater installation, a recording studio, a sound stage, or a broadcast facility, the Bryston 4B continues

to be a popular choice.

Although the description of performance standards (IMD typically less than .002%) can indicate the research and commitment Bryston brings to the design and manufacturing of audio products, only in the listening does the result of the dedication become clear. Bryston amplifiers are capable of doing justice to the most refined audio/video system, with the subtlest details of the musical fabric revealed in their original form.

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Martin-Logan, the industry leader in electrostatic technology, has recently introduced a revolutionary product, the Aeries. The Aeries combines the state-of-the-art Curvilinear Electrostatic transducer which has won 9 Design & Engineering awards together with a powerful compact woofer. Requiring only 1 square foot of floor space the Aeries is quite unobtrusive especially since the top 3' consists of its transparent transducer.

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THE SOUND

What we know today as

home theater is based primarily on techniques originally developed to improve sound reproduction in movie theaters. Although much has been written on this subject, misunderstanding and confusion are still commonplace. Just how do our home systems relate to the professional equipment and processes used in the modern cinema? What do "they" have that we don't, and why?

I'm going to take you on a trip through a typical modern theater's sound system. On our visit we will examine the theater's equipment, how it is set up by the sound engineer, and, most important, how you can get the most out of your home theater investment by understanding how it all comes together in the real thing.

At the heart of every presentation, wherever it may be, is the source material. In the case of a movie theater, the source is the film's soundtrack, which in almost every case has been prepared by professionals to exacting standards. Consequently, adherence to equally exacting standards is necessary to deliver to the audience the experience the filmmakers intended. Thanks to the work done by Dolby Laboratories, Lucasfilm THX, and others, superb results are possible (if not necessarily routine).

A theater sound system consists of two basic subsystems, or chains. The *A-chain* comprises the film's soundtrack, the input transducer in the projector's soundhead, and the first of many signal-processing modules contained within the theater's sound processor (more on that in a moment). The overall function of this section is to prepare a perfectly balanced, usually four-channel signal, derived from the surround-encoded stereo soundtrack on the film, ready for playback. (Increasingly, theaters are installing equipment to play back the new digital soundtracks, which have six discrete channels entirely separate from the regular stereo analog soundtrack.) The *B-chain* provides auditorium equalization, bass enhancement, power amplification, and delivery of the signal to the auditorium speakers.

Your home system is designed in a similar manner. Your hi-fi VCR, laserdisc player, or stereo TV provides the input signal. The Pro Logic, or surround, decoder, whether separate or built into an A/V amplifier or receiver, performs the A-chain functions of signal preparation. An A/V amplifier or receiver also provides the B-chain functions of power amplification and delivery of the signal to the speakers.

PHOTOS BY DENNIS POTOKAR

In an analog, optical-stereo system (such as Dolby Stereo), the theater's input transducer consists of a flicker-free light that is focused into a tiny horizontal slit by the lenses in the "exciter optics" (hence the term optical sound), which in turn illuminates the film's soundtrack. The soundtrack itself is placed photographically along one side of the film as a pair of opaque stripes whose widths vary according to the instantaneous amplitude of the sound. A stereo solar cell, the actual transducer that converts the light to a low-voltage electrical signal, picks up the modulated light from left and right soundtracks for delivery to the theater's sound rack.

The new digital systems—Dolby Stereo Digital, DTS, and SDDS—work in much the same way. A focused light source illuminates the digital tracks, and the data is detected by an optical pick-up device (which in some cases is actually a miniature TV camera). The digital signal can consist of the film's soundtrack (Dolby Stereo Digital and SDDS) or synchronizing information to control a CD-ROM player that carries the soundtrack (DTS). All of these systems eventually produce an analog signal that is played back through the theater's B-chain.

From the projector's soundhead, the signal next travels to the sound rack. A typical theater sound rack contains several components, often made by different manufacturers. Found here are the sound processor, the power amplifiers, the regulated power supply for the exciter lamp, and the projection-booth monitor. If the theater carries THX approval, you will also find the active-crossover circuitry developed by Lucasfilm incorporated into the THX booth monitor.

The first stop for the soundtrack's modulated signal is the sound processor, inside which are several modules (slide-in cards) that perform most of the functions required for presentation. First is the preamplifier. The sound engineer uses it to precisely balance the levels of the left- and right-channel input signals from the analog optical soundtrack, a vital step to insure accurate four-channel decoding. Your home system most likely handles this step for you automatically, but

**An inside look
at modern cinema
sound and
what it means for
home theater
by Karl Straley**

OF MOVIES

DOLBY SURROUND ENCODING AND DECODING

Dolby Laboratories originally got into film sound primarily with the idea of using its noise-reduction technology to improve the basic quality of soundtracks, which at the time suffered from severe limitations in frequency response and dynamic range. *Tommy*, recorded in a process dubbed "Quintophonic Sound," successfully incorporated Dolby A noise reduction into the film's optical soundtrack. The noise reduction made it possible for the first time to use the optical soundtrack, formerly capable only of monaural sound, as a two-channel source (the other three audio channels were on discrete magnetic tracks). Only after this success did Dolby turn to perfecting four-channel surround encoding.

The encoding process Dolby developed is based on techniques originally worked out for quadraphonic phonograph records, with a twist to suit the new application. It is known as a 4:2:4 matrix, in which four channels are reduced to two for recording and then intelligently reconstructed to four on playback. The system works by means of carefully defined phase and amplitude relationships among the channels. A Dolby Stereo (Dolby Surround, in home parlance) soundtrack consists of left and right components, known in the business as Left Total (L_T) and Right Total (R_T). The left track contains all left-channel information, just as the right track carries all right channel information. Together, *both* tracks carry the center and surround channels.

The trick to the encoding process is that the center channel is recorded identically on both left and right soundtracks, with the same phase and amplitude, and the surround information is recorded 180 degrees *out of phase*. That is, whenever the surround signal goes positive on the left track, it simultaneously goes negative by the same amount on the right track.

Playback of the surround channel can be achieved simply by wiring the output to the surround speakers out of phase to reacquire the signal. The center channel could be derived by just summing the left and right channels, but that method has drawbacks: It tends to narrow the stereo image, and sources that should be firmly centered are diffused somewhat because they are actually reproduced through all three front speakers. A better solution is the one adopted in cinema and home Dolby Pro Logic decoders, which use "steering logic" circuits to direct center and surround information to their channels while canceling it from the left and right outputs. No matrix encode/decode system is perfect—some directional information in the original, discrete four-channel mix is irretrievably lost in the reduction to two channels—but active steering-logic decoders, such as Dolby Pro Logic, can achieve much more complete and accurate extraction than any passive decoder.

The real wonder of this encode/decode process is its adaptability to existing systems. When played back monaurally, the sound is nearly identical to that of any other monaural source—a boon to both motion-picture distributors, who still must serve many mono theaters, and to TV stations and video stores, which still have many customers with mono TV sets. The invention of Dolby Stereo meant that, for the first time, the same print could be played in any theater—mono, stereo, or surround—yielding tremendous savings both in equipment and print costs. It also meant that the encoded center and surround channels of movies with Dolby Stereo soundtracks were automatically carried over to the stereo soundtracks of their videocassette and laserdisc releases. And thus was born home theater.

—K.S.

some decoders provide an input-balance control for manual calibration.

Next is the noise-reduction module. Here, Dolby A or SR (Spectral Recording) noise reduction is applied to the individual left and right signals. Without this noise reduction, optical-stereo sound is not practical because of the poor signal-to-noise ratio of the physically smaller (as compared to mono) left and right soundtracks on the film. Since your source at home, such as a hi-fi VCR or a laserdisc player, will normally supply a low-noise signal to begin with, there is no equivalent in home systems.

The Dolby Stereo decoder is where the magic of four-channel surround sound is worked. This card derives the left, center, right, and surround information encoded in the left and right stereo soundtracks. It also provides control for setting the digital delay in the surround output to suit the size of the auditorium. A decoder for four-channel (or three-channel, if you don't use a center speaker) is built into your home processor or receiver.

The purpose of the surround-channel delay is not, as is sometimes assumed, to add ambience, but rather to prevent any signal leakage from the front channels (the center especially) into the surround channel from being localized there. The people on-screen in front of you should not be heard talking behind you! The delay insures that the sound from the front speakers reaches your ears slightly before the sound from the surround speakers. When the hearing system detects the same sound from more than one direction at slightly different times, it locates the source of the sound as being in the direction from which it arrives first—a phenomenon known as the Haas effect, after its discoverer, or the precedence effect. The delay is adjustable over a small range to enable optimization for the relative distances of front and surround speakers from the listening area, but in a typical home viewing environment, such as a living room, the shortest delay is often all that is required.

The next three modules in a cinema sound processor (beginning the B-chain) are separate left-, center-, and right-channel equalization cards, each providing twenty-seven control bands with one-third-octave spacing. In concept and basic operation, they are similar to a graphic equalizer in a home audio system, but with narrower frequency bands and more controls for

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THE AWFUL TRUTH ABOUT HOME VIDEO

The sound quality available on home video runs the gamut from excellent to downright unlistenable. Why the big difference? Aren't movie soundtracks prepared to rigid specifications? While that is true, the opposite sometimes applies to their home counterparts. As home viewers, we are exposed to poor workmanship, uncompensated changes in audio specifications (especially in old films), and misleading packaging. These problems are more common on tape releases, but they crop up on laserdiscs as well.

From the early days of sound movies, until the introduction of Dolby Stereo, the audio specifications for motion pictures were set to what is known as the Academy Standard. Based on random samplings of the sound in a few theaters in the 1930's, this standard was set and remained unchanged in spite of improvements in recording and soundtrack technology. Video transfers of these films seldom include any compensatory re-equalization. When we play back the VHS releases of such classic films as *North by Northwest* or *Oliver!* (1968's Best Picture, in four-channel stereo!), the high-frequency levels are painfully intense. Our only salvation is to cut the treble as much as possible, yet that is not the experience the filmmakers intended, or what we bargained for.

What about that low-frequency problem

with optical-stereo soundtracks? Imagine what a modern film would sound like if the transfer were made from the optical tracks on a print (rather than a tape copy of the soundtrack master) with no Optical Bass Extension applied. There would be little to no low end. I have several examples of such transfers in my own collection. Where are those deliciously thunderous footsteps of ED-209 in *Robocop*? Can't even hear 'em!

Misleading packaging is another problem we all encounter. Even after reading all the fine print on a video package, we are often left confused or misinformed. Did you grab up, as I did, one of those reissues of the original *Terminator*? Both the box and the tape are clearly labeled "Hi-Fi Stereo," but the film was not made in stereo, and neither is the tape! How about being suckered by the claim "Dolby Surround"? If it has surround, the tape must be stereo, right? Nope. Sometimes a fake surround is added by intentionally remixing some of the mono soundtrack out of phase!

One solution to these problems has been introduced by Lucasfilm in the form of new and exacting THX standards for transferring films to laserdisc. The THX logo, the company promises, insures that both picture and sound will be of exceptional quality and remain constant, with no adjustments required, from one THX title to another. —K.S.

much finer adjustment. Equalization may be the single most important improvement in theater sound after noise reduction. With these cards, a pink-noise generator, and a real-time analyzer, a sound engineer can match the sound of most theaters to that of the dubbing theaters in which film soundtracks are produced and mixed. Standard frequency response is flat to 2 kHz, with a rolloff of 3 dB per octave above that for the three front channels. Unfortunately, that standard applies only to films made since about 1977,

when Dolby Stereo came in and revolutionized movie sound quality.

The one great failing of the analog optical soundtrack is its inability to reproduce low frequencies. The next module in the cinema processor takes care of that problem in a novel way. It is called the optical bass extension (OBE) module and contains circuitry to analyze the soundtrack's content for low-frequency information. It then creates a bass signal (actually a fifth channel of sound) that is fed to the theater's subwoofer. A sound engineer

can tune this circuit to the subwoofer for maximum output and clear, tight bass. This card also contains simple equalization controls for the surround channel. Again, since our home source material already provides excellent frequency response across the full audio band, there is no need for an OBE circuit. Some home units do, however, have a separate subwoofer output, which can help in creating that theater-like sound.

At the end of the sound processor's B-chain circuitry is the B-chain module. This card has inputs and filters for sound sources other than the analog optical soundtrack. It is at this point that digital soundtracks gain access to B-chain equalization and output to the theater speakers. Intermission music and the like are also introduced here. It is also where final adjustments to the sound are made. With the aid of a sound-level meter and a pink-noise generator, a sound engineer balances the outputs for equal levels to all channels. At least, that's what he's supposed to do. In reality, many theater companies insist that the surround level be set 2 or 3 dB higher than that for the front channels. Although not strictly to specs, it is an audience-pleaser, giving a little extra oomph to any surround effects.

At home we can do much the same. Center- and surround-channel levels are matched to the level of the front left and right channels by means of individual controls, and in some cases the levels to the left and right surround speakers may be individually adjustable. The master volume control is then used to adjust the volume for all channels simultaneously. Relative levels of the front left and right speakers are adjusted, when necessary, in the customary manner by means of a balance control.

The outputs from the cinema sound processor go to the power amplifiers driving the speakers. Most theaters use three two-channel amplifiers that can range in power from as little as 50 watts to thousands of watts, with about 150 watts per channel being typical. Three channels are devoted to the three front speakers, a fourth to the surround speakers, and a fifth to the subwoofer. That leaves one extra channel always available for a backup in case one of the others fails. Because the new digital soundtracks have separate left and right surround

channels, theaters playing them actually use at least six amplifier channels.

If you're using an A/V integrated amplifier or receiver in your home system, both the preamps and the power amps are contained within it. When you stop and think about it, a Pro Logic receiver, bought for a few hundred to a couple of thousand dollars, is quite a marvelous investment. Inside its case are virtually all of the components, except the equalization, found in a theater's entire sound rack!

In a THX theater, there is also a THX booth monitor and active crossover system, which a THX-certified sound technician uses to set up each speaker (left, center, and right) for optimum performance. With the help of a laptop computer, he analyzes the sound at various points in the auditorium (a non-THX theater is usually equalized with a single microphone in a fixed, "average" position). Once the auditorium is equalized, the technician records the response patterns on a floppy disk and sends it to Lucasfilm THX headquarters to verify that the theater meets their standards of excellence. In addition, a THX theater must conform to Lucasfilm's requirements for equipment selection and installation, screen brightness, acoustical treatment, room noise (from both inside and outside sources), and so on. Only after all of the specified factors are within acceptable limits is THX approval granted.

Hidden behind the theater's screen are the three main speaker systems. They differ from most home units in that usually each consists of a ported cabinet containing bass and midrange drivers with a separate, highly directional, high-frequency horn mounted on top. As in a typical home loudspeaker, however, the drivers are fed through conventional passive crossovers, which sends each driver only the frequencies it is designed to handle and provides basic equalization for the speaker. There is usually a subwoofer behind the screen, as well. Surround speakers are arrayed along the sides and sometimes the back of the theater to provide diffusion and coverage. Normally, however, they all receive the same signal, since there is only one surround channel in Dolby Stereo. The new digital formats, on the other hand, provide separate left and right surround channels, so theaters that are equipped for them feed the surround speakers on the left and right sides of the auditorium separately.



**A Pro Logic receiver
does almost all the
tasks of a theater's
entire sound rack.**

There is one final component involved in the playback of the soundtrack. Believe it or not, it is the screen itself. Motion-picture screens are designed to reflect the projector's light to our eyes and, at the same time, allow the sound to pass through to our ears. To this end, the screen contains thousands of tiny perforations to facilitate sound transmission. But even so, a good deal of the high-frequency information can be lost. The equalization in the B-chain of a theater's audio system compensates for this "screen loss," and in some cases a filter is added to the power amplifier's output to boost high frequencies. Contrary to what is sometimes said, there is no compensation for screen loss built into the soundtrack itself, since that would cause severe high-frequency distortion in the optical tracks and complicate transfers to TV and video.

We do not normally have the problem of screen loss at home. Instead, since we usually cannot place the speakers *behind* the screen, we are faced with the task of placing our speakers to create the illusion that the sound and picture originate from the same place. Many schemes have been developed to accomplish this. Some manufacturers provide "left-center" and "right-center" outputs (both of which carry a mono center signal) to be used with small speaker units

placed to the immediate left and right of the TV screen, but that approach is a compromise, at best, that tends to create problems of its own. A more direct solution is to use a single speaker designed specifically for center-channel use. Such a speaker is usually positioned horizontally immediately above or below the screen and can often be tilted to radiate directly at the viewing area. The left and right front speakers must be placed somewhat away from the TV screen or there will be little stereo separation.

The roles of the various speakers used in soundtrack reproduction are often poorly understood. The most serious misconception is that the center speaker reproduces only dialogue and can therefore be treated as something of an afterthought. In truth, the center channel is where the action is. Virtually all dialogue and pertinent sound effects emanate from this one speaker, which also shoulders part of the load in reproducing the music in the soundtrack. In a movie theater, if there is a difference between the front speakers (rare), the center speaker is always better than the left and right, which serve mainly to deliver stereo music and the occasional panned effect. (The surround speakers carry mainly ambience, enhancing the music and establishing the acoustical feel of the filmed location, and any effects that pan from front to back or back to front.) To deal with the fact that most center speakers in home systems have to be relatively small, all Dolby Pro Logic decoders give you the option of a "Normal" mode that splits center-channel bass information below about 100 Hz out to the presumably larger left and right front speakers. But an increasingly popular alternative is to use relatively small speakers all around and send all of the bass to a separate subwoofer.

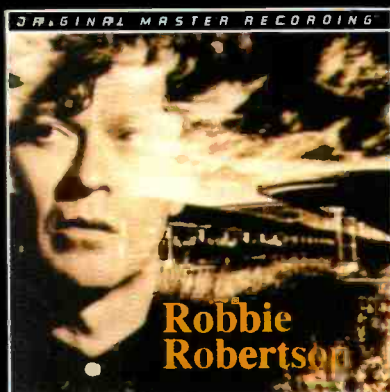
So what is it that theaters have that we don't have at home? Not much! Standards are often tighter, and their listening areas are equalized, but not much more. With the information presented here, a good ear, and some experimentation, it is possible, even likely, that you can make your home system meet or even exceed the performance of your local theater. □

Karl Straley is a writer, cinema engineer, and movie fanatic living in Huntington Beach, California.

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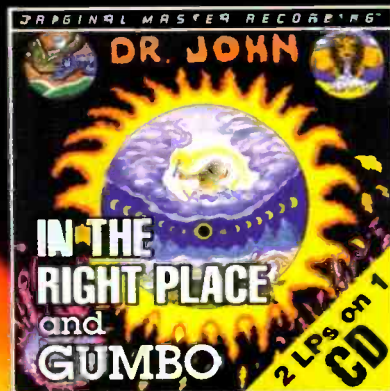
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BEST OF THE MONTH REVIEWS

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

Mary Chapin Carpenter: The End of Innocence

Throughout her career, Mary Chapin Carpenter has served two masters—herself and mainstream country radio. An artist who has never thought of herself as a country writer or performer, she nonetheless realized early on that acoustic music was better marketed out of Nashville than anywhere else and signed with Columbia in 1987. Since then, she's alternately written quiet, poetic songs that nurture her soul and commercial numbers that have given her enormous clout. Case in point: 1992's "Come On, Come On" spawned seven hit singles, sold 2.5 million copies, and cinched her third Grammy, but the best of its moody songwriting mostly went unnoticed. Carpenter spent the next year concentrating on the most ambitious writing of her career. The result—her new "Stones in the Road"—is her most commercially risky album, but in many ways her most compelling one.

Listeners who come to "Stones in the Road" wanting more exuberant, good-time material like *Down at the Twist and Shout* and *I Got Lucky* will have to settle here for *Shut Up and Kiss Me*, a sassy country come-on laced with Lee Roy Parnell's stinging blues slide guitar. It isn't just good radio fare, it's good music, with Carpenter slyly wrapping her textured alto around the words. But it's also the only real toe-tapper on the record.

The remainder of the program speaks to fans of literate storytelling and solitary travelers of interior highways. While the album has already been criticized by some as too folkie, lacking narrative drive, and overburdened with gloomy ballads, it is often stunning, both in its beautiful yet simply dressed melodies and in its lyrics. For example, the title track, covered last year by Joan Baez, is a thoughtful and well-crafted look at how conscience in childhood often turns to cynicism, greed, and hypocrisy in adults. Its End of Innocence theme continues in several more of Carpenter's personal, melancholy songs. And there are two particularly masterly pieces of dark writing, *The End of My Pirate Days*, which juxtaposes reflections on a long-gone lover against the coming of a new moon ("We rose and fell just like the tides"), and the spellbinding *John*



Doe No. 24, inspired by a real-life newspaper item about the death of a long institutionalized blind mute.

Carpenter has never fit the Nashville mold of the country queen ("the higher the hair, the closer to God"), and she never will. So should she care if radio doesn't flip over "Stones in the Road"? Nope. With this album, Mary Chapin Carpenter is master of her fate. *Alanna Nash*

MARY CHAPIN CARPENTER **Stones in the Road**

Why Walk When You Can Fly; House of Cards; Stones in the Road; A Keeper for Every Flame; Tender When I Want to Be; Shut Up and Kiss Me; The Last Word; The End of My Pirate Days; John Doe No. 24; Jubilee; Outside Looking In; Where Time Stands Still; This Is Love
COLUMBIA 64327 (56 min)

BEST OF THE MONTH REVIEWS

Yo-Yo Ma's Melting Pot

The only remotely false note hit by cellist Yo-Yo Ma in his splendid new collection of premiered-in-America concertos with the Baltimore Symphony under David Zinman is the title, "The New York Album." Sure, all three of the composers represented spent time in New York City. But much of Bela Bartok's creative work was done at retreats near Asheville, North Carolina, in the middle 1940's, which is when he wrote the Viola Concerto that Ma plays here. Ernest Bloch didn't settle in New York until after the 1917 premiere of *Schelomo*, and though Stephen Albert was on the faculty of the Juilliard School in New York while he was writing his Cello Concerto, he lived in the Boston area. All that, however, will bother only those looking for some kind of "New York sensibility" in this program, whose strength is nationalistic diversity expressed in post-Romantic musical language.

The most important of the three works is Albert's, which Ma and Zinman premiered in 1990 and recorded last year only a few months after the composer's death in a car accident. Like so many recent cello concertos, it treats the soloist as a dramatic protagonist, though without sacrificing the formal integrity that's the birthright of any self-respecting work in this genre.

The concerto's level of expressivity is notably greater than in Albert's previous text-driven, James Joyce-inspired works with dreamy, glistening orchestrations. It can't be bothered with superficial niceties or even the composer's usual melting lyricism. But the craggier thematic material gives the work a solid grounding, and it's wrought with such marvelously distilled invention that it yields many new riches on repeated listenings—which become downright addictive. This is clearly a major addition to the cello-concerto repertoire.

For the Bartok Viola Concerto, Ma has eschewed Tibor Serly's clumsy cello transcription and performs the original score, playing it on alto violin. The Bloch is given a big, glittering performance, with none of the emotional reserve of some of



LARRY BUSACCA/LENINE/SCHNEIDER

Tom Petty: pop miniaturist

Zinman's readings. It also shows off how resourcefully Sony has captured the radiant but elusive ambience of Baltimore's Joseph Meyerhoff Hall.

David Patrick Stearns

YO-YO MA

The New York Album

Albert: *Cello Concerto*. **Bartok:** *Viola Concerto*. **Bloch:** *Schelomo*.

Ma; Baltimore Symphony, David Zinman cond. SONY 57961 (78 min)



Cellist Yo-Yo Ma: concertos premiered in America

Tom Petty Proves Less Is More

Tom Petty obviously meant it when he titled one of his albums with the Heartbreakers "Let Me Up I've Had Enough." The three studio discs he's cut since then, one with and two without the band, have reveled in understatement, demonstrating that even in the land of the bottom line things needn't always be made bigger to be better. Petty has peers and colleagues on either side of him in the downsizing sweepstakes—the underrated Peter Case and Bruce Springsteen circa "Tunnel of Love" come to mind, but neither of them has the heart for the succinct and irresistibly melodic American pop that Petty wears proudly on his sleeve.

Petty's latest, "Wildflowers," is of a piece with its immediate predecessors ("Full Moon Fever" and "Into the Great Wide Open"), serving up fifteen artful and hook-filled pop miniatures that reverberate in the mind long after the last

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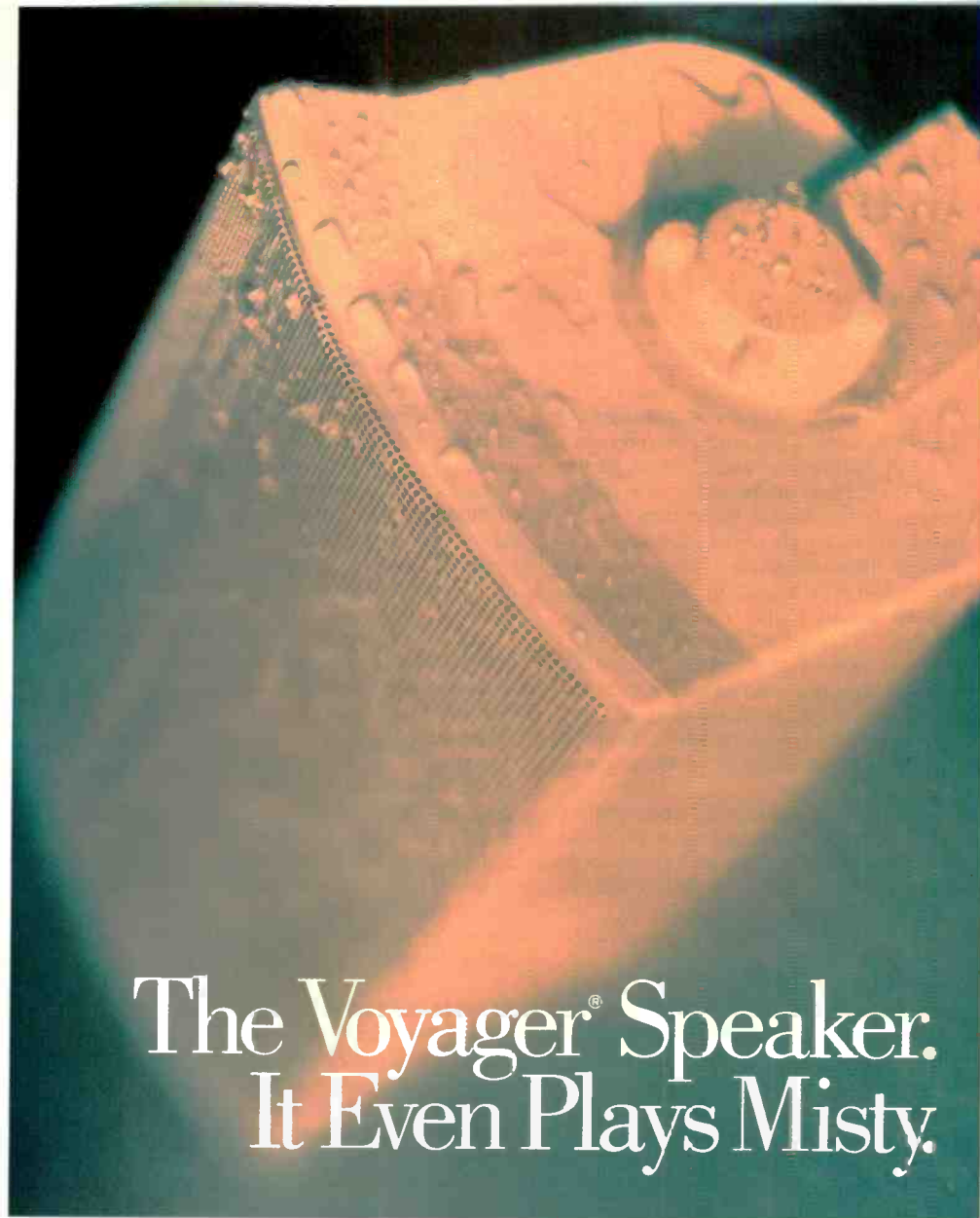
One Voyager owner told us his speakers were A-OK after being thrown several hundred feet by hurricane Andrew (oh, it was attached to its owner's porch at the time).

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



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actually floats. And there's more; the Voyager is part of a family of indoor/outdoor speakers, including the Runabout™ I and Runabout II. Both Runabouts feature the resiliency of a tough polypropylene enclosure, plus

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Boston Acoustics
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BEST OF THE MONTH REVIEWS

chiming chord has faded. The album is like a box of chocolates through which you can rummage for favorites. *Wild Flowers* is a folk song as pure as mountain water that could pass for some newly unearthed jewel from the Carter Family canon. *You Wreck Me* is a power-pop cannonball outlined in garage-band guitar chords and high-timbre harmonies in the chorus. *Only a Broken Heart* is an ethereal, introspective number that floats on a bed of flutes and twelve-string guitar as Petty wonders aloud, in near-falsetto, "What would I give to start all over again? / To clean up my mistakes?" He and his musical accomplices (including various Heartbreakers) kick up a raunchy, blues-rock ruckus in *Honey Bee* and *Cabin Down Below*. And the spare, haunting folk-blues of *Don't Fade on Me* is a real departure.

Writing in the vernacular, never cluttering a narrative, Tom Petty manages to do what precious few other performers seem capable of these days—sing a simple song that is sturdy, tuneful, and true.

Parke Puterbaugh

TOM PETTY

Wildflowers

Wild Flowers; You Don't Know How It Feels; Time to Move On; You Wreck Me; Good to Be King; Only a Broken Heart; Honey Bee; Don't Fade on Me; Hard on Me; Cabin Down Below; To Find a Friend; Higher Place; House in the Woods; Crawling Back to You; Wake Up Time
WARNER BROS. 45759 (63 min)

Cecilia Bartoli's Mozart

"Mozart Portraits" is more than a catchy title for a vocal collection consisting mainly of soprano arias from his operas. Superb recitalist that she is, the mezzo-soprano Cecilia Bartoli knows how to differentiate her Mozart characters. A ferocious Fiordiligi (*Così Fan Tutte*), with her r's formidably rolled in her first aria, "Come scoglio," subsequently eases just as convincingly into the remorseful mood of her second, "Per pietà, ben mio." Her Despina (also *Così*) is girlish and playfully mocking, her Zerlina (*Don Giovanni*) adorably contrite, her Donna Elvira (also *Don Giovanni*), hurt and furious. The *Figaro* Countess

she projects is less aristocratically aloof than throbbing with muted intensity. Throughout, Bartoli regales us with exemplary enunciation, clean intonation, and expert embellishments. Her runs are fluent, her turns cleanly executed, and while her trills are not spectacular, neither are they superficial.

These are all soprano roles, but Bartoli's mezzo voice easily encompasses the range—the wide leaps in "Come scoglio" cause no problems, and only a slight hint of strain is evident in "Batti, batti." Whether she could portray Fiordiligi or Elvira on stage is debatable, but she certainly shines in this recital.

Besides the operatic arias, the CD includes an aria from the oratorio *Davidde Penitente*, actually a variant of the "Laudamus te" in the Mass in C Minor, as well as the familiar *Exsultate, Jubilate*. There are other excellent versions of that motet in the catalog, but Bartoli's *Alleluia* is enchanting in its childlike joy. In all, "Mozart Portraits" is another irresistible recital from this surefire artist, splendidly backed by the Vienna Chamber Orchestra under Gyorgy Fischer. George Jellinek

CECILIA BARTOLI

Mozart Portraits

Così Fan Tutte: Come scoglio, Per pietà, ben mio; In uomini, in soldati. Le Nozze di Figaro: Dove sono i bei momenti; Giunse alfin il momento . . . Al desio di chi l'adora. Don Giovanni: Batti, batti o bel Masetto; Mi tradi quell'alma ingrata. Davidde Penitente: Lungi le cure ingrato. Exsultate, Jubilate.
Bartoli: Vienna Chamber Orchestra, Gyorgy Fischer cond.
LONDON 443 452 (61 min)



Mezzo Cecilia Bartoli

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• VERDI: La Traviata.

Lorenzari, Aragall, Fischer-Dieskau; Deutsche Oper, Maazel. LONDON 443 000. Another bargain "two-fer," this is "... a *Traviata* of many good things, but not an ideal performance" (January 1971).

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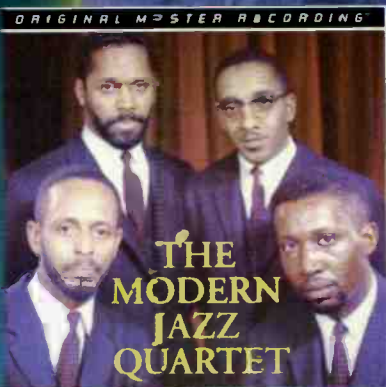
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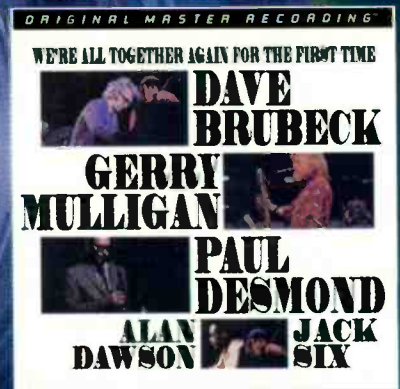


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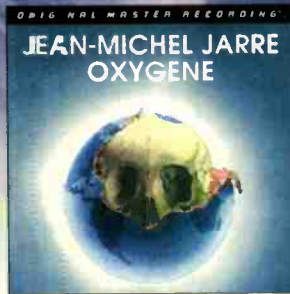
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POPULAR MUSIC



NEW RECORDINGS REVIEWED
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CHRIS CLIFARIO/ATLANTIC



Bad Religion: no compromises

PETE ANDERSON
Working Class

LITTLE DOG 94001 (44 min)

Performance: Take notice
Recording: Guitar mixed too high

On his first solo album, Pete Anderson, the producer/guitarist best known for his work with Dwight Yoakam and Michelle Shocked, moves away from progressive country music, finding a sympathetic home in the blues and oddball instrumentals that sound like the soundtrack from a Tim Burton movie.

Anderson has an ear for the esoteric, and on "Working Class" he indulges himself in every stylistic whim, from *Where the Crows Go*, which weds a cosmic melody, Zen philosophy, and guitar work from Venus, to *Fire*, the Jimi Hendrix classic recast here as swing-blues. Anderson takes no prisoners, and he's not afraid to try anything—not even an Island-flavored remake of *Our Day Will Come*. At times his sound borders on cacophony, with accordion, tuba, and cranked-up guitar all vying for attention at once. But he wins kudos for his crisp, unpretentious electric guitar and for having the guts to make a record chock-full of musical personality. In these days of cookie-cutter production, that's saying a lot. **A.N.**

BAD RELIGION
Stranger Than Fiction
ATLANTIC 82658 (39 min)
Performance: Brilliant
Recording: Loud

Punk rock lives, enthused the news-dude Kurt Loder during MTV's coverage of Woodstock '94, and he was right; since Nirvana's breakthrough, punk bands have indeed sold records in once unimaginable numbers. But the most successful ones have

had to retool themselves as either pop cartoons (Green Day) or eternal frat boys (Offspring). No big deal. I guess, but some essential something—genuine passion, probably—seems missing from the current mix. So it's nice to hear an uncompromising blast of the real thing like Bad Religion. These guys have been churning out similar stuff—manic-tempoed, impeccably played post-Pistols churn with intelligent, angry/funny lyrics—since 1982, and, as this new album demonstrates, they just keep getting better. Here, abetted by a production job that's a teensy bit more radio-friendly than usual (that is, the drums sound punchier), they continue to pay homage to the punk verities (Loud Fast Rules!) but without being bound by them (tempo changes, insinuatingly catchy background vocals). And while they can be preachy, they mostly come off as smart and mad with good reason (from *Incomplete*: "I'm the butt of the worst joke in history"). From the sizzling guest guitar of MC5 legend Wayne Kramer to the glorious chorus hooks of the title tune, "Stranger Than Fiction" is a wonderful anomaly—accessible yet utterly uncompromised. A terrific record. **S.S.**

MARCIA BALL
Blue House
ROUNDER 3131 (54 min)
Performance: Best yet
Recording: Good

Blues pianist/singer Marcia Ball's great strength is her refusal to come to the genre bathed in reverence for every Big Mama who came before her. With a Louisiana upbringing and an Austin, Texas residence, Ball has a variety of other musical influences floating around in her blood, yet she refuses to salute any of them with nostalgia. On "Blue House" she flirts with bar-

Black Crows: Morph Rock festival



relhouse boogie, commercial R&B, and the Lubbock country-rock of Joe Ely (*Finger-nails*). But while the program is almost uniformly pleasing, it makes its most lasting impression through Ball's originals. *St. Gab-*



riel, for example, about getting out of jail with no place to go, doesn't just serve up a perfect portrait of emotional devastation—it's the sound of Ball moving from festival favorite to full-fledged artist. **A.N.**

THE BLACK CROWES
Amorica
AMERICAN 43000 (54 min)
Performance: Limited
Recording: Good

Who says the Black Crowes have never had an original thought? Why, they've created a whole new genre: Morph Rock. Morphing, for those of you who haven't been paying attention, is the way-cool special effect that allowed Michael Jackson to metamorphose into a panther in one of his videos. The Crowes have cleverly adapted the concept to rock-and-roll on "Amorica" ("Amorphica"?). Instead of assuming a single identity for a song (as they've done in the past with the Rolling Stones and Rod Stewart), they now move smoothly from band to band to band to . . . well, you get the idea. And they've expanded their repertoire: Led Zeppelin riffs segue into an Allman Brothers mini-jam on *Cursed Diamond*, and after *P.25 London* opens with some Hendrixian power riffs, the band kicks into Edgar Winter-ized power riffs. Come to think of it, "Amorica" is a power-riff festival, and listening to it can be a guilty pleasure for those of us with a soft spot for classic rock.

That is, of course, provided we don't pay too much attention to what lead singer/songwriter Chris Robinson is saying. He rarely brings his hippified, druggy, oblique vision into focus to evoke the nastiness of the dissi-

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WALTER BECKER IS LISTENING...



The other guy from Steely Dan, who's just released his first solo album ("11 Tracks of Whack," reviewed last month), hears most music on the road near his home in Hawaii. "I have a CD changer in my

car," he says, "and lately I've been playing a Paul Bley trio record with Paul Motian and Gary Peacock on ECM, the new Sonic Youth album (I'm kind of a fan), and 'Pleased to Meet Me' by the Replacements. Those seemed to be the pieces that most complemented driving around Maui." Becker draws the line at actual Hawaiian music, however. "As Groucho Marx said, all Hawaiian music sounds like it was recorded on the same day." S.S.

ANNA USA/GANT

pated life. Instead, he has a frustrating habit of simply piling one non sequitur on top of another. "Amorica" sounds best the first time around and goes downhill from there. The more you listen, the less you hear. R.G.

BLUES TRAVELER

Four
A&M 314 540 265 (57 min)
Performance: Solid
Recording: Very good

The prosaically titled "Four" finds Blues Traveler making incremental gains on the base they established with their last release, "Save His Soul." As before, the new album manages to bottle some of the band's onstage excitement while brandishing their acumen as both songwriters and musicians. For every virtuosic blowout like *Fallible* (harmonica player John Popper's finest recorded moment might just be the song's dazzling intro), there's a carefully constructed song like *Look Around* lurking close by. While the album does have a few leaden moments, it nonetheless rewards patient and repeated listening. Most interesting is the way the "Blonde on Blonde"-style folk-rock numbers, such as the lovely *The Mountains Win Again*, serve to counterpoint and contrast the go-for-broke ferocity of a rocker like *Crash Burn*. The pacing of "Four" works to its advantage as well, and the group's tight interplay is captured in all its hard-charging glory. P.P.

ERIC CLAPTON

From the Cradle
REPRISE 45735 (60 min)
Performance: Heavy-handed
Recording: Lively

The last song on this all-blues tribute is a Willie Dixon number entitled *Groaning the Blues*, and that, in a nutshell, gets to the heart of what eventually becomes so off-putting about the album—Clapton's vocals. He groans them and grinds them until they're black and blue, exerting himself beyond the point where his performances seem natural. The same sense of overreaching extends to the music. So intent are Clapton and his band of pros on recreating the intimate, live-to-tape sound of a Chess Records session that they often fail to uncover a rhythm and chemistry of their own, and "From the Cradle" winds up being more imitation than interpretation, troweled

on with a well-meaning but heavy hand. Just listen to Clapton tear into Leroy Carr's *Blues Before Sunrise* and Elmore James's *It Hurts Me Too*, manhandling them with all the subtlety of a wrecking ball.

Throughout his career Clapton has always brought something of himself to the songs of others that he's recorded. But here he seems too intimidated to do justice to the forebears he so evidently reveres. Happily, there are some exceptions. On jumpier, up-tempo tunes like *I'm Tore Down* and *Goin' Away Baby*, the band cooks and shuffles as to the roadhouse born while Clapton sings in a more natural register. Similarly, he shines on two solo acoustic numbers, *Motherless Child* and *Driftin'*. Had a lighter, less reverential hand been deployed throughout, "From the Cradle" would have been wholly successful rather than the seriously flawed project that it is. Yet it remains an undeniably good-hearted gesture, and if it inspires some Clapton fans to seek out the source material, who can argue? P.P.

SHAWN COLVIN

Cover Girl
COLUMBIA 57875 (45 min)
Performance: Vibrant
Recording: Fine

Singer-songwriters rarely record complete albums of tunes by other people, and they usually wait until well into their careers to do so—that way, they can justify the move as a creative challenge rather than

Eric Clapton: overworked



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Powell Trip

Bud Powell was one of the most innovative and influential pianists ever to grace the jazz scene, a player who was as important to Bebop as Earl Hines, Teddy Wilson, and Art Tatum were to Swing. One might say that he was a modern extension of his Swing predecessors, especially Tatum, whose technical brilliance he sometimes matched. Powell, who died in 1966, would have turned seventy last September, which may be why the Blue Note and Verve

labels—for whom he recorded profusely—have each poured all the Powell they could muster up into a box and a bound album, respectively. Blue Note's box contains four CD's of material from six sessions recorded between 1947 and 1963; Verve's five-disc album spans the period from 1949 to 1956.

Both sets contain many performances that are absolutely brilliant and others that sadly reflect the deep emotional turmoil that Powell suffered (he was in and out of mental hospitals for much of his professional life). Both also include some alternate and incomplete takes that will delight serious students of Powell's music but may become tiresome to the average listener.

While the music is of equal caliber in both sets, Verve is the clear winner when it comes to packaging. A 150-page booklet offers thoughtful interviews as well as track-by-track commentary and a thorough discography. The forty-page Blue Note booklet is mundane by comparison, although it contains a good essay by Bob Blumenthal and discographical information. Nevertheless, both packages belong in any comprehensive collection of modern jazz. *Chris Albertson*

BUD POWELL

The Complete Blue Note and Roost Recordings

BLUE NOTE 832 (four CD's, 278 min)

BUD POWELL

The Complete Bud Powell on Verve
VERVE 669 (five CD's, 313 min)

an act of desperation. But not Shawn Colvin. On her third album, "Cover Girl," she does twelve tunes written by such folks as T. Waits, J. Webb, B. Dylan, S. Earle, R. Robertson, and D. Byrne—T. Weymouth—C. Frantz—J. Harrison. I'm not saying this album is an act of desperation, but if it were, I'd be wishing for more desperate people.

"Cover Girl" has the warm, enjoyable feeling of a songfest. At times—in the six cuts recorded live with virtually no accompaniment besides Colvin's acoustic guitar—it almost sounds like a hootenany. Not that this is a light-hearted romp; most of the songs are sad, tender, yearning, and sweet. Colvin's crisp soprano gives them a bracing edge that keeps the scales from tipping over into drippy sentimentality. This strong-willed quality, which made her first album, "Steady On," so appealing, is what I missed most in her follow-up, "Fat City." No matter how bleak or repressed the sentiments of the tunes in "Cover Girl" (the person in Steve Earle's *Someday*, for example, seems nearly incapable of ever leaving the small town that's choking the breath out of him), the resolve in Colvin's voice gives reason for hope.

Colvin is a fine guitarist, so the live cuts sparkle despite the minimal accompaniment. The studio cuts are also beautifully restrained, even when a bunch of folks are plucking or strumming or whacking in the background. Shawn Colvin will certainly live to write again, and I look forward to what comes out of her pen. But for now, "Cover Girl" is a testament to the power of interpretation. *R.G.*

ENGINE ALLEY

ISLAND 314 521 235 (38 min)

Performance: Wonderful
Recording: Excellent

The copyright says 1994, but "Engine Alley" could just as easily have been made twenty years ago, so much of a piece is it with the power-pop and glam-rock movements of the Seventies. Since power pop has always appealed more to discriminating cult followings than to the masses, it hasn't yet been exhausted by commercial overkill or become a bandwagon to jump onto. You play it because you like it, and that's why this Irish quintet's American debut is so unassumingly fresh and fun. They dig into such iconographic subjects as the radio with boisterous humor and bristling melodies. They spice up a classic power-pop approach (the guitarist's trebly strum and twang, irrepressibly boyish vocals, melodies and choruses that melt in your ears) with a violinist and—shades of the Velvets' Moe Tucker—a "drummer girl." A technicolor production job by Steve Lillywhite (of U2 fame) gives the album a dreamlike sheen. The lyrics are all playful stream-of-consciousness and slice-of-life, filled with the Irish flair for striking imagery and telling details. Witness the character sketch of a couple of aging would-be rockers who can't turn back in *Old Lovers in a Basement Flat*, a perky tune cut from Bowie/Bolan cloth. And so it goes throughout "Engine Alley"—an unabashed, left-field delight. *P.P.*

KEB' MO'

OKEH/EPIC 57873 (44 min)

Performance: Nifty
Recording: Fine

Yes, I love my baby, gonna tell everybody I know," sings Keb' Mo' in a song from his debut album. How nice, for a change, to hear someone sing from the heart about feeling good. It's doubly nice to hear such sentiments set to a fingerpicked steel-string guitar that's evocative of Delta blues while retaining a vitality and big-heartedness that are completely newfangled and fresh. Keb' Mo' (short for Kevin Moore) is the real thing, a young believer and practitioner of the blues every bit as gifted as Taj Mahal. There's warmth in his love songs and truth in his occasional topical numbers, such as the heartbreaking *Victims of Comfort*, a look at our troubled world that's got more wisdom and insight than any ten gangsta rap albums I've heard lately. Leavened by sweet skiffles like *Angelina* and the joyful *She Just Wants to Dance*, "Keb' Mo'" is a ton of feel-good fun from a huge new talent. *P.P.*

KOSTAS

X S in Moderation

LIBERTY 28849 (34 min)

Performance: Inside view
Recording: Very good

The man who calls himself simply Kostas is a country songwriter of a different sort. He's a mountain poet, but the mountain is in Montana, not Appalachia. And while most country songwriters hail from Texas, Tennessee, or the like, Kostas's ancestors came from that fabled redneck stomping ground of . . . Greece? (Hence his use of a first name only, with a zillion-syllable surname in the wings.)

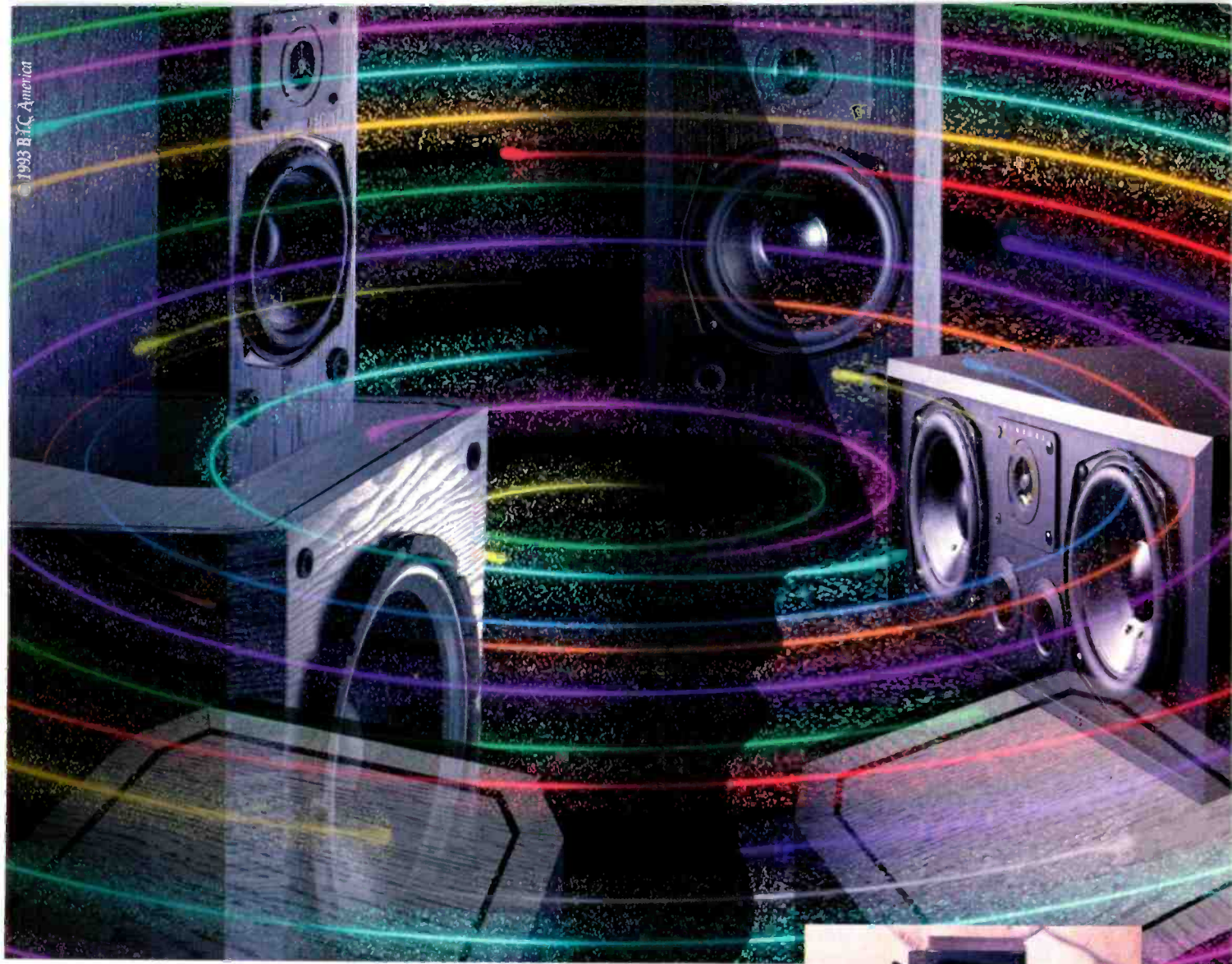
Whatever he's called, Kostas has been the co-writer of some of contemporary country's biggest hits, including the Dwight Yoakam smash *Ain't That Lonely Yet* and Patty Loveless's chart-topper *Blame It on Your Heart*. This album features those hits as well as several hits-in-waiting, such as



Kostas: country hit-maker

RON KENY/LIBERTY

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the pretty ballad *If You Think* and the blue-grassy *Good Mornin' Memory*, a duet with Loveless. Kostas himself has a pleasant, if limited tenor, which may in part explain why other people generally record his tunes. But he brings his own spark to the music, and in his own unfettered delivery unveils secrets of the songwriting process. A nice surprise. *A.N.*

JIM LAUDERDALE

Pretty Close to the Truth
ATLANTIC 82608 (38 min)

Performance: Sixties flashback
Recording: Very good

Three years after his sparkling country-rock debut, Jim Lauderdale returns with an album that explores the rock and soul side of his personality and harks back to the days of 1960's radio, when formats weren't so polarized and melody was king. On "Pretty Close to the Truth," produced by Dusty Wakeman and blessed with the ditch-digging guitar of Gurf Morlix, Lauderdale lets it all hang out. From the opening *This Is the Big Time*, an exuberant go-for-it song that could be about either a career or a romance, to the countrier *Don't Trust Me*, a song Johnny Cash would probably kill for, Lauderdale is full of optimism and fire.

Lauderdale's voice isn't pretty, but it's supple and fraught with emotion. The most memorable songs here draw on the soul/R&B tradition of Otis Redding and Al Green, especially *Why Do I Love You*, in which Lauderdale sings as if his heart will surely burst. Elsewhere, snatches of George Harrison, Van Morrison, and the Rolling Stones appear and then fade away as Lauderdale's own voice emerges. That's never stronger than on *When the Devil Starts Crying*, a supercharged Delta blues with an age-old theme, a modern approach, and a blood-curdling vocal; seems the woman this man loves is being courted by Satan himself. Or maybe he's just a cad of a human—when the flames get this hot, it's hard to tell. *A.N.*

LYNYRD SKYNYRD

Endangered Species

CAPRICORN 42028 (48 min)

Performance: Razor-sharp
Recording: Crystal clear

If you've had some doubts about the reconstituted Lynyrd Skynyrd, here is where they get dispelled. Without an invitation from MTV, these sons and daughters of Dixie pulled out the plugs to generate some hair-raising electricity on "Endangered Species," an acoustic rethink of old songs plus a few new ones that winds up being damn near definitive. Classics like *Saturday Night Special* and *Sweet Home Alabama* are revelatory here in their no-nonsense starkness and just-sittin'-round-playin' casualness. Tunes of more recent vintage, like *The Last Rebel*, hold their own and then some, benefiting from the intimacy and conviction brought to them in this no-frills setting. The instrumental core—guitarists Gary Rossington and Ed King, bass player Leon Wilkerson, and pianist Billy Powell—plays with a steely, clear-eyed intensity, as if their very



Lynyrd Skynyrd: rising from the ashes

survival as a unit hung in the balance. Johnny Van Zant has made great strides as a vocalist, emerging from the shadow of his brother's legend and mastering some of the subtleties that the late Ronnie deployed. The playing is as crisp and clear as the cool mountain stream pined for in *Hillbilly Blues*, and "Endangered Species" is as good as anything Lynyrd Skynyrd has ever recorded—before or after the crash. *P.P.*

JONI MITCHELL

Turbulent Indigo

REPRISE 45786 (43 min)

Performance: Coasting
Recording: Very good

Joni Mitchell's first album in several years begins with a song about a troubled woman with a suicidal itch (*Sunny Sunday*). From there it meanders through life in the age of AIDS (*Sex Kills*), spouse abuse (*Not to Blame*, apparently a jab at Jackson Browne), sadism in the Catholic

Joni Mitchell: mid-life crisis?



church (*Magdalene Laundries*), and Job (*The Sire of Sorrow*, which contains the lyric, "I've lost all taste for life"). And if all that isn't enough of a downer, the album is also a depressing reminder that Mitchell, one of the finest singer-songwriters of her generation, has apparently run the best of her creative course.

"Turbulent Indigo" harks back somewhat to the jazzbo sound of Mitchell's "Hejira," one of her more accessible albums. But the melody, joyousness, and romantic persona of that earlier record are nowhere to be found here. In fact, of the sixteen selections on "Turbulent Indigo," only one is a fully fleshed-out song—the rest amount to mere sketches. Somber, disillusioned, and fatalistic in middle age, the Joni Mitchell of today sounds like the embittered mother of the dreamy Mitchell of yesteryear. But now, unlike in the old days, when she sings of stark emotion, risk, and loss, we understand her meaning only too well—in our heads instead of our hearts. *A.N.*

MICKEY NEWBURY

Nights When I Am Sane

WINTER HARVEST 3301 (53 min)

Performance: Well sung, but . . .
Recording: Very good

For several decades now, Mickey Newbury's name has been featured on the short list of Nashville's best and most literate songwriters. A cult hero of sorts, Newbury is the man who patched three Civil War songs together for *An American Trilogy*, which Elvis carried to the four corners of the universe. He also wrote the era-defining *Just Dropped In (To See What Condition My Condition Was In)* for Kenny Rogers and the First Edition. But among songwriters, Newbury is better known for such quiet, well-crafted songs as *San Francisco Mabel Joy* and *Heaven Help the Child*.

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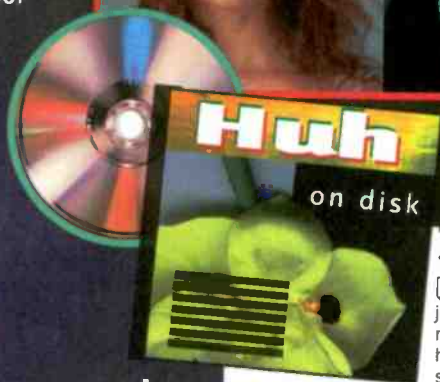
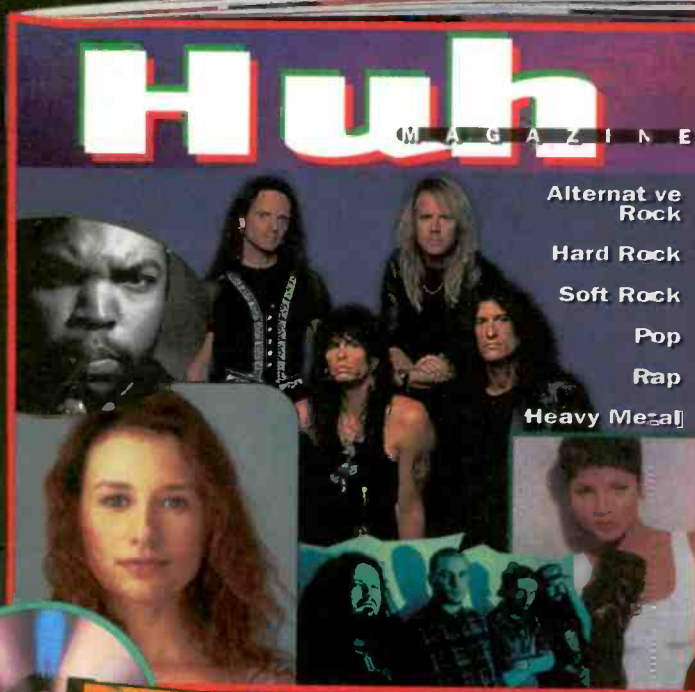
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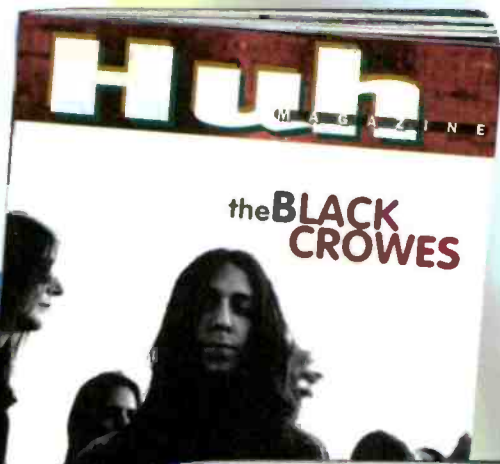


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Newbury doesn't wear quite as well with the test of time. On this live recording of old and new material, too many of the songs about pimps, prostitutes, and Newbury's personal demons seem a tad precious. That said, he's very commanding on a song like *East Kentucky*, in which he conveys anguish without wallowing in it, and on *Apples Dipped in Candy*, where his evocative, smoky tenor sounds positively ghostly. Yet almost everything else about this album—including the World's Worst Liner Notes—seems a throwback to another era. *A.N.*

SINEAD O'CONNOR**Universal Mother**

CHRYSALIS 30549 (50 min)

Performance: Intensely felt, but . . .**Recording: Superb**

If Sinéad O'Connor's latest disc was a paperback, it would be filed in the self-help section of the bookstore. "Universal Mother" opens with an excerpt from a 1970 speech by feminist Germaine Greer and closes with a song whose lyrics read like one of those New Age greeting cards ("Thank you for staying with me / Thank you for not hurting me / You are gentle with me"). In between, this wild Irish rose psychoanalyzes the whole of Ireland (*Famine*),

**Sinéad O'Connor: therapeutic?**

sings of the godlike purity of newborn babes, and even lets her own tot warble a tune (*Am I a Human?*).

O'Connor has the gift of a gorgeous, flute-like voice that's capable of expressing everything from a child's wonder to maternal outrage. The album opens strongly with *Five on Babylon*, a fierce howl of grief that mixes hip-hop rhythms and dub-style backing in what amounts to an emotional blood-letting. It then proceeds to the delicate, magical *John I Love You*, possibly the best song she has ever recorded. From there, though, the album enters a long and quiet stretch, much of which is either too private (the lullaby *My Darling Child*) or preachy (the screed *Red Football*: "My womb is not a football for you . . . I'm not no animal in the zoo") for mass consumption. On the other hand, such numbers as *A Perfect Indian*, *Scorn Not His Simplicity*, and *All Babies* are tracts from the dubious gospel of Political Correctness, rammed down the listener's throat with a passive/aggressive fist in glove. A mixed bag. *P.P.*

**R.E.M.****Monster**

WARNER BROS. 45740 (49 min)

Performance: Hard**Recording: Noisy**

This one is R.E.M.'s "rock" album—noisy, extroverted, and surpassing even "Document" (heretofore their toughest work) in unsentimental decibelage. In "Monster" Peter Dinklage rediscovers the electric guitar while Michael Stipe assumes a slew of vocal guises, treating his voice so that it sometimes takes on a robotic demeanor. Those two elements combine to make the album a kind of funky/cranky thesis on sexual and celebrity identity.

In *King of Comedy*, Stipe dryly alludes to tabloid-style speculation about his life and other invasions of privacy that come with the territory before asserting, "I'm not commodity." His vocals are less decipherable than they've been in a while, but the sense of them emerges in bullet-like phrases and in the inflections Stipe gives them as part of the music. In a sense the album almost intentionally wards off the kind of high-powered microscopic scrutiny that R.E.M. typically attracts; it can be enjoyed and absorbed for what it is without a term paper's worth of *explication du texte* from critics. And part of the serious fun is the streamlined, Seventies-style glam-rock projected with bilious wit by the band in *Crush with Eyeliner*, *Bang and Blame*, and *Star '69*, over which hover the ghosts of the Stooges, the New York Dolls, and Mott the Hoople.

After the deliberate and decorous "Out of Time" and "Automatic for the People," R.E.M. has finally let it all tumble out on "Monster"—anger, frustration, sarcasm, piss and vinegar. It may not turn out to be one of their milestone albums, but it does serve to re-engage them with the noisy, condescending real world from which they've beaten a retreat for the last five years. *P.P.*

BARBRA STREISAND**Barbra the Concert**

COLUMBIA 66109 (two CD's, 104 min)

Performance: Slick and stylish**Recording: Very good**

Streisand is in her nimblest pop-diva mode for most of this two-CD set, recorded live at New York's Madison Square Garden near the end of her much-ballyhooed, SRO 1994 tour. The opening *We'll Never Say Goodbye* (by Andrew Lloyd Webber) finds her singing with the most passion she's mustered in some time, and

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she sustains that intensity for many—if not all—of the program's plentiful array of Streisand evergreens. Through electronic gimmickry she even manages a nifty *Yentl* duet with herself and a *Guys and Dolls* duet with Marlon Brando. Occasionally she "bends" notes or uses other vocal tricks to adroitly camouflage technical frailties that have crept into her voice as she's gotten older. But she still has one of the most bewitchingly distinctive sounds in the business, as well as an on-the-mark way with lyrics that few others can match. Some of her asides to the audience come off as over-rehearsed, but she does a neat job of coping with the overexpressive fans who threaten now and then to undermine her. *R.H.*

VELVET CRUSH**Teenage Symphonies to God**

553 MUSIC/EPIC 64442 (46 min)

Performance: Fantastic
Recording: Good

This album is top-to-bottom great. But the title's a bit of a misnomer; the phrase "Teenage symphonies to God" was coined by Brian Wilson to describe his inspired work with the Beach Boys in the mid-Sixties, resulting in masterpieces both released ("Pet Sounds") and legendary ("Smile"). Velvet Crush doesn't so much evoke the panoramic grandeur and spiritual reach of Wilson's "teenage symphonies" as it does the hook-filled, concisely arranged, guitar-based pop of such iconic forerunners as the Byrds (with a big nod to the late Gene Clark, whose *Why Not Your Baby* they cover), the Raspberries, and Big Star. And if there's symphonic grandeur here, it's more implied than elaborated on, but it can be divined in touches like the mesmerizing riff and circular, overlapping vocals that float through the unforgettably lovely *Time Wraps Around You*.

Obviously, Velvet Crush is composed of devout, old-school power poppers who have done their homework and have exquisite taste in influences. At the same time they bring something fresh to the formula, and their enthusiasm shines through in track after delectable track. Not to be missed. *P.P.*

THE WOODMAN COMETH

No, Ed Wood wasn't the worst director of all time, as anyone who's ever seen a Menahem Golan film will attest. But the legendary cross-dressing auteur of such anti-classics as *Plan 9 from Outer Space* is still one of our favorites, and thus we are pleased to report on two new CD's celebrating Ed in all his Ed-ness. The first, appropriately, is "Ed Wood" (Hollywood

62002), the soundtrack from Tim Burton's loving and hilarious bio-pic, which serves up Howard Shore's just-about-perfect bongos-and-theremin score along with snippets of dialogue from the film. Harder to find, but perhaps even more interesting, is "The Worst!" (Black Cracker 5001), a very funny musical by Josh Alan (brother of cartoonist Drew Friedman, who helped kick off Wood mania) that celebrates the director's life in songs like *Let Me Die in Angora*. Ed would have been proud. (Available from Black Cracker Music, P.O. Box 720523, Dallas, TX 75372.) *S.S.*

Collection**THE BEST OF MOUNTAIN STAGE, VOLUME SEVEN**

BLUE PLATE 007 (47 min)

Performance: Smorgasbord
Recording: Good

The various albums culled from broadcasts of live performances on West Virginia Public Radio's first-rate weekly music show, "Mountain Stage," not only amount to a dazzling jukebox full of every style imaginable, they're also excellent samplers of Who's Important (or Who Will Be Important) in the various sub-genres of popular music. Volume Seven features alternative rock and country artists, from Ben Harper with his ode to lesbianism (*Mama's Got a Girlfriend Now*), to the Cowboy Junkies (*Pale Sun*), to the Counting Crows (*Mr. Jones*) and the minimalist Morphine



(*You Look Like Rain*). Only once (the Violent Femmes' *American Music*) does the program turn tedious. Otherwise, these are intimate, involving performances. Bela Fleck and the Flecktones steal the show for sheer musicianship and best-mixed instruments on the banjo space-jazz instrumental, *Magic Fingers*. But there's plenty here to feast on, starting with Hot Tuna's *Praise the Lord and Pass the Snakes*, an exercise in supreme religious faith and Southern rock guitar. A keeper. *A.N.*

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JAZZ **DAVE BRUBECK****Just You, Just Me**

TELARC JAZZ 83363 (58 min)

Performance: Striking (but softly)**Recording:** Very good

In the Fifties, Dave Brubeck invaded college campuses with a pummeling, polytonal piano style that was the antithesis of Teddy Wilson's elegant runs. In his highly popular quartet, Brubeck's hefty technique contrasted with Paul Desmond's ethereal alto sax to produce a distinct, engaging sound. In recent years Brubeck's music has been multi-directional, and his latest release—his first solo outing since 1957—is his most compelling to date.

"Just You, Just Me" is an absorbing, visceral journey through a set of familiar material and original compositions: Brubeck is



mostly subdued and lyrical, but he imbues his variations with occasional rhapsodic flashes. A simple Tin Pan Alley tune like *I Married an Angel* becomes an intricate weave of ideas, and the Depression classic *Brother, Can You Spare a Dime?* is turned into a stunning, multicolored quilt. In the album notes, Brubeck describes his approach as being "almost in the form of free association," pointing out that he more or less made up the program on the spot and that eleven of the twelve tracks are first takes. The single exception is *I Understand*, which he recorded in three entirely different ways before choosing one. According to Brubeck, that is how he plays at home—let's hope he shares such honest expression with us again soon.

C.A.

BENNY CARTER**Elegy in Blue**

MUSICMASTERS JAZZ 65115 (69 min)

Performance: Forthright**Recording:** Very good

There is barely a phase of jazz that Benny Carter has not experienced first-hand or contributed to. Born in 1907, he was playing professionally when New Orleans musicians were still planting the seeds of Swing. A multi-instrumentalist/composer/arranger with major Hollywood film scores to his credit, he continues to play with the vigor and freshness of a much younger musician.

"Elegy in Blue" is this venerable sage's

BEAT NOIR

"1972") is a lavish, six-CD set that chronicles the history of black pop, from the jump bands of Louis Jordan to Motown to the beginning of the disco era, in the process making available a lot of music not previously accessible in digital format. All the greats are here—Roy Brown, Joe Turner, Ray Charles, Bo Diddley, Little Richard, Marvin Gaye—and, as usual with Rhino compilations, this one is accompanied by lots and lots of informative notes, discographies, and cool rare photos. Of course, no package of this kind can be *completely* complete, but if there's a better anthology of this stuff out there, we haven't seen it. A must for anybody who cares about the development of American music.

S.S.

tribute to nine deceased colleagues who made their mark pioneering jazz forms that range from New Orleans traditional to Swing and Bebop: trumpeters Louis Armstrong, Roy Eldridge, Charlie Shavers, and Lee Morgan, saxophonists Ben Webster and Johnny Hodges, Duke Ellington, Thelonious Monk, and the extraordinary Belgian guitarist Django Reinhardt. It all adds up to a set of enduring music that swings across stylistic boundaries. Besides Carter's own alto, the featured sextet comprises trumpeter Harry "Sweets" Edison, pianist Cedar Walton, and a rhythm section effortlessly propelled by guitarist Mundell Lowe, the ever-reliable Ray Brown, and drummer Jeff Hamilton. Together, they produce an unpretentious sound that's a nice contrast to today's robojazz.

C.A.

THAD JONES-MEL LEWIS**The Complete Solid State Recordings of the Thad Jones/Mel Lewis Orchestra**

MOSAIC 131 (five CD's, 264 min)

Performance: Landmark**Recording:** Excellently remastered

Here's yet another treasure-box from Mosaic, a mail-order reissue label that has lately been specializing in big bands. Not merely the most illustrious big band to con-

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See Part I of the exam on page 133 and Part II on page 135.

vene in the Sixties, the outfit brought together under the joint leadership of trumpeter Thad Jones and drummer Mel Lewis at the Village Vanguard in New York's Greenwich Village in 1966 may have been the most unusual of all time. Formed during a period inhospitable to big bands, this was probably the first orchestra since the one Chick Webb led at the Savoy Ballroom in the Thirties to be associated with a home venue rather than a keynote sound. Its members were mixed almost fifty-fifty in an era when relationships between black and white musicians were growing increasingly tense. During the first four years of its existence (the period detailed here), it was essentially a soloist's band, despite Jones's acknowledged stature as a composer and arranger.

The band's initial assets included a thick book of Jones arrangements (many written for Basie, but never used by him), a formidable drummer in Lewis, and a distinguished flock of veteran soloists including Jones, Pepper Adams, Bob Brookmeyer, and Jerome Richardson (joined or replaced by the likes of Jimmy Knepper, Phil Woods, and Billy Harper as time went on). All of these strengths are handsomely displayed here on pieces such as *A Child Is Born* (Jones's most often-played composition), the buoyant *Mean What You Say*, and the enjoyably frenetic *Fingers*, a showcase for Harper and the virtuoso bassist Richard Davis. The occasional chart by trombonist Brookmeyer gives a sense of the band's evolution following Jones's defection in 1979. Though Jones had few equals in scoring reeds, Brookmeyer made more telling use of the band's total resources.

But that is splitting hairs; very little here fails to excite in the way only a great big band can. And as a bonus Mosaic has eliminated the unnecessary echo that compromised the original Solid State and Blue Note LP's. (The set is available from Mosaic Records, 35 Melrose Place, Stamford, CT 06902; telephone 203-327-7111.) *F.D.*

MARCUS ROBERTS

Gershwin for Lovers

COLUMBIA 66437 (56 min)

Performance: Disappointing
Recording: Very good

After a series of noteworthy Novus releases, pianist Marcus Roberts has moved to Columbia, but something seems to have happened along the way, and it doesn't sound good. "Gershwin for Lovers" finds the pianist navigating through familiar fare, straining to achieve the personal style that has eluded him thus far. His long-time colleagues from the Wynton Marsalis group—bassist Reginald Veal and drummer Herlin Riley, Jr.—try valiantly to help him through this set, but only rarely does the music flow. When it does—as on *They Can't Take That Away from Me* and *Nice Work if You Can Get It*—Roberts is captivating, and his solo performance of *Someone to Watch Over Me* is worth hearing more than once. But too often he merely sounds labored, and annotator Tom Piazza's liner notes are doubletalk worthy of Professor Irwin Corey. *C.A.*

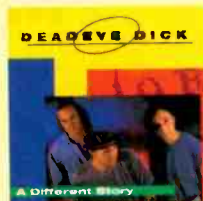
QUICK FIXES

BARBARA COOK

Live from London

DRG 91430 (67 min)

By combining one of pop music's warmest, most supple light-soprano voices with a mesmerizing way with lyrics and impeccable taste in material, Barbara Cook can still command an audience like few other singers. She's at the top of her form in this program (ranging from Arlen and Sondheim to Amanda McBroom and Peter Allen), recorded live last July in London with Wally Harper leading the A+ accompaniments. A very classy job. *R.H.*



DEADEYE DICK

A Different Story

ICHIBAN 6501 (33 min)

New Age Girl, the first single from "A Different Story," has been a surprise hit for these young power-poppers, and it's not hard to see why—it's a clever pastiche of early-Eighties skinny-tie stuff à la Joe Jackson and Rick James. Unfortunately, it's also got an undercurrent of obnoxious frat-boy smirk, and so does the rest of the album. *S.S.*

HOLLYWOOD NIGHTMARES

PHILIPS 24252 (72 min)

Horror-film music from the original *Phantom of the Opera* through *Jurassic Park*, gorgeously recorded and spectacularly performed by John Mauceri and the Hollywood Bowl Orchestra. Mauceri's take on the suite from Bernard Herrmann's *Vertigo* actually trumps the composer's own. *S.S.*

NEW WAVE HITS OF THE '80'S:

Just Can't Get Enough, Vols. 6-10

RHINO 71699-710703 (five CD's, 280 min)

More post-punk nostalgia, and despite a certain fall-off in quality from the series' first five volumes (face it: Kajagoogoo must die) there are still a number of gems included here that you probably haven't got on CD. Most Valuable Players: the Call's gloriously apocalyptic *When the Walls Come Down* and the English Beat's ineffably catchy *Save It for Later*. *S.S.*

NOMAD

AUSTRALIAN MUSIC INTERNATIONAL

4004 (45 min)

This high-energy program contains some ingredients that are common in world-mu-

sic recordings—a tribute to the environment, music of West Africa, Native American music—but the admixture of Australian aboriginal music, which is rare, gives it an unusual and highly individual flavor. Rhythmic, percussive, pretty, and rather hypnotic. *William Livingstone*

THE REVELS

Intoxical The Best of the Revels

SUNDAZED 11020 (42 min)

Most obscure early-Sixties surf bands deserve their obscurity for all the right reasons. But these guys—authors of the rousing *Church Key* and lately rescued from history's dustbin via the soundtrack of *Pulp Fiction*—are something else, a genuinely tough little party band with more R&B roots than most of their contemporaries. Highly recommended, and not just to genre fanatics. *S.S.*

BOB SEGER AND THE SILVER BULLET BAND

Greatest Hits

CAPITOL 30334 (63 min)

Bob Seger, who programmed this set himself, deliberately omitted his early regional hits—genuinely exciting metallic rockers like *Rambling Gambling Man* and *Heavy Music*—in favor of the nostalgia-mongering (*Night Moves*) and ready-for-Chevy-ad stuff (*Like a Rock*) that currently pay his bills on Lite-FM radio stations. That's not just historical revisionism—it's thoroughly depressing. *S.S.*

THE SOUNDS OF

DEMONS & DEMENTIA

BAINBRIDGE 2008 (66 min)

This collection of the sounds of creaking doors, moans, screams, gunshots, thunder, howling wolves, and so forth is good for laughs, for little theater productions, or perhaps for breaking leases or frightening your neighbors. It's fun, but keep the volume low or someone will surely call the police. *W.L.*



YOU GOT LUCKY: A TRIBUTE TO TOM PETTY

BACKYARD 75450 (52 min)

Familiar songs (most of them radio hits) done by lesser-known alternative bands, and primarily useful as an illustration of how much rock has changed since Tom Petty—himself once considered alternative—emerged in 1976. Which is to say that passion and pop concision are replaced here by ironic distance and squalls of guitar distortion. Pick hit: Everclear's crude but energetic assault on the indestructible *American Girl*. *S.S.*



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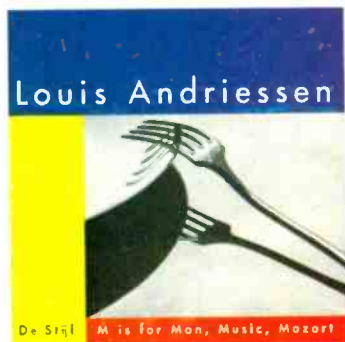
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ANDRIESSEN: De Stijl
 Schönberg and Asko Ensembles, De Leeuw
M Is for Man, Music, Mozart
 Orkest de Volharding, Hempel
 ELEKTRA NONESUCH 79342 (54 min)
Performance: Knockout
Recording: Powerful

Louis Andriessen (born 1939 in Utrecht, the Netherlands) just might be the most important and influential European composer on the scene today, and he ought to be better known in this country. His music shows strong American influences—from jazz, from rock and pop, from John Cage, and from the minimalists—but he's very much his own man.

De Stijl is a tribute to his countryman Piet Mondrian and, in particular, the painter's famous picture "Broadway Boogie Woogie." The musical form of the piece is notable: female voices hover above a driving percussive rhythm of repeated notes and chords. This "style" (*De Stijl* means "The Style" and refers to a famous Dutch artistic movement of which Mondrian was a part) derives not only from Mondrian but also from Stravinsky as well as from Glass, Reich, Adams, and others. The riffs come from jazz and rock; even the spoken lines are a kind of Dutch version of rap. But the intensity and formal power are all Andriessen's own.

M Is for Man, Music, Mozart was written for a BBC television film by Peter Greenaway. It is a sort of anti-bicentennial tribute to Mozart that alternates instrumental movements with vocal settings of texts (by Andriessen and Greenaway) in a sort of Stravinskian/Weillian surrealist cabaret. Lighter and more affecting than its companion work (it quotes Mozart), it is at once clear and enigmatic, detached and compelling, contradictions very much at the heart of Andriessen's work.

The Orkest de Volharding, a mixed jazz and classical ensemble founded by Andriessen

over twenty years ago (here conducted by Jurken Hempel), and the Schönberg and Asko Ensembles (under the excellent Reinbert de Leeuw) are strong and experienced new-music performers, and these are first-rate recordings that capture the spirit and knockout power of the music. *E.S.*

ARNOLD: Symphony No. 6; Fantasy on a Theme of John Field; Sweeney Todd, Suite; Tam o' Shanter Overture
 Lill; Royal Philharmonic, Handley
 CONIFER 16847 (78 min)
Performance: Excellent
Recording: Outstanding

Many who know Malcolm Arnold only for his movie scores, the English Dances, or some of his overtures and concertos may not even be aware that he has composed nine symphonies. The Sixth, from 1967, is at once engaging, provoca-

tive, and powerful. Arnold's references to the great jazz saxophonist Charlie Parker and "a style of Pop music which will be dead by the time the work is performed" are analogous to Mahler's uses of popular material of his time.

No less substantial is the Fantasy on a Theme of John Field, which Arnold calls "a one-movement concerto" (it was composed in 1975 for John Lill, the authoritative and persuasive soloist in the recording). Piers Burton-Page describes it in the annotation as a sort of "battle for light and stability as against the destructive forces of satire and irony."

The concert suite that David Ellis prepared ten years ago from Arnold's score for John Cranko's 1959 ballet *Sweeney Todd*, as different as could be from Stephen Sondheim's subsequent treatment of that legend, is filled with the most sophisticated wit and

BEETHOVEN'S "IMMORTAL BELOVED"

All my music and all the capital of my estate shall go to my sole heir . . . my Immortal Beloved." These words, found in a letter among Beethoven's papers after his death, inspired the new movie *Immortal Beloved*, starring Gary Oldman as Beethoven and Isabella Rossellini as the Hungarian Countess Anna Maria Erdody, who may actually have been the composer's Immortal Beloved. The movie is scheduled to open in New York, Los Angeles, and San Francisco on December 16 (Beethoven's birthday), with a wider release in January. The soundtrack on Sony Classical, released early in December, features some of Beethoven's greatest works performed by Georg Solti and the London Symphony, Yo-Yo Ma, Emanuel Ax, Gidon Kremer, Murray Perahia, and others.



Isabella Rossellini as Countess Anna Maria Erdody and Gary Oldman as Beethoven in the Columbia movie



PHOTOS: KEITH HANSHIRE/SONY CLASSICAL

an abundance of enticing colors. Here it provides an effective transition to the best-known piece on the disc, the tumultuous *Tam o' Shanter* Overture (actually a brilliant little tone poem)—and what a grand workout it gets! Conductor Vernon Handley's rumbustious, swaggering reading, with Derek James's stupendous trombone solo and demonstration-class sound, provides an irresistible finale to a fascinating program. *R.F.*

BACH: Cello Suites

Nathaniel Rosen
JOHN MARKS RECORDS JMR 6
(two CD's, 137 min)

Performance: Electric
Recording: Reverberant

Nathaniel Rosen's recording of the six Bach cello suites are the kind of deeply considered readings we'd expect of a mature artist, but there's no lack of the technical sparkle and shameless electricity that helped Rosen win the 1978 Tchaikovsky Competition. His luxuriously confident double-stopping makes his instrument growl ominously in the darkly cast Fifth Suite, and his explorations of its often unstable upper range in the Sixth Suite show a spectacularly firm sense of line. There's a brisk pulse and a dance quality in his performances of all the suites; acquaintance with early-music performance practices may have suggested to him convincing ways to play passages that often seem ungainly on a modern cello.

Occasionally there's *too* much of a sense of dance, conjuring up visions of rustic celebrations, but such momentary lapses in taste are a small price to pay for Rosen's leaps of imagination in these performances, which give both personal expression and musical architecture their due, and to great effect. The recording's reverberant ambience makes it difficult to pick out details, which are often buried. *D.P.S.*

BRUCKNER: Symphony No. 7

Vienna Philharmonic, Abbado
DEUTSCHE GRAMMOPHON 437 518
(64 min)

Performance: Lyricism prevails
Recording: Good

Claudio Abbado's previous excursion into Bruckner was by way of the "Romantic" Symphony (No. 4), whose many bucolic aspects proved well suited to his Italianate lyrical temperament. I felt the lyrical element to the full in this recording of No. 7, but I sensed little of the mystical element inherent in the extended melodic lines of the first movement, or in the sublime slow movement with its closing Requiem for Richard Wagner. Downplaying the mysticism may be an effect of Abbado's use of the Leopold Nowak edition of the score, which incorporates modifications of tempo that were made following the work's premiere, rather than the Robert Haas edition favored by purists.

Abbado's approach works fine for me in the first movement, but the slow movement lacks intensity and a sense of irreversible progress toward its climax. He gives us a

Sure Thing



Chances are you think of Mozart or Handel when you hear the name of Sylvia McNair. The soprano's exquisite contributions to Philips recordings of Mozart's *Requiem*, *Mass in C Minor*, and *Il Re Pastore* and of Handel's *Messiah*, as well as her solo album of Handel cantatas and Mozart's *Exsultate, Jubilate*, certainly support that association. But this versatile, Ohio-born singer's tastes are varied—perhaps more varied than you'd expect.

McNair's new Philips solo album, "Sure Thing," consists of songs by the American composer Jerome Kern, with André Previn accompanying her on the piano. A big leap? McNair doesn't think so. As she told STEREO REVIEW's own William Livingstone, "If you grow up in America and spend much time at Grandma's house, as I did, your childhood is steeped in the Broadway and film music of the Twenties, Thirties, Forties, and Fifties. . . . Singing this music came very easily to me. . . . It's not very different from when Elisabeth Schwarzkopf and Richard Tauber sang the operettas of Lehar and Strauss."

fiery, headlong scherzo, losing most of its Austrian *Ländler* flavor along the way. He does apply tempo fluctuations in the finale, but as judiciously as elsewhere in the performance: the final chord, however, seems a bit off the mark rhythmically, and thereby inconclusive. Compared with the half-dozen superlative Bruckner Seventh's that have come my way on record since the mid-1930's, this one is a near miss. The sonics, though, are well up to the highest standard set by other recent recordings in the Large Hall of the Vienna Musikverein. *D.H.*

DAVIES: Symphony No. 2

BBC Philharmonic, Davies
COLLINS 14032 (57 min)

Performance: Sloppy but worthwhile
Recording: Good

Peter Maxwell Davies has written numerous works inspired by living on the austere Orkney Islands north of Scotland, but few of them have melded as seamlessly with traditional symphonic form as his Symphony No. 2 (1980). Though initially inspired by the different varieties of ocean waves outside his window, it has a well-defined symphonic argument and, thanks to some deft use of the percussion section, is not nearly as somber as other Orkney mood pieces. Each of the four movements reflects the classic symphonic structure, though that easily accommodates a number of other compositional layers, including a plainchant of the Blessed Virgin Mary.

But it's hardly a case of form over content, even by Davies's inventive standards. The different orchestral choirs—strings, winds, and percussion—interact like characters in some expressionist drama. Though Davies was not able to secure a particularly polished performance from the BBC Philharmonic, it'll do just fine for now. *D.P.S.*

DVORAK: Symphony No. 9

("From the New World")
Czech Philharmonic, Neumann
DENON 79568 (42 min)

Performance: Satisfactory
Recording: Excellent

Although this December 1993 concert recording is billed as a celebration of the centenary of the Dvorak "New World" Symphony's world premiere, which took place in New York's Carnegie Hall on December 16, 1893, the Czech Philharmonic's veteran maestro, Vaclav Neumann, brings to his reading more in the way of sound musicianship than a sense of exceptional occasion. There's no exposition repeat for the opening movement, but, on the plus side, there's lovely work from the first-chair winds and excellent sound. Still, a half-dozen other versions on CD offer both more passion and more distinctive interpretations. It also would have been nice to have a filler work to flesh out the scrawny 42 minutes of playing time. *D.H.*

ENESCU: Romanian Poem; Symphony No. 3

Romanian National Radio Choir and Orchestra, Andreescu
OLYMPIA 443 (71 min)

Performance: Fervent
Recording: Adequate to good

Georges Enescu's *Romanian Poem* was written in 1897, when he was fifteen years old but had already graduated from the conservatories of Paris and Vienna. A gorgeous-sounding, 26-minute, two-part work for outside orchestra plus organ and wordless chorus, it starts out in an atmospheric, almost Wagnerian or Impressionist way. Toward the end, following a splendid storm episode, it becomes straight-out nationalistic in the manner Enescu perfected in the Romanian Rhapsodies, finishing with

Forever Fiedler



December 1994 marked the hundredth anniversary of the birth of Arthur Fiedler, the long-time conductor of the Boston Pops, and BMG Classics celebrated with several reissues and compilations of his best-selling RCA recordings with the orchestra. "Arthur Fiedler: The Collection" combines three very popular Living Stereo recordings also available as single CD's: "Marches in Hi-Fi," "Gaité Parisienne," and "Hi-Fi Fiedler." A single CD titled "Strauss Family Waltzes" brings together two other popular albums, "Strauss Waltzes" and "Vienna Nights," while "Arthur Fiedler and Friends" matches the maestro with a variety of singers (from Kate Smith to Leontyne Price) and instrumentalists (from Duke Ellington to Chet Atkins). And for really hard-core Fiedler fans, a seven-CD set, "100 Fiedler Favorites," offers something for just about every musical taste and comes with a commemorative booklet with photos and notes by his daughter Johanna, whose book *Arthur Fiedler: Papa, the Pops, and Me* was published last September by Doubleday.

an all-stops-out version of the Romanian Royal Anthem. On its own level, the whole affair is handsomely crafted.

The Third Symphony, in C Major (1916-1919), is an entirely different matter, representing the mature Enescu in peak form. Its complex textures are demanding on both performers and listeners, and the musical language is eclectic in the best meaning of the word—certainly it transcends any sort of musical "nationalism." The composer is said to have intended to evoke Western Europe on the eve of World War I in the first movement, the onset of war and its consequent horrors in the second, and an uneasy vision of a hoped-for peace in the third, with its prominent role for wordless chorus. Whether you pay attention to this program or not, the music will give your ears and intellect a real workout.

If the fervor of conductor Horia Andreescu could do it all, this recording would be a real blockbuster. But to my ears it seems no more than a perfectly decent broadcast

performance, with the *Romanian Poem* benefiting from a more spacious acoustic than the symphony, where the miking seems overly close. *D.H.*

HAYDN: Symphonies No. 100 ("Military") and No. 101 ("The Clock")
Chamber Orchestra of Lausanne, Lopez-Cobos
DENON 78903 (50 min)

Performance: Neat as a pin
Recording: Excellent

The Chamber Orchestra of Lausanne is beautifully trained and gives us elegantly turned performances of these two Haydn symphonies in tasteful yet vital readings under Jésus Lopez-Cobos. Though modern instruments are employed, the orchestral forces approximate those of Haydn's day so that everything is in proper perspective dynamically, in orchestral *tutti* as well as between winds and strings.

The "Military" Symphony gets a straightforward, middle-of-the-road treatment that's thoroughly pleasing to the ear, with no attempt to exaggerate the "Turkish music" effects in the second and last movements. The performance of "The Clock," on the other hand, is full of character, with a marvelously virile first movement, a "ticking" andante in which time both flies and flows, and a bracingly lively minuet. The vivace finale is delectably paced, and the execution of Haydn's intricate development is brilliant. The sonics and acoustic surround are just right. A most enjoyable disc. *D.H.*

LULLY: Phaëton

Soloists: Ensemble Vocal Sagittarius; Les Musiciens du Louvre, Minkowski
ERATO 91737 (140 min, two CD's)

Performance: Alive and refined
Recording: Atmospheric

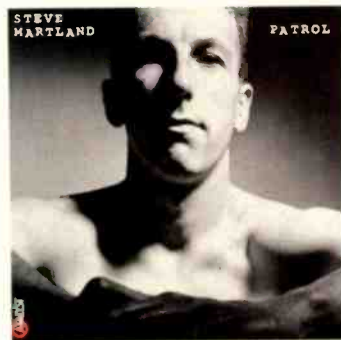
The most famous and powerful figure in French Baroque opera, Jean-Baptiste Lully is often characterized as a megalomaniac who secured a monopoly over dramatic musical productions in Paris in order to keep his more talented contemporaries from infusing greater dramatic depth and imagination into French lyric tragedy. With the 1683 *Phaëton*, however, he delivered an especially rich, compelling opera with a fascinating subtext.

In dramatizing Philippe Quinault's exceptionally fine libretto, Lully no doubt saw himself in the mythical title character, the son of the sun, whose combination of ambition, arrogance, personal magnetism, disregard for human relationships, and, above all, vision drives him to a level of glory that would eventually destroy him. Lully's char-



acteristic melding of recitative and aria rarely seems as fluid and purposeful as in this work, and his combination of mandolins and finger cymbals is delightfully exotic.

There are some routine moments and odd touches, such as the castanets in the dance of the Furies, but overall, lovers of French Baroque opera will want to hear *Phaëton*. The lively performance, directed by Marc Minkowski, is from the production that opened the newly restored Opéra de Lyon, which, judging from this recording, has full, rich acoustics. The cast—Howard Crook, Rachel Yakar, Jennifer Smith, Veronique Gens, and Philippe Huttenlocher—performs with such dramatic involvement that they make other recent recordings of French operas seem superficial. *D.P.S.*



MARTLAND: Patrol

Steve Martland Band
Danceworks; Principia
Smith String Quartet
BMG CATALYST 62670 (58 min)

Performance: Powerful
Recording: In your face

Steve Martland has become the leader of a whole new generation of British composers who are redefining what British music is about. His music, somewhat like that of his Dutch mentor Louis Andriessen, typically incorporates strong pop and jazz elements with the sounds and forms of minimalism—a fresh use of tonality, mind-boggling repetition, and endless amounts of energy. There are also a few elements from old-world musical traditions, more medieval and Baroque than Romantic or modernist.

Martland's fusion style can be found in a rather direct and rather pure form in *Danceworks*, written for a dance-theater piece, and *Principia*, which serves as a theme song for a BBC children's program. The music is strong-minded: rhythmic, repetitive, loud, and brash. The CD's title work, *Patrol*, somewhat surprisingly, is more like a traditional string quartet, with alternating slow movements and a finale that is particularly refined and even exquisite.

The Smith String Quartet is yet another good British rival of the Kronos Quartet. The Steve Martland Band is rival to nothing except perhaps the traditional orchestra; it is an old-fashioned big band remade for our time. These cutting-edge performances are impressive. The sonics, however, are a little *too* in-your-face for my taste, and I'm not sure how literally I would take the composer's note that the CD "should be played at

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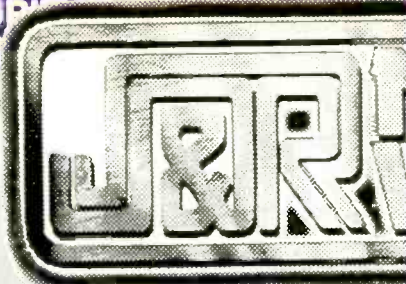
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AGIT-PROP OR ART?

Recent CD's by the great Russian émigré conductors Mstislav Rostropovich and Vladimir Ashkenazy, devoted to music that Dimitri Shostakovich wrote to glorify the Soviet Union, raise the question of how well these works can survive the political entity whose need for inspirational art occasioned their composition.

Rostropovich leads the London Symphony and the London Voices in a Teldec CD comprising the Symphony No. 2, subtitled "To October" and written in honor of the tenth anniversary of the Bolshevik revolution, and the Symphony No. 3, bearing the inscription "The first of May" and similarly commemorative. Ashkenazy also offers the Symphony No. 2 on a new London CD of material recorded with the Royal Philharmonic between 1989 and 1992 that includes such later works of "socialist realism" as the symphonic poem *To October* (on the same historical theme as the symphony), the *Festival Overture*, and *The Song of the Forests*, a large cantata celebrating Stalin's reforestation program.

The work of a composer not yet in his mid-twenties, the Second and Third Symphonies were commissioned at a time when composers, artists, and writers were still allowed to glorify Communism in just about any idiom they chose. Full of untrammelled exuberance and hope for the future, they also reflect a cinematic flair Shostakovich gained from his early work improvising piano accompaniments for silent films in seedy Leningrad theaters.

The opening of the Second, with its complex polyphony and free-floating tonality, could have been composed by Charles Ives. The music eventually coalesces into a militant sung and shouted choral finale, complete with factory-whistle blasts. The Third is a good 10 minutes longer and sprawls somewhat, but it contains fascinating precursors of episodes in the controversial Symphony No. 4 (which reached rehearsals in 1936 but was suppressed, unheard by the public for another twenty-five years). Elements of a nonpolitical spring celebration are juxtaposed with passages of revolutionary fervor, and an intensely dramatic orchestral recitative paves the

way for another choral finale. The performances by Rostropovich and his London forces are dead right in terms of capturing both the letter and the spirit of the scores. The recorded sound is good, if not as spectacularly rich and detailed as on Ashkenazy's disc.

Ashkenazy's reading of the Symphony No. 2 is no match for Rostropovich's in terms of spirit, however, and the choral finale is decidedly weak in comparison. The cantata *The Song of the Forests*, written when Shostakovich was in the ideological doghouse, is well crafted in a pallid neo-Mussorgskian fashion but amounts to long-drawn-out bombast. The tenor and bass soloists, Mikhail Kotliarov and Nikita Storjev, are a bit wobbly but adequate. The choruses give a good account of themselves in this work, especially the New London Children's Choir. The brief *Festival Overture*, composed in 1947 but not performed until 1953, is understandably popular, but Ashkenazy's performance is up against a half-dozen competitive versions on CD.

The symphonic poem *October* dates from 1967. Although that period gave birth to some of the composer's finest late works, this one strikes me as no more than an effective scissors-and-pastepot job, with echoes of Shostakovich's film music and such somber masterpieces as the Symphony No. 10. But it is decidedly a cut above the cantata and the overture. All in all, the Ashkenazy CD is more interesting as history than as music, with the readings at their best in the lyrical passages. The sonics, though, are sumptuous.

David Hall

SHOSTAKOVICH:
Symphonies Nos. 2 and 3

London Voices; London Symphony, Rostropovich cond.
TELDEC 90853 (48 min)

SHOSTAKOVICH:
Symphony No. 2; The Song of the Forests; Festival Overture; October

Soloists; Brighton Festival Chorus; New London Children's Choir; Royal Philharmonic, Ashkenazy cond.
LONDON 436 762 (72 min)



HIGH VOLUME!" But it's about time that his music became known here, and this recording is another feather in the Catalyst label's cap. E.S.



RIMSKY-KORSAKOV: Scheherazade
STRAVINSKY: Scherzo Fantastique

Royal Concertgebouw Orchestra. Chailly
LONDON 443 703 (59 min)

Performance: Expansive
Recording: Excellent

Rimsky-Korsakov happened to compose his orchestral masterwork in the same year the Concertgebouw was opened in Amsterdam and the orchestra bearing its name was founded, and, in many respects, this performance does sound as if the music and the orchestra were made for each other. Riccardo Chailly's reading is one of the most expansive and broadest yet recorded, yet it never lacks momentum or cogency, and he makes a tastefully convincing case for the sheer gorgeousness at the heart of the work.

The gem here, though, is Stravinsky's early *Scherzo Fantastique*, which was dedicated to Rimsky (who died before the première). It is delivered with such animation and delicacy that there is just no doing without it. The piece has been fortunate in its previous recordings, beginning with the composer's own, but this is the one that could turn it into a repertory staple—and, more immediately, persuade collectors to add still another *Scheherazade* to their shelves. R.F.

SCHUMANN: Piano Quintet
BRAHMS: Piano Quintet

Vladar; Artis Quartet
SONY 58954 (70 min)

Performance: Exuberant Schumann
Recording: Piano forward

The almost belligerently assertive opening of the Schumann quintet here certainly does make the listener sit up. What it signals, apparently, is an interpretive approach that seeks to convey the white-hot inspiration and driving energy that impelled Schumann through the creation of this beloved work. Once they've established that premise, pianist Stefan Vladar and the Artis Quartet mitigate their initial ferocity in favor of a more engagingly warmhearted exuberance, but the entire performance is unusually enlivening, and the piece is surely none the worse for that.

The performance of the Brahms quintet, on the other hand, never quite comes together, leaving the impression that the play-

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ers were not as fully engaged by it. It stays pretty much on the surface, and matters are not helped by the sound quality, which is conspicuously less well defined than in the Schumann, and also less appealingly balanced, with the piano thrust too far forward and the strings treated more as back-up performers than co-participants. For this eminently reasonable combination of titles, both the ASV disc with Peter Frankl and the Lindsay Quartet and the Naxos with Jenö Jando and the Kodaly Quartet are more consistently satisfying, and the latter is quite an exceptional buy. *R.F.*

R. STRAUSS: Der Rosenkavalier
Soloists; Vienna State Opera Chorus; Vienna Philharmonic, Böhm
DEUTSCHE GRAMMOPHON 445 338
(three CD's, 188 min)
Performance: Very good
Recording: Very good

Karl Böhm, already seventy-five when this performance was recorded live at the 1969 Salzburg Festival, appears to have been still in full possession of Straussian authority. His pacing of the early scenes could do with a shade more sentiment, but everything falls into place thereafter, and



Composer John Tavener

the intricate strands of the tumultuous third-act Prelude are laid out in masterly fashion.

Christa Ludwig, once a superb Octavian, is a remarkable Marschallin here. Wise, pensive, philosophical, and, in the end, resigned but determined—she conveys all these qualities through telling nuances and plush and endearing tones. While her dark mezzo-soprano does not make for a sharp contrast with the luscious timbre of mezzo Tatiana Troyanos, both artists are individual enough for the listener to distinguish them. In any case, it is a joy to have Troyanos's ardent and impulsive Octavian captured in her vocal prime, although her enunciation lacks the clarity she was to achieve in her later performances of the role.

Soprano Edith Mathis reveals a great deal of temperament and brings a richer lyrical sound to her portrayal of Sophie than do most interpreters of that role. Attractive tone quality is what bass Theo Adam does *not* possess, given the wide vibrato in his sustained notes, but he eches the character of Baron Ochs with stagewise assurance and without excessive vulgarity, and occasionally he even succeeds in infusing his Saxon phrases with a faint Viennese overlay. The supporting cast is strong, and Böhm grants Anton de Ridder, as the Italian singer, enough latitude to do some impressive tenorizing.

The familiar theatrical cuts are observed—no complaints from this corner. Despite the recording's age and provenance, the sound calls for no apologies. Moreover, stage noises are not intrusive, the audience is on good behavior, and applause is heard only at the end of each act. A welcome release on all counts. *G.J.*

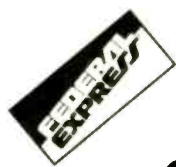
TAVENER: Akathist of Thanksgiving

Soloists: Westminster Abbey Choir; BBC Singers; BBC Symphony, Neary
SONY 64446 (78 min)

Performance: Inspired
Recording: Spacious

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Greek island, Tavener has devoted most of his career to composing transcendent music for the Orthodox liturgy. While that may not sound like a terribly sexy concept for a career, he has established himself as one of most gifted, original, and listenable of contemporary composers, and this disc makes a good introduction to his work.

An *akathist* is a hymn of thanksgiving: the text for this example of the genre was written by a priest in a Stalinist prison camp in Siberia shortly before his death. The words (thankfully sung in English translation) are inspirational, and this performance is inspired: The superb English choirs lay down rich curtains of sound that overlap and gradually build to an overwhelming climax. Countertenors James Bowman and Timothy Wilson blend beautifully in their duets, and the strings and percussion of the BBC Symphony are used sparingly under Martin Neary's direction to jewel the sonic tapestry. The live recording perfectly captures the soaring ambience of Westminster Abbey. *J.J.*

**TCHAIKOVSKY: Trio in A Minor
ARENKY: Trio No. 1, in D Minor**

Bronfman; Lin; Hoffman
SONY 53269 (76 min)

Performance: Warmhearted
Recording: Piano up front

The popular and highly effective D Minor Trio by Anton Arensky is becoming a favored filler for recordings of the celebrated trio that Tchaikovsky composed in memory of his mentor, Nikolai Rubinstein. The performers here—pianist Yefim Bronfman, violinist Cho-Liang Lin, and cellist Gary Hoffman—make up an all-star team of young virtuosos.

While Bronfman's playing in the Tchaikovsky packs power aplenty, Lin's violin more than holds its own throughout. Hoffman's cello tone may not equal the richness of Lynn Harrell's in the Angel recording of this trio with Askenazy and Perlman, but he has a better chance to show his stuff in the Arensky, which was dedicated to the cellist Karl Davidov.

I have no reservations regarding any aspect of the performance of that work or of the Tchaikovsky, which abounds in warmth in the elegiac portions and in piquancy throughout the genre pieces that comprise most of the second-movement variations. When the music turns serious again in the finale, Bronfman unleashes some awesome pianistic firepower that's very exciting but tends to overpower his partners. The same thing happens elsewhere, too, in what is otherwise a rich and very satisfying acoustic frame. *D.H.*

WAGNER: Parsifal

Soloists: Metropolitan Opera Chorus and Orchestra, Levine
DEUTSCHE GRAMMOPHON 437 501
(four CD's, 270 min)

Performance: Outstanding
Recording: Excellent

The wonders of Wagner's orchestral textures and coloration emerge in a new light in this performance of *Parsifal* under James Levine, which ranges from the deli-

cacy of chamber music in intimate moments to an overwhelming flood of tone at the climaxes. It is a thoughtful, even introspective reading in which every detail has clearly been given the greatest consideration.

The same thoughtful approach is evident in the performances by the outstanding soloists Levine assembled. James Morris is a moving Amfortas; his apparently limitless fund of warm tone lends the part a fine sense of line. Kurt Moll's Gurnemanz is powerfully sung as well as a sympathetically human figure. Ekkehard Wlaschiha colors his voice effectively to create the incar-

nate evil of Klingsor, and Jan-Hendrik Rootering's rich bass is well suited to Titurel's brief but significant utterances.

Placido Domingo molds a wholly believable Parsifal. In a few passages Wagner's vocal demands seem incompatible with the tenor's Italianate instrument, but he sings with discriminating musicality throughout. Despite some moments of vocal strain, Jessye Norman copes valiantly and effectively with the hardships Wagner has presented her in the role of Kundry.

Still, despite its stirring moments, overall this new recording lacks some of the drama

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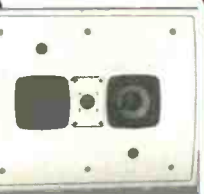
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of Levine's previous *Parsifal*, recorded at Bayreuth in 1985. R.A.

WEBER: Der Freischütz

Soloists: Rundfunkchor Berlin; Deutsches Symphonie-Orchester Berlin, Janowski
RCA VICTOR 62538 (two CD's, 130 min)
Performance: Good direction, but . . .
Recording: Very good

Marek Janowski projects the colorful and endlessly inventive scoring of Weber's *Der Freischütz* with well-judged tempos—propulsive when needed and carefully attentive to lyrical expansions—and

with fastidious attention to the opera's many instrumental felicities. (It is presented uncut, including virtually all spoken passages.)

The singing is uneven, however. Among the principal roles, only the portrayals of Max and Annchen rate unqualified approval. Some low-lying passages find Peter Seiffert uncomfortable, but I'd be hard put to find another tenor on records who has equaled his portrayal of Max, the errant if basically honest huntsman. Good musical instincts and a forthright, unmannered delivery combine in making Seiffert prominent among light-dramatic German tenors.

Ruth Ziesak is a charming Annchen, delivering both her arias with verve and without excessive soubretish antics. The cast is further strengthened by the authoritative Ottokar of Andreas Schmidt and the resonant Hermit of Matthias Hölle.

Weber wrote two glowing arias for Agathe, which are sung here with musical accuracy but in a thoroughly earthbound manner by soprano Sharon Sweet. The arias, though, are still the best part of her performance: Her vibrato loosens in the extended finale, where the recurrent G-sharps above the staff turn unpleasantly strident. Bass Kurt Rydl's Caspar is likewise disappointing. He sounds properly mean and venomous in his dialogues, but he cannot sustain long notes without a waver. Unfortunately, in the Wolf's Glen episode—which is otherwise excitingly paced—his part is full of such notes.

Except for Sweet, whose dialogues are capably rendered by an actress, all the principals speak their lines themselves. The singers are closely miked throughout, a procedure that brings Caspar's bitter asides in the opening scene into undue prominence. The recording, nonetheless, comes across with a vital impact. G.J.

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Performance: Uneven

Recording: Very good

DAWN UPSHAW

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Performance: Yeah!

Recording: Very good

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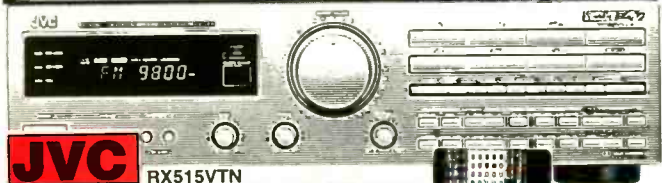
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the selections are worthy and the singers have a real feel for the vernacular. Most of today's opera singers have at least learned not to roll their r's in a pop song as obviously as Lawrence Tibbett and Helen Traubel did fifty years ago. But only a few singers have found a way to avoid an underlying feeling of "slumming." These two recent albums reflect almost polar extremes in that respect.

Although Marilyn Horne has been singing pop music as well as opera since her teen years, "The Men in My Life," an imaginative set of familiar show tunes, is unhappily uneven. Most of the time her big voice just overwhelms the simpler lyrics. And when she does try to rein in her sound, she too often gets overly cutesy. Unfortunately, in the duet selections, her male co-stars—Jerry Hadley, Thomas Hampson, Samuel Ramey, and Spiro Malas—follow her stylistic lead. The result is flamboyance and fussiness instead of fun.

Dawn Upshaw's "I Wish It So" is the exact opposite. She consistently underplays a quite different group of show tunes (mostly lesser-known but good ones by Sondheim, Bernstein, Weill, and Blitzstein). Sometimes she virtually whispers the lyrics in her sweet, light soprano, but never to the point of impairing their expressiveness. Even when she cuts loose on a couple of songs, she does it without pushing or overdoing. Among the past year's crossover albums, this one is definitely the standout.

Roy Hemming

RUTH ANN SWENSON Positively Golden—Coloratura Arias by Donizetti, Bellini, Gounod, and Meyerbeer

London Philharmonic, Rescigno
EMI 54827 (53 min)

Performance: Mostly impressive
Recording: Excellent

Ruth Ann Swenson does so many things so well that I regret having to withhold wholehearted praise for her debut recital recording. This charming soprano is an intelligent and musical singer with a winning tone she knows how to shade to a lovely pianissimo. Her upper range extends to high E-flats, which she hits confidently and accurately. Florid passages are cleanly executed, including the chromatic runs in "Vien, dilieto" from Bellini's *I Puritani*. Particularly welcome are the three Meyerbeer excerpts—rarely heard in modern renditions; the extended unaccompanied lines in "O beau pays" (from *Les Huguenots*) reveal Swenson's pure intonation. The Italian arias are lavishly ornamented in a Sutherland fashion, if not yet with the spectacular Sutherland trills.

The higher Swenson soars the happier she sounds. In midrange, however, her vibrato is too wide, leading to impure intonation—particularly damaging in the first three selections on the disc (the two by Donizetti, from *Linda di Chamonix* and *Lucia*, and the one from *I Puritani* already mentioned). Swenson receives excellent orchestral backing under Nicolo Rescigno's direction, and she has been sumptuously recorded. G.I.

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QUICK FIXES

BEETHOVEN: String Quartets Op. 74 ("The Harp") and Op. 95 ("Serioso")

Cleveland Quartet
TELARC 80351 (52 min)
Beethoven's "Harp" Quartet inhabits the extroverted world of the "Emperor" Piano Concerto, but the tautly compressed Op. 95 quartet looks forward to the gnarlier late piano sonatas. The Cleveland Quartet emphasizes the human element in the playing rather than coming across like a well-oiled machine, particularly in the scherzos. The recorded sound has a remarkable physical presence without being overbearing, and every detail of line and nuance makes its impression without seeming fussy. *D.H.*

BRUCKNER: Symphony No. 4 ("Romantic")

Philadelphia Orchestra, Sawallisch
EMI 55119 (67 min)
For all the honesty and sensitivity of Wolfgang Sawallisch's neat but not gaudy interpretation, and despite the stunning string sound in the slow movement and the elegantly executed middle section of the scherzo, the Philadelphians just don't seem as comfortable with this music as the orchestras in the best Vienna and Berlin recordings. The sound from Memorial Hall is quite good, but not in a class with the best of the competition. *D.H.*

BYRD: Mass for Four Voices; Motets

Theatre of Voices, Hiller
ECM 1512 (54 min)
It was a good idea to place William Byrd's famous Mass for Four Voices in its liturgical context with several of his motets preceding it, and to assign just one select singer to each part, but the result would be more interesting if Paul Hillier's directing didn't drain so much individuality out of his singers. The CD is filled out with short works by other Tudor composers—Thomas Tallis, John Sheppard, John Taverner, and Richard Edwards—that provide some variation in the otherwise monochromatically sober program. *D.P.S.*

COPLAND: Rodeo; El Salón Mexicano; Danzón Cubano; Billy the Kid

Baltimore Symphony, Zinman
ARGO 440 639 (78 min)
Here is all of Copland's Americana, Anglo and Latino, in muscular performances and recordings. Conductor David Zinman has avoided even the faintest trace of sentimentality or picturesqueness in these tough, rangy versions of the full ballets; what they lack in sweetness they more than make up in vivid color, supple phrasing, and rhythmic stomp. Copland emerges as a modern master even in his kitschiest moments. *E.S.*

MOZART: String Quartets No. 14 (K. 387) and No. 15 (K. 421)

Smithson String Quartet
VIRGIN 45029 (66 min)
The Smithson Quartet uses period instruments and is mindful of historical style, but it doesn't quite hit the mark in these extremely elegant but chilly interpretations. The players don't make full use of the kind of hairpin dynamic turns that their light, relatively vibrato-free sound would make possible in No. 14, and in No. 15 they carry Classical poise to the point of detachment. *D.P.S.*

RACHMANINOFF: Symphony No. 2; Scherzo in D Minor; Vocalise

St. Petersburg Philharmonic, Jansons
EMI 55140 (67 min)
In terms of sonic richness and brilliance, this recording is a joy, but others are clearly more fetching interpretively. I admire the conductor's control and the (mostly) superb playing in the Second Symphony but find little to suggest a deeper involvement. Nothing very special in the *Vocalise*, either, though the scherzo by the thirteen-year-old Rachmaninoff is set forth with a straightforward charm that makes it more than agreeable. *R.F.*



SCHUBERT: String Quartet in E-flat Major (D. 87); String Trios in B-flat Major, No. 1 (D. 471) and No. 2 (D. 581)

L'Archibudelli
SONY 53982 (64 min)
It's rather amazing, but more than half the works in the Schubert Deutsch Catalog date from before the composer's twenty-first year; the three pieces here were all written between his sixteenth and twentieth years. The fluent, remarkably crafted music has moments of great charm, the scherzo of the quartet and the rondo of the D. 581 trio in particular. Elegant playing by the Archibudelli ensemble on period instruments, and lovely sound, too. *D.H.*

SOUTH AMERICAN LANDSCAPES

Allison Brewster Franzetti (piano)
PREMIER 1036 (78 min)
The fifth volume in Premier's American Piano series, this CD includes attractive works by seven Brazilian and Argentinian composers. All are pleasant, accessible, impressionistic compositions that describe in sound different aspects of American scenery or culture, and all but one are recorded here for the first time. Franzetti plays them stylishly, and they are well recorded. *William Livingstone*

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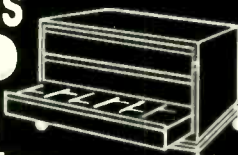
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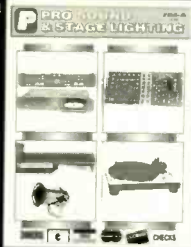
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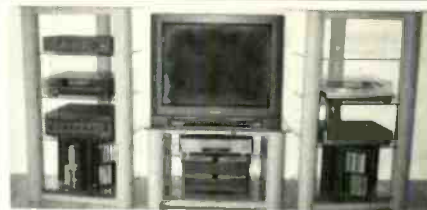
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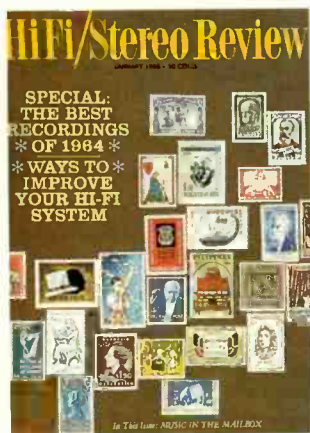
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30 Years Ago

In the January 1965 issue, eight of the magazine's critics picked their favorite records of the previous year. Surprisingly, no single album was chosen by more than one writer. Most popular composers: Mozart (three votes) and Richard Strauss (two votes). Most popular jazz performer: Duke Ellington (two votes).

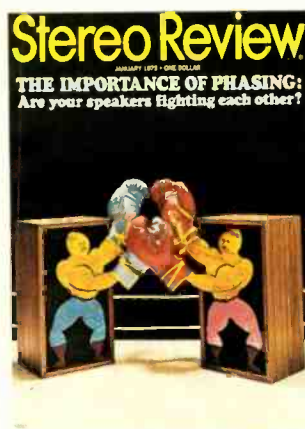
New products this month included Altec Lansing's 604E Super Duplex coaxial speaker system (\$199), the Colorsound Model 201, which translated music into corresponding intensities of red, green, and blue light, and the Jerrold SRX FM preamplifier, which boosted the strength of FM



The Colorsound 201, 1965

signals from an antenna before sending them to a tuner. In test reports, Julian Hirsch evaluated the \$57 AR-4 bookshelf speaker ("an outstanding value") and the \$60 Weathers Townsend single-speed turntable ("one of the best buys in record players").

Irony "R" Us: In Letters to the Editor, reader David Charles, of Asheville, North Carolina, announced his invention of a cough drop designed to give you a cough. "Now," he wrote, "you can attend a concert or recital without fear that you will have to remain silent while those all about you are coughing their heads off."



20 Years Ago

In Best of the Month, Richard Freed was blown away by André Previn's recording of the Shostakovich Eighth Symphony on Angel ("The best thing Previn has yet given us on records . . . absolutely not to be missed"). Noel Coppage was seduced by Jackson Browne's "Late for the Sky" ("An understated and possibly awesome talent"), and Joel Vance went gaga over Wizzard's "Introducing Eddy and the Falcons" ("the *Fledermaus* of rock-and-roll . . . a supreme and sublime joke"). Later in the review sections, Lester Bangs got off on Taj Mahal's "Mo' Roots" ("the masterpiece we always knew he had in him"). Roger Dettmar was less enthusiastic about London's première recording of *Death in Venice* by Benjamin Britten ("A composer creatively spent—indeed, overspent"), and Peter



The Revox A700, 1975

Reilly denied everything in a putdown of "Live at the Opera House" by the Pointer Sisters ("I never received this album. I never listened to it, and I never reviewed it. And that's final").

Among the new products were Pilot's Model 540 receiver (40 watts per channel from 20 to 20,000 Hz), three new speaker systems from Ortofon with wide-dispersion drivers, Nakamichi's least expensive stereo cassette deck, the \$79.95 Model 500, and the Philips SC-102 preamplifier with a rated frequency response of 2 Hz to 120 kHz ± 0.5 dB. Julian Hirsch tested the top-of-the-line Revox A700 tape deck, whose transport mechanism was designed to bridge the gap between the highest-quality consumer recorders and professional machines, the Integral Systems Model 200 stereo power amp. with 100 watts per channel and a price of \$350, and Design Acoustics' D-4 speaker system, which he said "should be able to play as loud as anyone could want without distortion or damage."

Dog Days of Winter: Reader P. J. Ascherl, of Sheffield Lake, Ohio, wrote that "Every time I open my STEREO REVIEW to 'The Simels Report,' I think

Yoko Ono, 1985



I've grabbed the *Journal of the A.K.C.* by mistake. The picture at the top bears a startlingly close resemblance to my cocker spaniel, Wolfgang."



10 Years Ago

In the issue's cover story, William Burton took notice of some of the more unusual turntables then available, including the monumental (180 pounds!) Entec Granite, which cost a whopping \$5,000—without tonearm. In test reports, Julian Hirsch examined Sansui's TU-D99X digital-synthesis tuner, the Baby Advent speaker (Advent's first new speaker after being acquired by Jensen), and the Pioneer SX-V90 A/V receiver. "Even those people for whom video compatibility is unimportant," Hirsch noted, "may find this receiver a good choice for a music system . . . [It's] a lot of receiver by any standard."

Short Attention Span Theater: Reviewing Yoko Ono's "Every Man Has a Woman," Mark Peel wasn't impressed by such lyrics as, "And that's the story of a dreamer" (from *Silver Horse*). "Actually," he observed, "that's the story of an undisciplined mind that can't complete a thought."

—Steve Simels

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